**North American-Central, LLC**

a Kinder Morgan company

September 23, 2024

STATE OF MICHIGAN
Department of Environment, Great Lakes and Energy
Air Quality Division
Grand Rapids District Office
350 Ottawa Ave NW, Unit 10
Grand Rapids, MI 49503

Subject: Renewable Operating Permit Renewal Application
North American-Central, LLC – Central Generating Station
SRN: N2804, Montcalm County

To Whom It May Concern,

North American-Central, LLC is submitting the enclosed Renewable Operating Permit (ROP) renewal application to the Michigan Department of Environment, Great Lakes and Energy, Air Quality Division (EGLE-AQD) for its landfill gas fueled electricity generating station located at the Central Sanitary Landfill in Pierson, Montcalm County.

The electricity generating station owned and operated by North American-Central, LLC is part of the Republic Services Central Sanitary Landfill stationary source. The stationary source has been issued ROP No. MI-ROP-N2804-2020a

This submittal contains information for the emissions units owned and operated by North American-Central, LLC. The renewal application for the emission units owned and operated by Republic Services will be submitted separately.

Impact Compliance & Testing, Inc. (ICT) assisted North American-Central, LLC with the preparation of the renewal application and is authorized to act as an agent on behalf of North American-Central, LLC to answer questions relating to reissuance of the permit.

Contact information is provided in the enclosed application should you have any questions or require additional information.

Sincerely,

Wyatt Ellis

Wyatt Ellis
Engineer - EHS

Enclosure

ORIGIN ID:QBFA (303) 914-7753
WYATT ELLIS
KMI
1667 COLE BLVD
SUITE 300
LAKEWOOD, CO 80401
UNITED STATES US

SHIP DATE: 23SEP24
ACTWGT: 1.00 LB
CAD: 105965339/WSXI3300

BILL SENDER

TO **AQD DISTRICT SUPERVISOR**
**EGLE GRAND RAPIDS DISTRICT**
**350 OTTAWA AVE, NW**
**UNIT 10**
**GRAND RAPIDS MI 49503**
(616) 356-0500 REF:
INV:
PO: KM923202481338696 DEPT:

583J/2/4EF9/9AE3

FedEx Express

J243024071301uv

TUE - 24 SEP 5:00P
STANDARD OVERNIGHT

TRK# 0201 **2797 9728 5705**

**XN GRRA**

49503
MI-US GRR

EGLE

# RENEWABLE OPERATING PERMIT RENEWAL APPLICATION FORM

*This information is required by Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Refer to instructions for additional information to complete the Renewable Operating Permit Renewal Application Form.*

## GENERAL INSTRUCTIONS

This application form should be submitted as part of an administratively complete application package for renewal of a Renewable Operating Permit (ROP). This application form consists of nine parts. Parts A – H must be completed for all applications and must also be completed for each section of a sectioned ROP. Answer all questions in all parts of the form unless directed otherwise. Detailed instructions for this application form can be found at http://michigan.gov/air (select the Permits Tab, "Renewable Operating Permits (ROP)/Title V", then "ROP Forms & Templates").

## PART A: GENERAL INFORMATION

Enter information about the source, owner, contact person and the responsible official.

### SOURCE INFORMATION

| SRN | SIC Code | NAICS Code | Existing ROP Number | Section Number (if applicable) |
|---|---|---|---|---|
| N2804 | 4911 | 221119 | N2804-2020a | 02 |

Source Name: North American-Central, LLC – Central Generating Station

Street Address: 21545 Cannonsville Road

| City | State | ZIP Code | County |
|---|---|---|---|
| Pierson | MI | 49339 | Montcalm |

Section/Town/Range (if address not available):

Source Description: Landfill gas to electricity generation facility

☐ Check here if any of the above information is different than what appears in the existing ROP. Identify any changes on the marked-up copy of your existing ROP.

### OWNER INFORMATION

| Owner Name | Section Number (if applicable) |
|---|---|
| Kinder Morgan, Inc. | 02 |

Mailing address (☐ check if same as source address): 1667 Cole Boulevard, Suite 300

| City | State | ZIP Code | County | Country |
|---|---|---|---|---|
| Lakewood | CO | 80401 | Jefferson | USA |

☐ Check here if any information in this ROP renewal application is confidential. Confidential information should be identified on an Additional Information (AI-001) Form.

| SRN: N2804 | Section Number (if applicable): 02 |
|---|---|

## PART A: GENERAL INFORMATION (continued)

At least one contact and responsible official must be identified. Additional contacts and responsible officials may be included if necessary.

### CONTACT INFORMATION

| Contact 1 Name | Title | | | |
|---|---|---|---|---|
| Wyatt Ellis | Environmental Engineer – Air Permitting and Compliance | | | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| Kinder Morgan, 1667 Cole Boulevard, Suite 300 | | | | |
| City | State | ZIP Code | County | Country |
| Lakewood | CO | 80401 | Jefferson | USA |
| Phone number | | E-mail address | | |
| 303-914-7753 | | Wyatt_Ellis@kindermorgan.com | | |

| Contact 2 Name (optional) | Title | | | |
|---|---|---|---|---|
| Max Fierro | Project Manager | | | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| Impact Compliance & Testing, 4180 Keller Rd STE B | | | | |
| City | State | ZIP Code | County | Country |
| Holt | MI | 48842 | Ingham | USA |
| Phone number | | E-mail address | | |
| 734-357-8397 | | Max.fierro@impactcandt.com | | |

### RESPONSIBLE OFFICIAL INFORMATION

| Responsible Official 1 Name | Title | | | |
|---|---|---|---|---|
| Anthony Hopwood | Director of Operations | | | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| Kinder Morgan, 501 Pennsylvania Parkway, Suite 250 | | | | |
| City | State | ZIP Code | County | Country |
| Indianapolis | IN | 46280 | Hamilton | USA |
| Phone number | | E-mail address | | |
| 317-832-6363 | | Anthony_Hopwood@kindermorgan.com | | |

| Responsible Official 2 Name (optional) | Title | | | |
|---|---|---|---|---|
| | | | | |
| Company Name & Mailing address (☐ check if same as source address) | | | | |
| | | | | |
| City | State | ZIP Code | County | Country |
| | | | | |
| Phone number | | E-mail address | | |
| | | | | |

☐ Check here if an AI-001 Form is attached to provide more information for Part A. Enter AI-001 Form ID:

| SRN: N2804 | Section Number (if applicable): 02 |
|---|---|

## PART B: APPLICATION SUBMITTAL and CERTIFICATION by Responsible Official

Identify the items that are included as part of your administratively complete application in the checklist below. For your application to be complete, it must include information necessary to evaluate the source and to determine all applicable requirements. Answer the compliance statements as they pertain to all the applicable requirements to which the source is subject. The source's Responsible Official must sign and date this form.

| **Listing of ROP Application Contents. Check the box for the items included with your application.** | |
|---|---|
| ☒ Completed ROP Renewal Application Form (and any AI-001 Forms) (required) | ☐ Compliance Plan/Schedule of Compliance |
| ☒ Mark-up copy of existing ROP using official version from the AQD website (required) | ☐ Stack information |
| ☐ Copies of all Permit(s) to Install (PTIs) that have not been incorporated into existing ROP (required) | ☐ Acid Rain Permit Initial/Renewal Application |
| ☒ Criteria Pollutant/Hazardous Air Pollutant (HAP) Potential to Emit Calculations | ☐ Cross-State Air Pollution Rule (CSAPR) Information |
| ☐ MAERS Forms (to report emissions not previously submitted) | ☐ Confidential Information |
| ☐ Copies of all Consent Order/Consent Judgments that have not been incorporated into existing ROP | ☒ Paper copy of all documentation provided (required) |
| ☐ Compliance Assurance Monitoring (CAM) Plan | ☒ Electronic documents provided (optional) |
| ☒ Other Plans (e.g., Malfunction Abatement, Fugitive Dust, Operation and Maintenance, etc.) | ☐ Other, explain: |

**Compliance Statement**

| | |
|---|---|
| This source is in compliance with **all** of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. | ☒ Yes ☐ No |
| This source will continue to be in compliance with all of its applicable requirements, including those contained in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and other applicable requirements not currently contained in the existing ROP. | ☒ Yes ☐ No |
| This source will meet in a timely manner applicable requirements that become effective during the permit term. | ☒ Yes ☐ No |

The method(s) used to determine compliance for each applicable requirement is/are the method(s) specified in the existing ROP, Permits to Install that have not yet been incorporated into that ROP, and all other applicable requirements not currently contained in the existing ROP.

If any of the above are checked No, identify the emission unit(s) or flexible group(s) affected and the specific condition number(s) or applicable requirement for which the source is or will be out of compliance at the time of issuance of the ROP renewal on an AI-001 Form. Provide a compliance plan and schedule of compliance on an AI-001 Form.

**Name and Title of the Responsible Official (Print or Type)**

Anthony Hopwood, Director of Operations

***As a Responsible Official, I certify that, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate, and complete.***

**Signature of Responsible Official** — **Date** 9-18-2024

| SRN: N2804 | Section Number (if applicable): 02 |
|---|---|

## PART C: SOURCE REQUIREMENT INFORMATION

Answer the questions below for specific requirements or programs to which the source may be subject.

| | | |
|---|---|---|
| C1. | Actual emissions and associated data from **all** emission units with applicable requirements (including those identified in the existing ROP, Permits to Install and other equipment that have not yet been incorporated into the ROP) are required to be reported in MAERS. Are there any emissions and associated data that have not been reported in MAERS for the most recent emissions reporting year? If Yes, identify the emission unit(s) that was/were not reported in MAERS on an AI-001 Form. Applicable MAERS form(s) for unreported emission units must be included with this application. | ☐ Yes ☒ No |
| C2. | Is this source subject to the federal regulations on ozone-depleting substances? (40 CFR Part 82) | ☐ Yes ☒ No |
| C3. | Is this source subject to the federal Chemical Accident Prevention Provisions? (Section 112(r) of the Clean Air Act Amendments, 40 CFR Part 68)<br>If Yes, a Risk Management Plan (RMP) and periodic updates must be submitted to the USEPA. Has an updated RMP been submitted to the USEPA? | ☐ Yes ☒ No<br>☐ Yes ☐ No |
| C4. | Has this stationary source **added or modified** equipment since the last ROP renewal that changes the potential to emit (PTE) for criteria pollutant (CO, NOx, PM10, PM2.5, $SO_2$, VOC, lead) emissions?<br>If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers, or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form.<br>If No, criteria pollutant potential emission calculations do not need to be included. | ☐ Yes ☒ No |
| C5. | Has this stationary source **added or modified** equipment since the last ROP renewal that changes the PTE for hazardous air pollutants (HAPs) regulated by Section 112 of the federal Clean Air Act?<br>If Yes, include potential emission calculations (or the PTI and/or ROP revision application numbers or other references for the PTE demonstration) for the added or modified equipment on an AI-001 Form. Fugitive emissions must be included in HAP emission calculations.<br>If No, HAP potential emission calculations do not need to be included. | ☐ Yes ☒ No |
| C6. | Are any emission units subject to the Cross-State Air Pollution Rule (CSAPR)? If Yes, identify the specific emission unit(s) subject to CSAPR on an AI-001 Form. | ☐ Yes ☒ No |
| C7. | Are any emission units subject to the federal Acid Rain Program? If Yes, identify the specific emission unit(s) subject to the federal Acid Rain Program on an AI-001 Form.<br>Is an Acid Rain Permit Renewal Application included with this application? | ☐ Yes ☒ No<br>☐ Yes ☐ No |
| C8. | Are any emission units identified in the existing ROP subject to compliance assurance monitoring (CAM)?<br>If Yes, identify the specific emission unit(s) subject to CAM on an AI-001 Form. If a CAM plan has not been previously submitted to EGLE, one must be included with the ROP renewal application on an AI-001 Form. If the CAM Plan has been updated, include an updated copy.<br>Is a CAM plan included with this application?<br>If a CAM Plan is included, check the type of proposed monitoring included in the Plan:<br>1. Monitoring proposed by the source based on performance of the control device, or<br>2. Presumptively Acceptable Monitoring, if eligible | ☐ Yes ☒ No<br><br>☐ Yes ☒ No<br><br>☐<br>☐ |
| C9. | Does the source have any plans such as a malfunction abatement plan, fugitive dust plan, operation/maintenance plan, or any other monitoring plan that is referenced in an existing ROP, Permit to Install requirement, or any other applicable requirement?<br>If Yes, then a copy must be submitted as part of the ROP renewal application. | ☒ Yes ☐ No |
| C10. | Are there any specific requirements that the source proposes to be identified in the ROP as non-applicable?<br>If Yes, then a description of the requirement and justification must be submitted as part of the ROP renewal application on an AI-001 Form. | ☐ Yes ☒ No |
| ☒ | Check here if an AI-001 Form is attached to provide more information for Part C. Enter AI-001 Form ID: **AI-**PLAN | |

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## PART D: PERMIT TO INSTALL (PTI) EXEMPT EMISSION UNIT INFORMATION

Review all emission units at the source and answer the question below.

D1. Does the source have any emission units that do not appear in the existing ROP but are required to be listed in the ROP application under R 336.1212(4) (Rule 212(4)) of the Michigan Air Pollution Control Rules? If Yes, identify the emission units in the table below. ☐ Yes ☒ No

If No, go to Part E.

*Note: Emission units that are subject to process specific emission limitations or standards, even if identified in Rule 212, must be captured in either Part G or H of this application form. Identical emission units may be grouped (e.g. PTI exempt Storage Tanks).*

| **Emission Unit ID** | **Emission Unit Description** | **Rule 212(4) Citation** [e.g. Rule 212(4)(c)] | **Rule 201 Exemption Rule Citation** [e.g. Rule 282(2)(b)(i)] |
|---|---|---|---|
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Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part D. Enter AI-001 Form ID: **AI-**

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## PART E: EXISTING ROP INFORMATION

Review all emission units and applicable requirements (including any source wide requirements) in the existing ROP and answer the questions below as they pertain to **all** emission units and **all** applicable requirements in the existing ROP.

| | |
|---|---|
| E1. Does the source propose to make any additions, changes or deletions to terms, conditions and underlying applicable requirements as they appear in the existing ROP?<br>If Yes, identify changes and additions on Part F, Part G and/or Part H. | ☐ Yes ☒ No |
| E2. For each emission unit(s) identified in the existing ROP, all stacks with applicable requirements are to be reported in MAERS. Are there any stacks with applicable requirements for emission unit(s) identified in the existing ROP that were not reported in the most recent MAERS reporting year? If Yes, identity the stack(s) that was/were not reported on applicable MAERS form(s). | ☐ Yes ☒ No |
| E3. Have any emission units identified in the existing ROP been modified or reconstructed that required a PTI?<br>If Yes, complete Part F with the appropriate information. | ☐ Yes ☒ No |
| E4. Have any emission units identified in the existing ROP been dismantled? If Yes, identify the emission unit(s) and the dismantle date in the comment area below or on an AI-001 Form. | ☐ Yes ☒ No |
| Comments: | |

☐ Check here if an AI-001 Form is attached to provide more information for Part E. Enter AI-001 Form ID: **AI-**

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|---|---|

## PART F: PERMIT TO INSTALL (PTI) INFORMATION

Review all emission units and applicable requirements at the source and answer the following questions as they pertain to **all** emission units with PTIs. Any PTI(s) identified below must be attached to the application.

F1. Has the source obtained any PTIs where the applicable requirements from the PTI have not been incorporated into the existing ROP? If Yes, complete the following table. If No, go to Part G. ☐ Yes ☒ No

| Permit to Install Number | Emission Units/Flexible Group ID(s) | Description (*Include Process Equipment, Control Devices and Monitoring Devices*) | Date Emission Unit was Installed/ Modified/ Reconstructed |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |

F2. Do any of the PTIs listed above change, add, or delete terms/conditions to **established emission units** in the existing ROP? If Yes, identify the emission unit(s) or flexible group(s) affected in the comments area below or on an AI-001 Form and identify all changes, additions, and deletions in a mark-up of the existing ROP. ☐ Yes ☐ No

F3. Do any of the PTIs listed above identify **new emission units** that need to be incorporated into the ROP? If Yes, submit the PTIs as part of the ROP renewal application on an AI-001 Form, and include the new emission unit(s) or flexible group(s) in the mark-up of the existing ROP. ☐ Yes ☐ No

F4. Are there any stacks with applicable requirements for emission unit(s) identified in the PTIs listed above that were not reported in MAERS for the most recent emissions reporting year? If Yes, identity the stack(s) that were not reported on the applicable MAERS form(s). ☐ Yes ☐ No

F5. Are there any proposed administrative changes to any of the emission unit names, descriptions or control devices in the PTIs listed above for any emission units not already incorporated into the ROP? If Yes, describe the changes on an AI-001 Form. ☐ Yes ☐ No

Comments:

☐ Check here if an AI-001 Form is attached to provide more information for Part F. Enter AI-001 Form ID: **AI-**

| SRN: N2804 | Section Number (if applicable): 02 |
|---|---|

## PART G: EMISSION UNITS MEETING THE CRITERIA OF RULES 281(2)(h), 285(2)(r)(iv), 287(2)(c), OR 290

Review all emission units and applicable requirements at the source and answer the following questions.

G1. Does the source have any new and/or existing emission units which do not already appear in the existing ROP and which meet the criteria of Rules 281(2)(h), 285(2)(r)(iv), 287(2)(c), or 290.

If Yes, identify the emission units in the table below. If No, go to Part H. ☒ Yes ☐ No

*Note: If several emission units were installed under the same rule above, provide a description of each and an installation/modification/reconstruction date for each.*

| **Origin of Applicable Requirements** | **Emission Unit Description – *Provide Emission Unit ID and a description of Process Equipment, Control Devices and Monitoring Devices*** | **Date Emission Unit was Installed/ Modified/ Reconstructed** |
|---|---|---|
| ☒ Rule 281(2)(h) or 285(2)(r)(iv) cleaning operation | A parts cleaner | Exact date unknown / start-up |
| ☐ Rule 287(2)(c) surface coating line | | |
| ☐ Rule 290 process with limited emissions | | |

Comments:

NANR operates one cold cleaner (solvent parts washer) at the facility.

Applicable Rule 201 exemption: Rule 281(h) Cold cleaners that have an air/vapor interface of not more than 10 square feet.

Air / vapor interface: Open area is less than 10 square feet.

Solvent used: VIC-SOL Mineral Spirits (Reclaimed); trimethyl benzene, CAS No. 95-63-6; solvent blue 58, CAS No. 29887-08-9; mineral spirits, CAS No. 8032-32-4. 108°F flashpoint; boiling point 315-392°F.

Reid vapor pressure*: The product spec sheet specifies a vapor pressure of 10 mmHg (0.19 psia) at 100°F, which is below the 31 mmHg (0.6 psia) threshold.**

* The Reid vapor pressure is defined as the absolute vapor pressure of an organic compound at 100°F

** Additional emission control requirements under Rule 707 are applicable to cold cleaners using solvent with a Reid vapor pressure greater than 0.6 psia

☐ Check here if an AI-001 Form is attached to provide more information for Part G. Enter AI-001 Form ID: **AI-**

| SRN: N2804 | Section Number (if applicable): 02 |
|---|---|

## PART H: REQUIREMENTS FOR ADDITION OR CHANGE

Complete this part of the application form for all proposed additions, changes or deletions to the existing ROP. This includes state or federal regulations that the source is subject to and that must be incorporated into the ROP or other proposed changes to the existing ROP. **Do not include additions or changes that have already been identified in Parts F or G of this application form.** If additional space is needed copy and complete an additional Part H.

Complete a separate Part H for each emission unit with proposed additions and/or changes.

| | |
|---|---|
| H1. Are there changes that need to be incorporated into the ROP that have not been identified in Parts F and G? If Yes, answer the questions below. | ☐ Yes ☒ No |
| H2. Are there any proposed administrative changes to any of the existing emission unit names, descriptions or control devices in the ROP? If Yes, describe the changes in questions H8 – H16 below and in the affected Emission Unit Table(s) in the mark-up of the ROP. | ☐ Yes ☐ No |
| H3. Does the source propose to add a new emission unit or flexible group to the ROP not previously identified in Parts F or G? If Yes, identify and describe the emission unit name, process description, control device(s), monitoring device(s) and applicable requirements in questions H8 – H16 below and in a new Emission Unit Table in the mark-up of the ROP. See instructions on how to incorporate a new emission unit/flexible group into the ROP. | ☐ Yes ☐ No |
| H4. Does the source propose to add new state or federal regulations to the existing ROP?<br>If Yes, on an AI-001 Form, identify each emission unit/flexible group that the new regulation applies to and identify each state or federal regulation that should be added. Also, describe the new requirements in questions H8 – H16 below and add the specific requirements to existing emission units/flexible groups in the mark-up of the ROP, create a new Emission Unit/Flexible Group Table, or add an AQD template table for the specific state or federal requirement. | ☐ Yes ☐ No |
| H5. Has a Consent Order/Consent Judgment (CO/CJ) been issued where the requirements were not incorporated into the existing ROP? If Yes, list the CO/CJ number(s) below and add or change the conditions and underlying applicable requirements in the appropriate Emission Unit/Flexible Group Tables in the mark-up of the ROP. | ☐ Yes ☐ No |
| H6. Does the source propose to add, change and/or delete **source-wide** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H7. Are you proposing to **streamline** any requirements? If Yes, identify the streamlined and subsumed requirements and the EU ID, and provide a justification for streamlining the applicable requirement below. | ☐ Yes ☐ No |

| SRN: N2804 | Section Number (if applicable): 02 |
|---|---|

## PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

| | |
|---|---|
| H8. Does the source propose to add, change and/or delete **emission limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H9. Does the source propose to add, change and/or delete **material limit** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H10. Does the source propose to add, change and/or delete **process/operational restriction** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H11. Does the source propose to add, change and/or delete **design/equipment parameter** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H12. Does the source propose to add, change and/or delete **testing/sampling** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H13. Does the source propose to add, change and/or delete **monitoring/recordkeeping** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H14. Does the source propose to add, change and/or delete **reporting** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |

| SRN: N2804 | Section Number (if applicable): 02 |
|---|---|

## PART H: REQUIREMENTS FOR ADDITION OR CHANGE – (continued)

| | |
|---|---|
| H15. Does the source propose to add, change and/or delete **stack/vent restrictions**? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H16. Does the source propose to add, change and/or delete any **other** requirements? If Yes, identify the addition/change/deletion in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| H17. Does the source propose to add terms and conditions for an alternative operating scenario or intra-facility trading of emissions? If Yes, identify the proposed conditions in a mark-up of the corresponding section of the ROP and provide a justification below. | ☐ Yes ☐ No |
| ☐ Check here if an AI-001 Form is attached to provide more information for Part H. Enter AI-001 Form ID: **AI-** | |

EGLE

# RENEWABLE OPERATING PERMIT APPLICATION
# AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

| | SRN: N2804 | Section Number (if applicable): 02 |
|---|---|---|

1. Additional Information ID
**AI-PTE**

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

Emission units and limits are unchanged from the current ROP. The potential maximum emissions based on the permitted limits are below. Full PTE calculations have previously been submitted to EGLE

EUENGINE1 & EUENGINE3 (CAT 3520) in TpY

- CO – 143
- NOx – 43.3
- Total VOC[1] – 43.3
- Formaldehyde – 18.4
- $SO_2$ – 50.8
- Total HAPs – 20.5

EUENGINE2 (Cat 3516LE) in TpY

- CO – 34.6
- NOx – 22.3
- Total VOC[1] – 11.1
- Formaldehyde – 3.11
- $SO_2$ – 14.5
- Total HAPs – 3.72

Total Facility

- CO – 177
- NOx – 65.6
- Total VOC[1] – 54.4
- Formaldehyde – 21.5
- $SO_2$ – 64.5
- Total HAPs – 24.2

Note
1. VOC does not include formaldehyde

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# RENEWABLE OPERATING PERMIT APPLICATION
# AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

| | SRN: N2804 | Section Number (if applicable): 02 |
|---|---|---|

1. Additional Information ID
**AI-PLAN**

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

Attached are copies of the NANR Central Generating Station Treatment System Operating Plan / Preventative Maintenance Plan (TSOP/PMP) and Malfunction Abatement Plan (MAP).

Page of

North American-Central, LLC

a Kinder Morgan company

**MALFUNCTION ABATEMENT / PREVENTATIVE MAINTENANCE PLAN**

North American-Central, LLC – Central Generating Station
Montcalm County, Michigan
SRN: N2804
Permit No.: MI-ROP-N2804-2020a, Section 2

*North American-Central, LLC (North American) is submitting the following Preventive Maintenance Plan pursuant to the requirement of the Renewable Operating Permit for the Central Generating Station. The Preventive Maintenance Plan is and has been North American's standard operating procedure for the Plant.*

## 1. Responsible Personnel

The personnel responsible for overseeing the inspection, maintenance, and repair of the Plant and related facilities are:

Justin Boone
Plant Supervisor
Central Generating Station
21545 Cannonsville Road
Pierson, Michigan 49339
Telephone: 269-921-2200

Matt Diepenhorst
Operations Manager
Central Generating Station
21545 Cannonsville Road
Pierson, Michigan 49339
Telephone: 616-550-3238

## 2. Purpose

The purpose of this Malfunction Abatement/Preventative Maintenance Plan is to establish appropriate process monitoring, malfunction response and preventative maintenance procedures to maintain compliance with applicable air pollutant emission limits for the three (3) landfill gas (LFG) fueled engines that will be operated at the Central Generating Station.

This plan has been developed in accordance with the requirements of Renewable Operating Permit No. MI-ROP-N2804-2020a (Section 2), Condition D.III.2. that specifies:

No later than 30 days after startup of EUENGINE3, the permittee shall submit to the AQD District Supervisor, for review and approval, a malfunction abatement/operation and preventative maintenance plan (PM/MAP) for FGRICEENG. After approval of the malfunction abatement/operation and preventative maintenance plan by the AQD District Supervisor, the permittee shall not operate FGRICEENG unless the malfunction abatement /operation and preventative maintenance plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

a. Identification of the equipment and, if applicable, air-cleaning device, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.
b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.

c. Identification of the equipment and, if applicable, air-cleaning device, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.

d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.

e. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

A copy of the most recent Engine Malfunction Abatement/ Preventative Maintenance Plan will be kept on file at the facility.

## 3. Facility and General Process Information

North American has been permitted to install and operate two (2) Caterpillar (CAT®) G3520C and one (1) Caterpillar (CAT®) G3516 reciprocating internal combustion (IC) engines that are fueled with LFG and connected to electricity generators (IC engine/generator). The emission units are identified in the permit as flexible group FGRICEENG.

The LFG generated at the Central Sanitary Landfill is collected using a system of wells, gas headers and blowers, which have been installed and are operated by the landfill owner. The LFG is dewatered, filtered, and compressed by the on-site treatment system before being supplied as fuel to the IC engine/generator sets. The electricity generated is distributed to the local grid.

## 4. IC Engine / Generator Malfunction Abatement

The CAT® engines are designed to fire low-pressure, lean fuel mixtures (e.g., LFG). The engines are equipped with an air-to-fuel ratio controller that monitors engine performance parameters and automatically adjusts the air-to-fuel ratio and ignition timing to maintain efficient fuel combustion. This is performed through software provided by Caterpillar.

The engine/generator sets are not equipped with add-on emission control devices. Therefore, the units maintain compliance with applicable air pollutant emission limits through the proper operation of the engine and efficient fuel combustion, which:

- Reduces the formation of carbon monoxide (CO) and nitrogen oxide (NOx) emissions.
- Destroys methane and nonmethane organic compounds (NMOC) in the LFG fuel (nonmethane hydrocarbons may be classified as volatile organic compounds and/or hazardous air pollutants).

Malfunction Abatement for the CAT® engines consists of monitoring critical engine parameters to ensure proper operation. Each engine is equipped with numerous sensors that monitor critical operation parameters. An engine control module (ECM) processes the data and adjusts operating variables (ignition timing, air/fuel ratio, engine speed), activate alarms to warn of an out-of-range variable or shuts down the engine.

## 4.1 Engine Oil / Engine Coolant Temperature

Engine oil and engine coolant conditions do not directly influence air pollutant emissions. However, maintaining proper engine oil/coolant temperature and pressure is critical to the operation of the engine and preventing early or catastrophic mechanical failure.

The engine is equipped with sensors to monitor the engine oil temperature and oil pressure before and after the oil filter. Notification alarms are activated based on out-of-range conditions (e.g., high oil temperature, low or high oil pressure). An automatic shutdown will occur if the variable exceeds a critical setpoint.

Engine coolant temperature is monitored to assure proper circulation of coolant and cooling of the engine block. Notification alarms are activated based on out-of-range conditions (high or low coolant temperature). An automatic shutdown will occur if the coolant temperature exceeds its critical setpoint temperature.

Abnormal engine operations or shutdowns are logged by the ECM. The cause of the problem is investigated and corrected by the operators and the engine is restarted.

## 4.2 Air / Fuel Ratio Control

Maintaining proper air/fuel ratio results in efficient fuel combustion and limits the formation of CO and NOx. The engine is equipped with an inlet gas quality monitor that continuously monitors the inlet LFG fuel for methane (fuel value) and oxygen content. The Engine Control Module (ECM) software monitors the fuel gas conditions, engine load and engine speed and automatically adjusts the air/fuel mix valve (raptor valve position) to achieve the desired air/fuel mix setting. This programming is set by the manufacturer.

If the monitored LFG oxygen level increases, or the methane content decreases, beyond preset values the engine automatically shuts down if the desired air/fuel mix ratio cannot be obtained. This prevents excess emissions.

Abnormal fuel conditions and/or engine shutdown is logged by the ECM. The cause of the excess oxygen or decreased methane is investigated (this is typically caused from landfill wellfield maintenance or adjustments) and corrected by the operators and the engines are restarted.

## 4.3 Crankcase Vents

The crankcase exhaust is a necessary component of any reciprocating engine. A very small amount of combustion gases can slip past the piston rings ("blow-by") and collect in the upper portion of the engine crankcase. Therefore, the engines are equipped with a system that exhausts the upper portion of the crankcase to remove any of these gases, as this would eventually result in engine failure. Because the exhaust system pulls on the crankcase where oil is present, the crankcase exhaust is routed through an oil mist removal and filtration system for particulate control before being discharged to an exhaust pipe.

North American maintains this equipment by inspecting the filter (mist eliminator) on a scheduled basis, cleaning or replacing the filter as necessary. If emissions are observed from the vent stack, the filter is inspected as soon as possible.

### 4.4 Daily Inspections

North American personnel keep Daily Logs recording the status of operations for each of the generating unit. Any shutdowns, likely cause of the shutdown, and the down time period are recorded and the records maintained at the Plant.

The operator performs daily visual inspections of the engines and logs the following information in a daily log:

- Coolant system level;
- Engine air cleaner service indicator;
- Engine oil level;
- Fuel system fuel filter differential pressure; and
- Generator load.

### 4.5 Engine Operating Parameter Ranges

The following table presents operating ranges (or maximum values) for parameters that have been determined to be critical for proper engine operation.

| Engine Parameter | Minimum | Maximum |
|---|---|---|
| Engine Coolant Pressure (psi) | 38 | 60 |
| Engine Coolant Temperature (°F) | --- | 248 |
| Engine Oil Pressure (psi) | > 0 | --- |
| Engine Oil Temperature (°F) | --- | 219 |
| Combustion Air Temperature (°F) | --- | 167 |
| Gas (Fuel) Pressure (psi) | --- | 19.6 |

### 4.6 On-Call Dial-Out System

The facility is not staffed around the clock. Therefore, the ECM is connected to a dial-out system that notifies the on-call operator of any engine shutdowns and certain faults and warnings during evening/weekend/holiday hours when the facility is not staffed.

At any time, if one of the generating units shuts down, the plant operator is paged immediately, this operator is on call twenty-four (24) hours a day, seven (7) days a week and returns to the plant to investigate the nature of the shutdown. A rotation system is in place with operators from near-by locations covering for each other. Whenever a shutdown occurs, the flare immediately picks up the extra gas. As such, the flare is a backup to the engine plant.

Corrective actions/procedures in the event of a malfunction of Treatment System: (i) evaluate problem; (ii) correct problem with replacement part needed; (iii) if cannot be repaired in timely manner, turn flare on.

## 5. Preventative Maintenance

FGRICEENG are maintained per the guidelines in the Caterpillar Operation and Maintenance Manual. The actual maintenance schedule is dependent on actual fuel gas conditions and observations of engine performance.

Proper maintenance of the fuel train ensures good fuel mixing and combustion, which limits CO and NOx formation. The monitoring and regular replacement of worn engine parts (such as cylinder seals) reduces particulate matter (PM10/PM2.5) emissions (primarily engine oil).

The crankcase ventilation filters are inspected at least every 6-months and whenever emissions are observed.

### 5.1 Parts Inventory

North American maintains a stock of long-lead time or hard to obtain replacement parts for the electric generating units and for the gas compressor at the Central Generating Station. The part list is balanced against the requirement given North American's long-term engine maintenance program following practices in the industry.

Michigan Caterpillar also stocks a list of parts as required by the various landfill gas to energy power producers in the state of Michigan. Additionally, North American works in concert at the operator level to network with other likely situated companies to exchange parts when required. Typical items maintained on-site for the generators are engine oil, spark plugs, filters, and sensors.

The following parts are kept on-site for the Treatment System: Site glass gauges for the water separator and oil separator; spare gauges for coalescing filters; coalescing filters; spare compressor belt, spare vanes for the compressor and 200 gallons of oil for the compressor.

Spare filters are typically maintained on-site for the crankcase ventilation system.

### 5.2 Oil Sampling Program

When engine oil is changed per the preventative maintenance schedule (typically monthly), a sample of the oil is sent for analysis of several properties. The oil analysis results are used to determine fuel condition, the level of engine wear or parts that may need attention (inspection or replacement). Depending upon the results, the maintenance schedule may be adjusted from the manufacturer's guidelines.

## 6. Recordkeeping

The following information will be maintained to verify proper operation and maintenance of the CAT® engines and that proper procedures were implemented in response to malfunction requirements:

1. Daily records of the equipment monitoring parameters that are presented in this document (Section 4.3 Daily Inspections).
2. Equipment maintenance records for those systems that affect the operation of the engine.
3. Engine faults, alarms and shutdowns are recorded and logged by the ECM.

4. Records of process malfunctions or equipment failures if such events are different from those covered in this Plan.

## 7. Plan Revisions

ROP No. MI-ROP-N2804-2020a (Section 2), Condition D.III.2 specifies that:

If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the malfunction abatement/preventative maintenance plan to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies. This Malfunction Abatement/Preventative Maintenance plan will be:

1. Amended or modified if equipment or processes are added that are not covered under the plan; or
2. Revised within 45 days of an event if the procedures described in this document do not adequately address any malfunction event that occurs at the facility.

Plan revisions will be documented using the revision history log (Appendix A) and submitted to the AQD District Supervisor as required by the Permit.

North American-Central, LLC

a Kinder Morgan company

**Appendix A**
**Plan Revision History**

North American-Central, LLC

a Kinder Morgan company

| Date | Actions / Reasons for Revision |
|---|---|
| 8/17/2020 | Initial Draft of MAP/PMP |
| 9/11/2024 | Updated personnel, standardization with similar facility plans, addition of crankcase vents, and other minor edits |
| | |
| | |
| | |
| | |

# TREATMENT SYSTEM OPERATING PLAN
# PREVENTATIVE MAINTENANCE PLAN

Central Generating Station
Montcalm County, Michigan

## 1. Purpose

North American-Central, LLC (NANR) (owned by Kinder Morgan) prepared this Treatment System Operating Plan (TSOP) and Preventative Maintenance Plan (PMP) to ensure proper monitoring and operation of the facility and gas treatment system and to comply with the requirements to maintain a site-specific treatment system monitoring plan as specified in 40 CFR Part 62, Subpart OOO and 40 CFR Part 63, Subpart AAAA

## 2. Responsible Personnel

The personnel responsible for overseeing the inspection, maintenance, and repair of the equipment and process identified in this Plan are:

Justin Boone
Operations Supervisor
Central Generating Station
21545 Cannonsville Road,
Pierson, Michigan 49339
269-921-2200

Matt Diepenhorst
Operations Manager
Central Generating Station
21545 Cannonsville Road,
Pierson, Michigan 49339
616-550-3238

## 3. Equipment Identification

The NANR renewable energy facility primarily consists of:

- Gas treatment equipment
- One (1) CAT G3516 lean-burn engine-generator set
- Two (2) CAT G3520C lean-burn engine-generator sets

NANR maintains a stock of long-lead time or hard to obtain replacement parts for the electric generating units and for the treated landfill gas (LFG) fueled engines. The part list is balanced against the requirement given NANR's long-term engine maintenance program following practices in the industry.

Michigan Caterpillar also stocks a list of parts as required by the various LFG-to-energy power producers in the state of Michigan. Additionally, NANR works in concert at the operator level to network with other likely situated companies to exchange parts when required.

## 4. Gas Treatment System Operation

The gas received from the Central Sanitary Landfill (Central Landfill) is initially de-watered in knockout tanks that are located upstream of the NANR gas treatment system where a portion of the condensate in the LFG is removed. After the initial knockout de-watering, the LFG is treated in equipment and processes operated by NANR that consist of:

1. A scrubber / filtration vessel that contains a wire-mesh filter which is designed to remove particles in the gas stream that are 10 microns or larger. Condensate collected by the scrubber collects in the bottom of vessel where it is transferred by gravity sump back to the landfill's condensate management system.

2. Gas compressors that increase the pressure (and temperature) of the gas.

3. An air-to-gas heat exchanger that uses ambient air to cool the compressed gas from approximately 200°F to 120°F. This cooling produces additional condensate

4. An oil-water separator that uses a coalescing filter to remove condensate formed in the air-to-gas heat exchanger and also removes any compressor oil from the gas stream.

## 5. Treatment System Monitoring and Operating Ranges

Based on the design of the Central LFG treatment system, the following equipment and processes are monitored daily during normally scheduled workdays and records are maintained weekly. Table 1 at the end of this Plan summarizes the treatment system process monitoring and required parameter ranges.

The Scrubber Vessel is monitored with a liquid level sight tube and a differential pressure gauge. The liquid level should be maintained at less than 50% on the sight tube and is controlled by manually draining condensate from the vessel. The differential pressure from the inlet to outlet of the vessel should be maintained at 0.5 pounds per square inch (psid) or less. A high differential pressure indicates filter plugging. If this occurs, the vessel must be isolated from the gas stream and the filters blown out or changed.

The Compressor has a normal discharge pressure between 3 and 7 pounds per square inch gauge (psig). The temperature of the gas after compression is typically approximately 150°F. Temperature readings above 200°F indicate a problem requiring shutdown of the compressor for investigation. The compressor oil level should be maintained at 2 gallons or more and operate with no visible leaks.

The Air-to-Gas Cooler typically cools the compressed gas to 100°F or lower. Outlet gas temperatures above 150°F indicate an unusually high inlet temperature (check compressed gas temperature) or poor heat transfer most likely caused build up within the cooler. If this occurs, the unit must be isolated and cleaned.

The Oil Water Separator has an automatic drain to maintain an appropriate liquid level within the vessel. An abnormal liquid may require manual draining or indicates a problem with the automatic drain system that must be investigated.

## 6. Generator Set Monitoring

At any time, if one of the generating units shuts down, the plant operator is paged immediately by the automatic notification system. This operator is on call twenty-four (24) hours a day, seven (7) days a week and returns to the plant to investigate the nature of the shutdown. A rotation system is in place with operators from near-by locations covering for each other. Whenever a shutdown occurs, the flare immediately picks up the extra gas. As such, the flare is a backup to the renewable energy plant.

In general, investigation and corrective actions follow these procedures:

(i) Evaluate the problem.
(ii) If the issue can be safely and easily corrected, perform the corrective and action and restart the equipment.
(iii) If corrective action requires replacement of parts that are in on-site inventory, isolate the equipment, replace the parts, and restart equipment.
(iv) If the repair or corrective action cannot be performed in a timely manner, verify that the flare is running and make arrangements for repairs (outside service technician, procuring new parts, etc.).

## 7. Recordkeeping

NANR's personnel keep Daily Logs recording the status of operations for each of the generating units and gas treatment system. Shutdowns of the generating units or entire gas treatment system (whether automatic or manual) are logged with the likely cause of the shutdown, downtime period, and time that operations were restarted.

An example of the Daily Log Report form is included at the end of this Plan as an attachment.

## 8. Regulatory Requirements

This Plan was prepared to ensure proper monitoring and operation of the facility and gas treatment system and to comply with the requirements to maintain a site-specific treatment system monitoring plan as specified in 40 CFR Part 62, Subpart OOO and 40 CFR Part 63, Subpart AAAA. These requirements are summarized in this section. The regulatory language in Subpart OOO and NESHAP AAAA are similar but not identical. Where applicable, similar citations are grouped together.

This site-specific treatment system monitoring plan is required because the associated landfill is or will be subject to control requirements under 40 CFR 62, Subpart OOO and 40 CFR 63, Subpart AAAA. As part of the landfill gas collection and control system (GCCS) on-site, all or a portion of the landfill gas is "treated" as part of its overall management prior to sale or beneficial use. Per §62.16730/§63.1990, a treatment system is one that filters, de-waters, and compresses landfill gas for sale or beneficial use.

A treatment system is one of the acceptable "control systems" under the NSPS/NESHAP rule as set forth in §62.16714(c)(3)/§63.1959(b)(2)(iii)(C), which specify that the owner may:

*Route the collected gas to a treatment system that processes the collected gas for subsequent sale or beneficial use such as fuel for combustion, production of vehicle fuel, production of high-Btu gas for pipeline injection, or use as a raw material in a chemical manufacturing process. Venting of treated landfill gas to the ambient air is not allowed. If the treated landfill gas cannot be routed for subsequent sale or beneficial use, then the treated landfill gas must be controlled according to* §62.16714 *(c)(1) or (c)(2)/* §63.1959(b)(2)(iii)(A) or (B).

NANR and/or the landfill operator operates the treatment system as a control system for the landfill gas subject to NSPS/NESHAP control, the monitoring requirements, specifically §62.16722(g)/ §63.1961(g) require that:

*The treatment system must maintain and operate all monitoring systems associated with the treatment system in accordance with the site-specific*

*treatment system monitoring plan required in §62.16726(b)(5)(ii)/*§63.1983(b)(5)(ii).

This site-specific treatment system monitoring plan satisfies the requirements of §62.16726(b)(5)(ii)/§63.1983(b)(5)(ii). Each element of the monitoring plan is listed here followed by the site-specific information related to this specific treatment system.

***§62.16726(b)(5)(ii)(A)/§63.1983(b)(5)(ii)(A)*** *Monitoring records of parameters that are identified in the treatment system monitoring plan and that ensure the treatment system is operating properly for each intended end use of the treated landfill gas. At a minimum, records should include records of filtration, de-watering, and compression parameters that ensure the treatment system is operating properly for each intended end use of the treated landfill gas.*

Per §62.16722(g)(1)/§63.1961(g)(1), flow must be continuously (at least once every 15 minutes) monitored into the treatment system. The flow measurement device will be maintained and calibrated per manufacturer's recommendations. Also, per §62.16722(g)(2)/§63.1961(g)(2), if there is a bypass line, from the treatment system, it must be secured in the closed position and inspected at least monthly to verify that gas is not being diverted to the bypass line and circumventing appropriate NSPS control.

Per §62.16726/§63.1983 all records must be 5 years up-to-date, readily accessible, on-site. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable. The person(s) performing the inspection as per the frequency listed in Table 1, will record the observed value and determine if the value is within the range of operation. If the recorded value is out of the range of operation, they will immediately take corrective action, including contacting all relevant staff, as necessary. Furthermore, collected data and a description of the actions taken will be placed into the plant file.

***§62.16726 (b)(5)(ii)(B)/§63.1983(b)(5)(ii)(B)*** *Monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for each intended end use of the treated landfill gas.*

Table 1 outlines monitoring methods, frequencies, and operating ranges for each monitored treatment operating parameter.

***§62.16726 (b)(5)(ii)(C)/ §63.1983(b)(5)(ii)(C)*** *Documentation of the monitoring methods and ranges, along with justification for their use.*

The justification for the monitoring methods and ranges for each monitored treatment operating parameter is based on operational experience and/or

manufacturer recommendation. This section is required since the ranges of these treatment parameters are not prescribed by the NSPS rules, rather, they are to be set on a site-specific basis (since different beneficial uses and gas sales require different levels of treatment).

***§62.16726 (b)(5)(ii)(D)/§63.1983(b)(5)(ii)(D)*** *Identify who is responsible (by job title) for data collection.*

Personnel responsible for data collection are identified in Section 2 of this Plan. These individuals may assign responsibility to another facility operator.

***§62.16726 (b)(5)(ii)(E)/§63.1983(b)(5)(ii)(E)*** *Processes and methods used to collect the necessary data.*

Table 1 specifies how each type of treatment parameter (filtration, de-watering, and compression) will be monitored.

***§62.16726 (b)(5)(ii)(F)/§63.1983(b)(5)(ii)(F)*** *Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems.*

The data and equipment are reviewed regularly during the month to verify accuracy and to evaluate for trends that may be characteristic of diminishing performance. Additionally, staff will perform visual inspections of the equipment and note issues as they arise. Repairs will be made as necessary. At a minimum, filters will be cleaned and or replaced as needed to maintain the listed differential pressures.

## 9. Gas Sulfur Monitoring / $SO_2$ Emissions

Sulfur monitoring is performed according to the Sulfur Monitoring Plan developed by NANR as prescribed by the facility's air permit (Renewable Operating Permit).

**Table 1 - Landfill Gas Treatment System Monitoring Plan**

| Equipment | Parameter | Inspection Frequency[1] | Monitoring Device | Range of Operation[2] | Basis[3] |
|---|---|---|---|---|---|
| Scrubber / Filter | Differential Pressure | Weekly | Diff. Pressure Monitoring Device | 0 – 0.5 psi | Operational Experience |
| | Liquid Level | Weekly | Sight Glass | < 50% Level | Operational Experience |
| Compressor | Discharge Pressure | Weekly | Pressure Gauge | 3 to 7 psig | Operational Experience |
| | Discharge Temperature | Weekly | Temperature Monitor | < 200°F | Operational Experience |
| Air-Gas Cooler | Outlet Temperature | Weekly | Temperature Monitor | < 150°F | Operational Experience |
| Oil / Water Separator | Liquid Level (Auto Operation) | Weekly | Sight Glass | Level as marked on sight glass | Operational Experience |

1. Proper operation is checked daily during normally scheduled workdays, records of individual components taken weekly.
2. Refer to Section 5 of this Plan for possible corrective actions if the monitored value is outside of the range(s) specified in the table.
3. NANR has operated gas-to-energy facilities for greater than 20 years and established these ranges based on experience with designing and operating these facilities.

# ATTACHMENT 1
# DAILY LOG RECORDING SHEET

| Switch Gear Room | | | | | Date | 2-23-22 |
|---|---|---|---|---|---|---|
| | | | | | Time | 9:00 A.M. |
| | | 1500 - 1450 | 1550 - 1450 | 1550 - 1450 | Name | Vic |
| | | Unit 1 | Unit 2 | Unit 3 | | |
| | Energy | 60088 | 79588 | 68471 | | |
| | Volts | 4.248 | 4.236 | 4.231 | | |
| | Amps | 205.1 | 204.8 | 204.1 | | |
| | KW | 1.452 | 1.429 | 1.447 | | |
| | Pwr factor | 97 | 97 | 97 | | |
| | HZ | 59.9 | 59.9 | 59.9 | | |

| CAT ET Laptop | | Unit 1 70/75 | Unit 2 58/62 | Unit 3 68/71 | Temp | |
|---|---|---|---|---|---|---|
| | Exhaust Temp | 1128 | 1137 | 1141 | | |
| | Oil Pressure | 75 | 78 | 74 | | |
| | Coolant Temp | 221 | 221 | 223 | | |
| | Manifold Pressure | 43.2 | 41.6 | 40.5 | | |
| | Oil Filter Diff Pres | 5 | 4-5 | 6 | | |
| | Coolant Pressure | 25 | 44 | 42 | | |
| | Inlet Air Temp | 127 | 125 | 110 | | |
| | Oil Temperature | 196 | 198 | 198 | | |
| | Gas Pressure | 3.5 | 3.5 | 3.5 | | |
| | Fuel Flow SCFM | 562 | 554 | 531 | | |
| | Throttle Position % | 55.36 | 50.51 | 48.72 | | |
| | Fuel Factor | 102 | 101 | 103 | | |
| | Fuel BTU | 430 | 410 | 440 | | |
| | Inlet Fuel Temp | 109 | 109 | 102 | | |
| | Engine Hours | 89003 | 80611 | 83,371 | | |
| | | | | | | |
| Gas Chiller | Inlet Air Temp | 128 | | | | |
| | Outlet Air Temp | 91 | | | | |
| | | | | | | |
| Gas Analyzer | | | | | | |
| | Oxygen % | 1.1% | | | | |
| | Methane % | 49.0% | | | | |
| Flare Pad | | | | | | |
| | Vacuum | -65 | | | | |
| | Total Flow | | | | | |
| Diagnostic Codes: | | Clean Run | Clean Run | Clean Run | | |

EGLE

# RENEWABLE OPERATING PERMIT APPLICATION
# AI-001: ADDITIONAL INFORMATION

This information is required by Article II, Chapter 1, part 55 (Air Pollution Control) of P.A. 451 of 1994, as amended, and the Federal Clean Air Act of 1990. Failure to obtain a permit required by Part 55 may result in penalties and/or imprisonment. Please type or print clearly. Refer to instructions for additional information to complete this form.

| | SRN: N2804 | Section Number (if applicable): 02 |
|---|---|---|

1. Additional Information ID
**AI-ROP**

**Additional Information**

2. Is This Information Confidential? ☐ Yes ☒ No

Attached is the marked-up Section 02 of the RO-Permit for Central Sanitary Landfill; MI-ROPN2804-2020a. No changes were identified.

Page of

# Section 2 – North American Natural Resources Inc. – Central Generating Station

# A. GENERAL CONDITIONS

## Permit Enforceability

- All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. **(R 336.1213(5))**

- Those conditions that are hereby incorporated in a state-only enforceable Source-Wide PTI pursuant to Rule 201(2)(d) are designated by footnote one. **(R 336.1213(5)(a), R 336.1214a(5))**

- Those conditions that are hereby incorporated in a federally enforceable Source-Wide PTI pursuant to Rule 201(2)(c) are designated by footnote two. **(R 336.1213(5)(b), R 336.1214a(3))**

## General Provisions

1. The permittee shall comply with all conditions of this ROP. Any ROP noncompliance constitutes a violation of Act 451, and is grounds for enforcement action, for ROP revocation or revision, or for denial of the renewal of the ROP. All terms and conditions of this ROP that are designated as federally enforceable are enforceable by the Administrator of the United States Environmental Protection Agency (USEPA) and by citizens under the provisions of the federal Clean Air Act (CAA). Any terms and conditions based on applicable requirements which are designated as "state-only" are not enforceable by the USEPA or citizens pursuant to the CAA. **(R 336.1213(1)(a))**

2. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this ROP. **(R 336.1213(1)(b))**

3. This ROP may be modified, revised, or revoked for cause. The filing of a request by the permittee for a permit modification, revision, or termination, or a notification of planned changes or anticipated noncompliance does not stay any ROP term or condition. This does not supersede or affect the ability of the permittee to make changes, at the permittee's own risk, pursuant to Rule 215 and Rule 216. **(R 336.1213(1)(c))**

4. The permittee shall allow the department, or an authorized representative of the department, upon presentation of credentials and other documents as may be required by law and upon stating the authority for and purpose of the investigation, to perform any of the following activities: **(R 336.1213(1)(d))**
   a. Enter, at reasonable times, a stationary source or other premises where emissions-related activity is conducted or where records must be kept under the conditions of the ROP.
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the ROP.
   c. Inspect, at reasonable times, any of the following:
      i. Any stationary source.
      ii. Any emission unit.
      iii. Any equipment, including monitoring and air pollution control equipment.
      iv. Any work practices or operations regulated or required under the ROP.
   d. As authorized by Section 5526 of Act 451, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the ROP or applicable requirements.

5. The permittee shall furnish to the department, within a reasonable time, any information the department may request, in writing, to determine whether cause exists for modifying, revising, or revoking the ROP or to determine compliance with this ROP. Upon request, the permittee shall also furnish to the department copies of any records that are required to be kept as a term or condition of this ROP. For information which is claimed by the permittee to be confidential, consistent with the requirements of the 1976 PA 442, MCL 40 CFR15.231 et seq., and known as the Freedom of Information Act, the person may also be required to furnish the records directly to the USEPA together with a claim of confidentiality. **(R 336.1213(1)(e))**

6. A challenge by any person, the Administrator of the USEPA, or the department to a particular condition or a part of this ROP shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this ROP. **(R 336.1213(1)(f))**

7. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Section 5522 of Act 451. **(R 336.1213(1)(g))**

8. This ROP does not convey any property rights or any exclusive privilege. **(R 336.1213(1)(h))**

## Equipment & Design

9. Any collected air contaminants shall be removed as necessary to maintain the equipment at the required operating efficiency. The collection and disposal of air contaminants shall be performed in a manner so as to minimize the introduction of contaminants to the outer air. Transport of collected air contaminants in Priority I and II areas requires the use of material handling methods specified in Rule 370(2).[2] **(R 336.1370)**

10. Any air cleaning device shall be installed, maintained, and operated in a satisfactory manner and in accordance with the Michigan Air Pollution Control rules and existing law. **(R 336.1910)**

## Emission Limits

11. Unless otherwise specified in this ROP, the permittee shall comply with Rule 301, which states, in part, "Except as provided in Subrules 2, 3, and 4 of this rule, a person shall not cause or permit to be discharged into the outer air from a process or process equipment a visible emission of a density greater than the most stringent of the following:"[2] **(R 336.1301(1))**
    a. A 6-minute average of 20% opacity, except for one 6-minute average per hour of not more than 27% opacity.
    b. A limit specified by an applicable federal new source performance standard.

    The grading of visible emissions shall be determined in accordance with Rule 303.

12. The permittee shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following:
    a. Injurious effects to human health or safety, animal life, plant life of significant economic value, or property.[1] **(R 336.1901(a))**
    b. Unreasonable interference with the comfortable enjoyment of life and property.[1] **(R 336.1901(b))**

## Testing/Sampling

13. The department may require the owner or operator of any source of an air contaminant to conduct acceptable performance tests, at the owner's or operator's expense, in accordance with Rule 1001 and Rule 1003, under any of the conditions listed in Rule 1001(1).[2] **(R 336.2001)**

14. Any required performance testing shall be conducted in accordance with Rule 1001(2), Rule 1001(3) and Rule 1003. **(R 336.2001(2), R 336.2001(3), R 336.2003(1))**

15. Any required test results shall be submitted to the Air Quality Division (AQD) in the format prescribed by the applicable reference test method within 60 days following the last date of the test. **(R 336.2001(5))**

## Monitoring/Recordkeeping

16. Records of any periodic emission or parametric monitoring required in this ROP shall include the following information specified in Rule 213(3)(b)(i), where appropriate. **(R 336.1213(3)(b))**
    a. The date, location, time, and method of sampling or measurements.
    b. The dates the analyses of the samples were performed.
    c. The company or entity that performed the analyses of the samples.
    d. The analytical techniques or methods used.
    e. The results of the analyses.
    f. The related process operating conditions or parameters that existed at the time of sampling or measurement.

17. All required monitoring data, support information and all reports, including reports of all instances of deviation from permit requirements, shall be kept and furnished to the department upon request for a period of not less than 5 years from the date of the monitoring sample, measurement, report or application. Support information includes all calibration and maintenance records and all original strip-chart recordings, or other original data records, for continuous monitoring instrumentation and copies of all reports required by the ROP. **(R 336.1213(1)(e), R 336.1213(3)(b)(ii))**

## Certification & Reporting

18. Except for the alternate certification schedule provided in Rule 213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this ROP shall contain an original certification by a Responsible Official which states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. **(R 336.1213(3)(c))**

19. A Responsible Official shall certify to the appropriate AQD District Office and to the USEPA that the stationary source is and has been in compliance with all terms and conditions contained in the ROP except for deviations that have been or are being reported to the appropriate AQD District Office pursuant to Rule 213(3)(c). This certification shall include all the information specified in Rule 213(4)(c)(i) through (v) and shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the certification are true, accurate, and complete. The USEPA address is: USEPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, Illinois 60604-3507. **(R 336.1213(4)(c))**

20. The certification of compliance shall be submitted annually for the term of this ROP as detailed in the special conditions, or more frequently if specified in an applicable requirement or in this ROP. **(R 336.1213(4)(c))**

21. The permittee shall promptly report any deviations from ROP requirements and certify the reports. The prompt reporting of deviations from ROP requirements is defined in Rule 213(3)(c)(ii) as follows, unless otherwise described in this ROP. **(R 336.1213(3)(c))**
    a. For deviations that exceed the emissions allowed under the ROP, prompt reporting means reporting consistent with the requirements of Rule 912 as detailed in Condition 25. All reports submitted pursuant to this paragraph shall be promptly certified as specified in Rule 213(3)(c)(iii).
    b. For deviations which exceed the emissions allowed under the ROP and which are not reported pursuant to Rule 912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe reasons for each deviation and the actions taken to minimize or correct each deviation.
    c. For deviations that do not exceed the emissions allowed under the ROP, prompt reporting means the reporting of all deviations in the semiannual reports required by Rule 213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

22. For reports required pursuant to Rule 213(3)(c)(ii), prompt certification of the reports is described in Rule 213(3)(c)(iii) as either of the following: **(R 336.1213(3)(c))**
    a. Submitting a certification by a Responsible Official with each report which states that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
    b. Submitting, within 30 days following the end of a calendar month during which one or more prompt reports of deviations from the emissions allowed under the ROP were submitted to the department pursuant to Rule 213(3)(c)(ii), a certification by a Responsible Official which states that; "based on information and belief formed after reasonable inquiry, the statements and information contained in each of the reports submitted during the previous month were true, accurate, and complete." The certification shall include a listing of the reports that are being certified. Any report submitted pursuant to Rule 213(3)(c)(ii) that will be certified on a monthly basis pursuant to this paragraph shall include a statement that certification of the report will be provided within 30 days following the end of the calendar month.

23. Semiannually for the term of the ROP as detailed in the special conditions, or more frequently if specified, the permittee shall submit certified reports of any required monitoring to the appropriate AQD District Office. All instances of deviations from ROP requirements during the reporting period shall be clearly identified in the reports. **(R 336.1213(3)(c)(i))**

24. On an annual basis, the permittee shall report the actual emissions, or the information necessary to determine the actual emissions, of each regulated air pollutant as defined in Rule 212(6) for each emission unit utilizing the emissions inventory forms provided by the department. **(R 336.1212(6))**

25. The permittee shall provide notice of an abnormal condition, start-up, shutdown, or malfunction that results in emissions of a hazardous or toxic air pollutant which continue for more than one hour in excess of any applicable standard or limitation, or emissions of any air contaminant continuing for more than two hours in excess of an applicable standard or limitation, as required in Rule 912, to the appropriate AQD District Office. The notice shall be provided not later than two business days after the start-up, shutdown, or discovery of the abnormal conditions or malfunction. Notice shall be by any reasonable means, including electronic, telephonic, or oral communication. Written reports, if required under Rule 912, must be submitted to the appropriate AQD District Supervisor within 10 days after the start-up or shutdown occurred, within 10 days after the abnormal conditions or malfunction has been corrected, or within 30 days of discovery of the abnormal conditions or malfunction, whichever is first. The written reports shall include all of the information required in Rule 912(5) and shall be certified by a Responsible Official in a manner consistent with the CAA.[2] **(R 336.1912)**

## Permit Shield

26. Compliance with the conditions of the ROP shall be considered compliance with any applicable requirements as of the date of ROP issuance if either of the following provisions is satisfied. **(R 336.1213(6)(a)(i), R 336.1213(6)(a)(ii))**
    a. The applicable requirements are included and are specifically identified in the ROP.
    b. The permit includes a determination or concise summary of the determination by the department that other specifically identified requirements are not applicable to the stationary source.

    Any requirements identified in Part E of this ROP have been identified as non-applicable to this ROP and are included in the permit shield.

27. Nothing in this ROP shall alter or affect any of the following:
    a. The provisions of Section 303 of the CAA, emergency orders, including the authority of the USEPA under Section 303 of the CAA. **(R 336.1213(6)(b)(i))**
    b. The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this ROP issuance. **(R 336.1213(6)(b)(ii))**
    c. The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. **(R 336.1213(6)(b)(iii))**

d. The ability of the USEPA to obtain information from a source pursuant to Section 114 of the CAA. **(R 336.1213(6)(b)(iv))**

28. The permit shield shall not apply to provisions incorporated into this ROP through procedures for any of the following:
    a. Operational flexibility changes made pursuant to Rule 215. **(R 336.1215(5))**
    b. Administrative Amendments made pursuant to Rule 216(1)(a)(i)-(iv). **(R 336.1216(1)(b)(iii))**
    c. Administrative Amendments made pursuant to Rule 216(1)(a)(v) until the amendment has been approved by the department. **(R 336.1216(1)(c)(iii))**
    d. Minor Permit Modifications made pursuant to Rule 216(2). **(R 336.1216(2)(f))**
    e. State-Only Modifications made pursuant to Rule 216(4) until the changes have been approved by the department. **(R 336.1216(4)(e))**

29. Expiration of this ROP results in the loss of the permit shield. If a timely and administratively complete application for renewal is submitted not more than 18 months, but not less than 6 months, before the expiration date of the ROP, but the department fails to take final action before the end of the ROP term, the existing ROP does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original ROP term until the department takes final action. **(R 336.1217(1)(c), R 336.1217(1)(a))**

## Revisions

30. For changes to any process or process equipment covered by this ROP that do not require a revision of the ROP pursuant to Rule 216, the permittee must comply with Rule 215. **(R 336.1215, R 336.1216)**

31. A change in ownership or operational control of a stationary source covered by this ROP shall be made pursuant to Rule 216(1). **(R 336.1219(2))**

32. For revisions to this ROP, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in Rule 216. **(R 336.1210(10))**

33. Pursuant to Rule 216(1)(b)(iii), Rule 216(2)(d) and Rule 216(4)(d), after a change has been made, and until the department takes final action, the permittee shall comply with both the applicable requirements governing the change and the ROP terms and conditions proposed in the application for the modification. During this time period, the permittee may choose to not comply with the existing ROP terms and conditions that the application seeks to change. However, if the permittee fails to comply with the ROP terms and conditions proposed in the application during this time period, the terms and conditions in the ROP are enforceable. **(R 336.1216(1)(c)(iii), R 336.1216(2)(d), R 336.1216(4)(d))**

## Reopenings

34. A ROP shall be reopened by the department prior to the expiration date and revised by the department under any of the following circumstances:
    a. If additional requirements become applicable to this stationary source with three or more years remaining in the term of the ROP, but not if the effective date of the new applicable requirement is later than the ROP expiration date. **(R 336.1217(2)(a)(i))**
    b. If additional requirements pursuant to Title IV of the CAA become applicable to this stationary source. **(R 336.1217(2)(a)(ii))**
    c. If the department determines that the ROP contains a material mistake, information required by any applicable requirement was omitted, or inaccurate statements were made in establishing emission limits or the terms or conditions of the ROP. **(R 336.1217(2)(a)(iii))**
    d. If the department determines that the ROP must be revised to ensure compliance with the applicable requirements. **(R 336.1217(2)(a)(iv))**

## Renewals

35. For renewal of this ROP, an administratively complete application shall be considered timely if it is received by the department not more than 18 months, but not less than 6 months, before the expiration date of the ROP. **(R 336.1210(9))**

## Stratospheric Ozone Protection

36. If the permittee is subject to Title 40 of the Code of Federal Regulations (CFR), Part 82 and services, maintains, or repairs appliances except for motor vehicle air conditioners (MVAC), or disposes of appliances containing refrigerant, including MVAC and small appliances, or if the permittee is a refrigerant reclaimer, appliance owner or a manufacturer of appliances or recycling and recovery equipment, the permittee shall comply with all applicable standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F.

37. If the permittee is subject to 40 CFR Part 82 and performs a service on motor (fleet) vehicles when this service involves refrigerant in the MVAC, the permittee is subject to all the applicable requirements as specified in 40 CFR Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners. The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed by the original equipment manufacturer. The term MVAC as used in Subpart B does not include the air-tight sealed refrigeration system used for refrigerated cargo or an air conditioning system on passenger buses using Hydrochlorofluorocarbon-22 refrigerant.

## Risk Management Plan

38. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the USEPA the required data related to the risk management plan for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 40 CFR 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under 40 CFR Part 68, do not limit in any way the general duty provisions under Section 112(r)(1).

39. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of 40 CFR Part 68, no later than the latest of the following dates as provided in 40 CFR 68.10(a):
    a. June 21, 1999,
    b. Three years after the date on which a regulated substance is first listed under 40 CFR 68.130, or
    c. The date on which a regulated substance is first present above a threshold quantity in a process.

40. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall submit any additional relevant information requested by any regulatory agency necessary to ensure compliance with the requirements of 40 CFR Part 68.

41. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall annually certify compliance with all applicable requirements of Section 112(r) as detailed in Rule 213(4)(c)). **(40 CFR Part 68)**

## Emission Trading

42. Emission averaging and emission reduction credit trading are allowed pursuant to any applicable interstate or regional emission trading program that has been approved by the Administrator of the USEPA as a part of Michigan's State Implementation Plan. Such activities must comply with Rule 215 and Rule 216. **(R 336.1213(12))**

**Permit to Install (PTI)**

43. The process or process equipment included in this permit shall not be reconstructed, relocated, or modified unless a PTI authorizing such action is issued by the department, except to the extent such action is exempt from the PTI requirements by any applicable rule.[2] **(R 336.1201(1))**

44. The department may, after notice and opportunity for a hearing, revoke PTI terms or conditions if evidence indicates the process or process equipment is not performing in accordance with the terms and conditions of the PTI or is violating the department's rules or the CAA.[2] **(R 336.1201(8), Section 5510 of Act 451)**

45. The terms and conditions of a PTI shall apply to any person or legal entity that now or hereafter owns or operates the process or process equipment at the location authorized by the PTI. If a new owner or operator submits a written request to the department pursuant to Rule 219 and the department approves the request, this PTI will be amended to reflect the change of ownership or operational control. The request must include all of the information required by Subrules (1)(a), (b) and (c) of Rule 219. The written request shall be sent to the appropriate AQD District Supervisor, EGLE.[2] **(R 336.1219)**

46. If the installation, reconstruction, relocation, or modification of the equipment for which PTI terms and conditions have been approved has not commenced within 18 months of the original PTI issuance date, or has been interrupted for 18 months, the applicable terms and conditions from that PTI, as incorporated into the ROP, shall become void unless otherwise authorized by the department. Furthermore, the person to whom that PTI was issued, or the designated authorized agent, shall notify the department via the Supervisor, Permit Section, EGLE, AQD, P. O. Box 30260, Lansing, Michigan 48909, if it is decided not to pursue the installation, reconstruction, relocation, or modification of the equipment allowed by the terms and conditions from that PTI.[2] **(R 336.1201(4))**

**Footnotes:**
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

# B. SOURCE-WIDE CONDITIONS

Part B outlines the Source-Wide Terms and Conditions that apply to this stationary source. The permittee is subject to these special conditions for the stationary source in addition to the general conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply to this source, NA (not applicable) has been used in the table. If there are no Source-Wide Conditions, this section will be left blank.

# SOURCE-WIDE CONDITIONS

## DESCRIPTION

The following conditions apply Source-Wide to all process equipment including equipment covered by other permits, grand-fathered equipment and exempt equipment.

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period/Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. CO | 225 tpy[a 2] | 12-month rolling time period as determined at the end of each calendar month | SOURCEWIDE | SC VI.1<br>SC VI.2 | **R 336.1205(1)(a) & (3)** |
| 2. $SO_2$ | 225 tpy [a 2] | 12-month rolling time period as determined at the end of each calendar month | SOURCEWIDE | SC VI.1<br>SC VI.2 | **R 336.1205(1)(a) & (3)** |

[a] The Source-Wide limits are based on a lower heating value (LHV) of 455 BTU per cubic foot.

## II. MATERIAL LIMIT(S)

**NA**

## III. PROCESS/OPERATIONAL RESTRICTION(S)

NA

## IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

## VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205, 40 CFR 52.21(c) & (d))**

2. The permittee shall keep in a satisfactory manner, monthly and 12-month rolling time period emission calculation records of CO and SO2 for all equipment Source-Wide. If stack test results for any emission unit exist, the permittee may use those stack test results to estimate pollutant emissions subject to the approval of the AQD. If stack test results do not exist for a specific pollutant, the permittee shall use the applicable emission factor listed in Appendix 7-2 to estimate the emissions. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1205(1)(a) & (3), 40 CFR 52.21(d))**

**See Appendix 7-2**

## VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

**See Appendix 8-2**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

1. Each Responsible Official shall certify annually the compliance status of the stationary source with all stationary Source-Wide conditions. This certification shall be included as part of the annual certification of compliance as required in the General Conditions in Part A and Rule 213(4)(c). **(R 336.1213(4)(c))**

**Footnotes:**
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

# C. EMISSION UNIT SPECIAL CONDITIONS

Part C outlines terms and conditions that are specific to individual emission units listed in the Emission Unit Summary Table. The permittee is subject to the special conditions for each emission unit in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no conditions specific to individual emission units, this section will be left blank.

## EMISSION UNIT SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Emission Unit ID | Emission Unit Description (Including Process Equipment & Control Device(s)) | Installation Date/ Modification Date | Flexible Group ID |
|---|---|---|---|
| EUENGINE1 | This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a CAT G3520C reciprocating internal combustion engine rated at 2,242 brake-horsepower (bhp) fueled with treated landfill/digester gas to produce electricity. | 07-01-2018 | FGRICEENG<br>FGRICEMACT |
| EUENGINE2 | This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a CAT G3516 reciprocating internal combustion engine rated at 1,148 bhp fueled with treated landfill/digester gas to produce electricity. | 07-01-2018 | FGRICEENG<br>FGRICEMACT |
| EUENGINE3 | This emission unit, and any replacement of this unit as applicable under R 336.1285(2)(a)(vi), is for a CAT G3520C reciprocating internal combustion engine rated at 2,242 brake-horsepower (bhp) fueled with treated landfill/digester gas to produce electricity. | November 1, 2020 | FGRICEENG<br>FGRICEMACT<br>FGRICENSPS |
| EUTREATMENTSYS | A treatment system that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. The treatment system removes particulate to at least the 10-micron level, compresses the landfill gas, and removes enough moisture to ensure good combustion of gas for subsequent use. | 07-01-2018 | FGTREATMENTSYS-OOO<br>FGTREATMENTSYS-AAAA |

# D. FLEXIBLE GROUP SPECIAL CONDITIONS

Part D outlines the terms and conditions that apply to more than one emission unit. The permittee is subject to the special conditions for each flexible group in addition to the General Conditions in Part A and any other terms and conditions contained in this ROP.

The permittee shall comply with all specific details in the special conditions and the underlying applicable requirements cited. If a specific condition type does not apply, NA (not applicable) has been used in the table. If there are no special conditions that apply to more than one emission unit, this section will be left blank.

## FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

| Flexible Group ID | Flexible Group Description | Associated Emission Unit IDs |
|---|---|---|
| FGRICEENG | Reciprocating internal combustion engines fueled with treated landfill gas and used to produce electricity. | EUENGINE1<br>EUENGINE2<br>EUENGINE3 |
| FGRICENSPS | Non-emergency engine(s) greater than 500 hp, fueled with landfill/digester gas. Engine(s) ordered after June 12, 2006 and manufactured on or after July 1, 2007. | EUENGINE3 |
| FGRICEMACT | New and reconstructed engines located at a major source of HAP emissions, greater than 500hp, non-emergency fueled with landfill gas. Commenced construction or reconstruction on or after December 19, 2002. | EUENGINE1<br>EUENGINE2<br>EUENGINE3 |
| FGTREATMENTSYS-OOO | A treatment system that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. This flexible group contains 40 CFR Part 62, Subpart OOO requirements. | EUTREATMENTSYS |
| FGTREATMENTSYS-AAAA | A treatment system used as a control system per 40 CFR 63.1959(b)(2)(iii)(C) that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. This flexible group contains 40 CFR Part 63, Subpart AAAA requirements. | EUTREATMENTSYS |

# FGRICEENG
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Reciprocating internal combustion engines fueled with treated landfill gas and used to produce electricity. This flexible group includes the emission units below and any subsequent replacements for those units as applicable under Rule 285(2)(a)(vi).

**Emission Units:** EUENGINE1, EUENGINE2, EUENGINE3

## POLLUTION CONTROL EQUIPMENT

Fuel treatment system and air-to-fuel ratio controller.

## I. EMISSION LIMITS

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NOx | 4.94 pph[2] (limit applies to each emission unit) | Hourly | EUENGINE1 EUENGINE3 | SC V.1 SCVI.5 | **R 336.1205(1)(a) & (3) 40 CFR 52.21 (c) and (d)** |
| 2. NOx | 5.1 pph[2] | Hourly | EUENGINE2 | SC V.1 SCVI.5 | **R 336.1205(1)(a) & (3), 40 CFR 52.21 (c) and (d)** |
| 3. CO | 16.3 pph[2] (limit applies to each emission unit) | Hourly | EUENGINE1, EUENGINE3 | SC V.1 SCVI.5 | **R 336.1205(1)(a) & (3) 40 CFR 52.21 (d)** |
| 4. CO | 7.9 pph[2] | Hourly | EUENGINE2 | SC V.1 SCVI.5 | **R 336.1205(1)(a) & (3) 40 CFR 52.21 (c) and (d)** |
| 5. $SO_2$ | 5.8 pph[2] (limit applies to each emission unit) | Hourly | EUENGINE1, EUENGINE3 | SC V.1 SCVI.5 | **R 336.1205(1)(a) & (3) 40 CFR 52.21 (c) and (d)** |
| 6. $SO_2$ | 3.3 pph[2] | Hourly | EUENGINE2 | SC V.1 SCVI.5 | **R 336.1205(1)(a) & (3) 40 CFR 52.21 (c) and (d)** |

| Pollutant | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 7. $SO_2$ | 65.2 tpy[2] (limit applies to the flexible group) | 12-month rolling time period as determined at the end of each calendar month | FGRICEENG | SC V.4<br>SC VI.3<br>SC VI.5 | **R 336.1205(3)** |
| 8. VOC* | 7.04 pph[2] | Hourly | EUENGINE3 | SC V.3<br>SC VI.5 | **R 336.1702(a)** |
| 8. Formaldehyde | 2.1 pph[1] (limit applies to each emission unit) | Hourly | EUENGINE1, EUENGINE3 | SC V.2<br>SC VI.5 | **R 336.1225(1)** |
| 9. Formaldehyde | 0.71 pph [1] | Hourly | EUENGINE2 | SC V.2<br>SC VI.5 | **R 336.1225(2)** |

*VOC limit includes formaldehyde.

## II. MATERIAL LIMITS

| Material | Limit | Time Period/ Operating Scenario | Equipment | Monitoring/ Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. Treated Landfill Gas | 783 million cubic feet per year* [2] | 12-month rolling time period as determined at the end of each calendar month | FGRICEENG | SC VI.2 | **R 336.1205(3)** |

*Based on a lower hearing value of 455 BTU/standard cubic feet.

## III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall only burn treated landfill gas in FGRICEENG.[2] **(R 336.1225, R 336.1331, R 336.1702)**

2. No later than 30 days after start-up of EUENGINE3, the permittee shall submit to the AQD District Supervisor, for review and approval, a malfunction abatement/preventative maintenance plan for FGRICEENG. After approval of the malfunction abatement/preventative maintenance plan by the AQD District Supervisor, the permittee shall not operate FGRICEENG unless the malfunction abatement/preventative maintenance plan, or an alternate plan approved by the AQD District Supervisor, is implemented and maintained. The plan shall incorporate procedures recommended by the equipment manufacturer as well as incorporating standard industry practices. At a minimum the plan shall include:

   a. Identification of the equipment and, if applicable, pollution control equipment, and the supervisory personnel responsible for overseeing the inspection, maintenance, and repair.

   b. Description of the items or conditions to be inspected and frequency of the inspections or repairs.

   c. Identification of the equipment and, if applicable, pollution control equipment, operating parameters that shall be monitored to detect a malfunction or failure, the normal operating range of these parameters and a description of the method of monitoring or surveillance procedures.

   d. Identification of the major replacement parts that shall be maintained in inventory for quick replacement.

e. A description of the corrective procedures or operational changes that shall be taken in the event of a malfunction or failure to achieve compliance with the applicable emission limits.

If the plan fails to address or inadequately addresses an event that meets the characteristics of a malfunction at the time the plan is initially developed, the owner or operator shall revise the plan within 45 days after such an event occurs and submit the revised plan for approval to the AQD District Supervisor. Should the AQD determine the malfunction abatement/preventative maintenance plan to be inadequate, the AQD District Supervisor may request modification of the plan to address those inadequacies.[2] **(R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

## IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate any engine in FGRICEENG unless the engines air/fuel ratio controller is installed, maintained and operated in a satisfactory manner.[2] **(R 336.1702(a), R 336.1910)**

2. The design capacity of EUENGINE1 and EUENGINE3 shall not exceed 2,242 bhp and EUENGINE2 shall not exceed 1,148 bhp, as specified by the equipment manufacturer.[2] **(R 336.1205(1)(a), R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

3. The permittee shall equip and maintain FGRICEENG with a device to continuously monitor and record the fuel usage.[2] **(R 336.1205, R 336.1225, R 336.1702)**

4. The permittee shall equip and maintain FGRICEENG with non-resettable hours meters to track the operating hours.[2] **(R 336.1205(1)(a))**

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Within 180 days after initial startup of each engine in FGRICEENG and within every 5 years from the date of completion of the most recent stack test, the permittee shall verify NOx, CO, and $SO_2$ emission rates from each engine in FGRICEENG, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in the table below:

| Pollutant | Test Method Reference |
|---|---|
| NOx | 40 CFR Part 60, Appendix A |
| CO | 40 CFR Part 60, Appendix A |
| $SO_2$ | 40 CFR Part 60, Appendix A |

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(R 336.1205, R 336.1225, R 336.2003, R 336.2004, 40 CFR 52.21(c) & (d))**

2. Within 180 days after initial startup of any engine and within every 5 years from the date of completion of the most recent stack test, thereafter, the permittee shall verify formaldehyde emission rates from each engine in FGRICEENG at maximum routine operating conditions, by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(R 336.1225, R 336.2001, R 336.2003, R 336.2004)**

3. Within 180 days after initial startup of EUENGINE3 and within every 5 years from the date of completion of the most recent stack test, the permittee shall verify total VOC emission rates from EUENGINE3 in FGRICEENG, by testing at owner's expense, in accordance with Department requirements. Testing shall be performed using an approved EPA Method listed in the table below:

| Pollutant | Test Method Reference |
|---|---|
| VOC | 40 CFR Part 60, Appendix A |

An alternate method, or a modification to the approved EPA Method, may be specified in an AQD approved Test Protocol. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing, including any modifications to the method in the test protocol that are proposed after initial submittal. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(R 336.1225, R 336.1702(a), R 336.2001, R 336.2003, R 336.2004)**

4. The permittee shall verify the hydrogen sulfide ($H_2S$) or total reduced sulfur (TRS) content of the landfill gas burned in FGRICEENG weekly by gas sampling (e.g. Draeger Tubes, Tedlar Sampling Bags, etc) and bi-annually by gas sampling using an EPA approved method and laboratory analysis, at the owner's expense, in accordance with Department requirements. If at any time, the $H_2S$ (TRS equivalent) concentration of the landfill gas sample exceeds 1000 ppmv, the permittee shall sample and record the $H_2S$ (TRS equivalent) concentration of the landfill gas daily and shall review all operating and maintenance activities for the landfill gas collection and treatment system along with keeping records of corrective actions taken. Once the $H_2S$ (TRS equivalent) concentration of the landfill gas determined from at least five (5) daily consecutive samples are maintained below 1000 ppmv, for one week after an exceedance, the permittee may resume weekly monitoring and recordkeeping. No less than 30 days prior to the initial test for each type of gas sampling, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to the first test for each type of gas sampling. Thereafter, the permittee shall submit a test plan upon the request of the AQD District Supervisor or if any changes are made to the approved testing protocol. The permittee shall keep all records on file at the facility and make them available to the Department upon request.[2] **(R 336.1205(3), R 336.1225, R 336.2001, R 336.2003, R 336.2004, 40 CFR 52.21 (c) & (d))**

## VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall complete all required calculations in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.[2] **(R 336.1205, R 336.1225, R 336.1702, 40 CFR 52.21(c) & (d))**

2. The permittee shall continuously monitor and record, in a satisfactory manner, the landfill gas usage for each engine in FGRICEENG and hours of operation for each engine in FGRICEENG.[2] **(R 336.1205, R 336.1225, R 336.1702)**

3. The permittee shall calculate and record the SO2 emission rates and mass emissions from each engine in FGRICEENG using the equation in Appendix 7-2 or other acceptable method, as determined by the AQD District Supervisor. The calculations shall utilize, at a minimum, weekly gas sampling data collected (SC V.1), the monthly gas usage, monthly hours of operation, and the ratio of total sulfur to sulfur as H2S from the most recent laboratory test. All records shall be kept on file at the facility and make them available to the Department upon request.[2] **(R 336.1205(3), 40 CFR 52.21(c) & (d))**

4. The permittee shall maintain the following record for each engine in FGRICEENG. The following information shall be recorded and kept on file at the facility:

   a. Engine manufacturer.

b. Date engine was manufactured.

c. Engine model number.

d. Engine horsepower.

e. Engine serial number.

f. Engine specification sheet.

g. Date of initial startup of the engine.

h. Date engine was removed from service at this stationary source.

All of the above information shall be stored in a format acceptable to the AQD District Supervisor.[2] **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702, R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

5 The permittee shall maintain records of all information necessary for all notifications and reports for each engine in FGRICEENG, as specified in these special conditions as well as that information necessary to demonstrate compliance with the emission limits of the permit. This information shall include, but shall not be limited to the following:

a. Compliance tests and any testing required under the special conditions of this permit.

b. Monitoring data for the hours of operation, volumetric flow rate and landfill gas usage.

c. Calculated amount of landfill gas combusted in each engine on a monthly and 12-month rolling basis.

d. Hours of operation on a monthly and 12-month rolling basis.

e. Monthly average BTU content of the landfill gas burned.

f. Manufacturer's data, specifications, and operating and maintenance procedures.

g. Maintenance activities conducted according to the PM/MAP.

h. All calculations necessary to show compliance with the limits contained in this permit.

All of the above information shall be stored in a format acceptable to the AQD District Supervisor.[2] **(R 336.1205, R 336.1225, R 336.1301, R 336.1331, R 336.1702(a), R 336.1910, R 336.1911, R 336.1912, 40 CFR 52.21(c) & (d))**

**See Appendix 7-2**

## VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit an initial notification as required by 40 CFR 60.7(a)(1) for each engine in FGRICEENG, if the New Source Performance Standards for Stationary Spark Ignition Internal Combustion Engines become applicable to any engine installed. The notification shall include the information below, as specified in 40 CFR 60.4245 (c)(1) through (5):

a. Name and address of the owner or operator.[2] **(40 CFR 60.4245(c)(1))**

b. The address of the affected source.[2] **(40 CFR 60.4245(c)(2))**

c. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement.[2] **(40 CFR 60.4245(c)(3))**

d. Emission control equipment.[2] **(40 CFR 60.4245(c)(4))**

e. Fuel used.[2] **(40 CFR 60.4245(c)(5))**

5. The permittee shall submit the initial notification to the AQD District Supervisor in an acceptable format within 30 days of commencing construction of any engine in FGRICEENG.[2] **(40 CFR Part 60, Subpart JJJJ)**

**See Appendix 8-2**

## VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

| Stack & Vent ID | Maximum Exhaust Diameter / Dimensions (inches) | Minimum Height Above Ground (feet) | Underlying Applicable Requirements |
|---|---|---|---|
| 1. SVENGINE1 | 18[2] | 46[2] | **R 336.1225 40 CFR 52.21 (c) & (d)** |
| 2. SVENGINE2 | 18[2] | 46[2] | **R 336.1225 40 CFR 52.21 (c) & (d)** |
| 3. SVENGINE3 | 18[2] | 46[2] | **R 336.1225 40 CFR 52.21 (c) & (d)** |

## IX. OTHER REQUIREMENTS

NA

**Footnotes:**
[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

# FGRICENSPS
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

Non-emergency engine(s) greater than or equal to 500 hp, fueled with landfill gas. Engine(s) ordered after June 12, 2006 and manufactured on or after July 1, 2007.

**Emission Unit:** EUENGINE3

## POLLUTION CONTROL EQUIPMENT

Fuel treatment system and air-to-fuel ratio controller.

## I. EMISSION LIMIT(S)

| Pollutant | Limit | Time Period / Operating Scenario | Equipment | Monitoring / Testing Method | Underlying Applicable Requirements |
|---|---|---|---|---|---|
| 1. NOx | 2.0 g/bhp-hr or 150 ppmvd at 15% $O_2$ [2] | Hourly | Each engine manufactured after 7/01/2010 | SC V.1 SC VI.1 | **40 CFR 60.4233(e) and Table 1** |
| 2. CO | 5.0 g/bhp-hr or 610 ppmvd at 15% $O_2$ [2] | Hourly | Each engine manufactured after 7/01/2010 | SC V.1 SC VI.1 | **40 CFR 60.4233(e) and Table 1** |
| 3. VOC | 1.0 g/bhp-hr* or 80 ppmvd at 15% $O_2$* [2] | Hourly | Each engine manufactured after 7/01/2010 | SC V.1 SC VI.1 | **40 CFR 60.4233(e) and Table 1** |

*As stated in 40 CFR 60.4241(h) and Table 1 of Subpart JJJJ: For purposes of this subpart, when calculating emissions of volatile organic compounds, emissions of formaldehyde should not be included.

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate and maintain each engine in FGRICENSPS such that it meets the emission limits established, over the entire life of the engine.[2] **(40 CFR 60.4234, 40 CFR 60.4243(b))**

2. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan for each engine in FGRICENSPS and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions.[2] **(40 CFR 60.4243(b))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee shall equip and maintain FGRICENSPS with non-resettable hours meters to track the operating hours.[2] **(40 CFR 60.4243)**

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Except as provided in 40 CFR 60.4243(b), the permittee shall conduct an initial performance test for each engine in FGRICENSPS within one year after startup of the engine and every 8760 hours of operation (as determined through the use of a non-resettable hour meter) or three years, whichever occurs first, to demonstrate compliance with the emission limits in 40 CFR 60.4233(e), unless the engine(s) have been certified by the manufacturer in accordance with 40 CFR Part 60, Subpart JJJJ and the permittee maintains the engine as required by 40 CFR 60.4243(a)(1). If a performance test is required, the performance tests shall be conducted according to 40 CFR 60.4244. No less than 30 days prior to any testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.[2] **(40 CFR 60.8, 40 CFR 60.4243, 40 CFR 60.4244, 40 CFR 60.4245, 40 CFR Part 60, Subpart JJJJ)**

## VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. If the permittee purchased a non-certified engine or a certified engine operating in a non-certified manner, the permittee shall keep a maintenance plan and records of conducted maintenance for each engine in FGRICENSPS and shall, to the extent practicable, maintain and operate each engine in a manner consistent with good air pollution control practice for minimizing emissions.[2] **(40 CFR 60.4243(b))**

## VII. REPORTING

1. The permittee shall submit an initial notification as required by 40 CFR 60.7(a)(1) for each engine in FGRICENSPS if the engine(s) installed is/are not certified by an engine manufacturer to meet the emission standards in 40 CFR 60.4231. The notification shall include the information below, as specified in 40 CFR 60.4245 (c)(1) through (5):
   a. Name and address of the owner or operator. **(40 CFR 60.4245(c)(1))**
   b. The address of the affected source. **(40 CFR 60.4245(c)(2))**
   c. Engine information including make, model, engine family, serial number, model year, maximum engine power, and engine displacement. **(40 CFR 60.4245(c)(3))**
   d. Emission control equipment. **(40 CFR 60.4245(c)(4))**
   e. Fuel used. **(40 CFR 60.4245(c)(5))**

   The permittee shall submit the initial notification to the AQD District Supervisor in an acceptable format within 30 days of commencing construction of any engine in FGRICENSPS.[2] **(40 CFR Part 60, Subpart JJJJ)**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

1. The permittee shall comply with all applicable provisions of the New Source Performance Standards, as specified in 40 CFR Part 60, Subpart A and Subpart JJJJ, as they apply to each engine in FGRICENSPS.[2] **(40 CFR Part 60, Subparts A and JJJJ)**

**Footnotes:**

[1]This condition is state only enforceable and was established pursuant to Rule 201(1)(b).

[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

# FGRICEMACT
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

New and reconstructed non-emergency engines greater than 500 hp fueled with landfill/digester gas, located at a major source of HAPs. Construction or reconstruction commenced on or after December 19, 2002.

**Emission Units:** EUENGINE1, EUENGINE2, EUENGINE3

## POLLUTION CONTROL EQUIPMENT

Fuel treatment system and air-to-fuel ratio controller.

## I. EMISSION LIMITS

NA

## II. MATERIAL LIMITS

NA

## III. PROCESS/OPERATIONAL RESTRICTIONS

1. Each engine in FGRICEMACT shall operate in a manner which reasonably minimizes HAP emissions.[2] **(40 CFR 63.6625(c))**

2. Each engine in FGRICEMACT shall operate in a manner which minimizes time spent at idle during startup and minimizes the startup time to a period needed for appropriate and safe loading of each engine, not to exceed 30 minutes.[2] **(40 CFR 63.6625(h))**

## IV. DESIGN/EQUIPMENT PARAMETERS

1. The engines in FGRICEMACT shall equip and maintain separate fuel meters to monitor and record the daily fuel usage and volumetric flow rate of each fuel used.[2] **(40 CFR 63.6625(c))**

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

## VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii), 40 CFR 63.6660)**

1. The engines in FGRICEMACT, which fire landfill gas or digester gas equivalent to 10% or more of the gross heat input on an annual basis, must monitor and record the daily fuel usage with separate fuel meters to measure the volumetric flow rate of each fuel.[2] **(40 CFR 63.6625(c))**

## VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee shall submit an annual report in accordance with Table 7 of 40 CFR Part 63, Subpart ZZZZ to the appropriate AQD District Office by March 15 for reporting period January 1 to December 31.[2] **(R 336.1213(3), 40 CFR 63.6650(g), 40 CFR 63.6650(b)(5))**

   The following information shall be included in this annual report:

   a. The fuel flow rate and the heating values that were used in the permittee's calculations. Also, the permittee must demonstrate that the percentage of heat input provided by landfill gas or digester gas is equivalent to 10% or more of the total fuel consumption on an annual basis. [2] **(40 CFR 63.6650(g)(1))**

   b. The operating limits provided in the permittee's federally enforceable permit, and any deviations from these limits. [2] **(40 CFR 63.6650(g)(2))**

   c. Any problems or errors suspected from the fuel flow rate meters. [2] **(40 CFR 63.6650(g)(3))**

**See Appendix 8-2**

## VIII. STACK/VENT RESTRICTIONS

NA

## IX. OTHER REQUIREMENTS

1. The permittee shall comply with the provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart ZZZZ, as they apply to each engine in FGRICEMACT.[2] **(40 CFR Part 63, Subparts A and ZZZZ)**

**Footnotes:**
[1] This condition is state only enforceable and was established pursuant to Rule 201(1)(b).
[2] This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

# FGTREATMENTSYS-OOO
# FLEXIBLE GROUPCONDITIONS

## DESCRIPTION

A treatment system used as a control system per 40 CFR 62.16714(c)(3) that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. This flexible group contains 40 CFR Part 62, Subpart OOO requirements.

**Emission Unit:** EUTREATMENTSYS

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system must comply with 40 CFR 62.16714(c)(1) or (2). **(40 CFR 62.16714(c)(3) and (4))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

## V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

## VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. Each permittee that chooses to comply with the provisions in 40 CFR 63.1958, 40 CFR 63.1960, and 40 CFR 63.1961, as allowed in 40 CFR 62.16716, 40 CFR 62.16720, and 40 CFR 62.16722, must keep records of the date upon which the permittee started complying with the provisions in 40 CFR 63.1958, 40 CFR 63.1960, and 40 CFR 63.1961 and must keep records according to 40 CFR 63.1983(e)(1) through (5). **(40 CFR 62.16726(e))**

## VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. If complying with the operational provisions of 40 CFR 63.1958, 40 CFR 63.1960, and 40 CFR 63.1961, as allowed in 40 CFR 62.16716, 40 CFR 62.16720, and 40 CFR 62.16722, the permittee must follow the semi-annual reporting requirements in 40 CFR 63.1981(h) in lieu of 40 CFR 62.16724(h). **(40 CFR 62.16724(h))**

5. The permittee must submit reports electronically according to the following:

   a. Within 60 days after the date of completing each performance test (as defined in 40 CFR 60.8), the permittee must submit the results of each performance test. For data collected using test methods supported by the USEPA's Electronic Reporting Tool (ERT) as listed on the USEPA's ERT website (https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert), submit the results of the performance test to the USEPA via the Compliance and Emissions Data Reporting Interface (CEDRI). The CEDRI can be accessed through the USEPA's CDX (https://cdx.epa.gov/). Performance test data must be submitted in a file format generated through the use of the USEPA's ERT or an alternative file format consistent with the extensible markup language (XML) schema listed on the EPA's ERT website, once the XML schema is available. **(40 CFR 62.16724(j)(1)(i))**

   b. For data collected using test methods that are not supported by the USEPA's ERT as listed on the USEPA's ERT website at the time of the test, submit the results of the performance test to the USEPA at the appropriate address listed in 40 CFR 60.4. **(40 CFR 62.16724(j)(1)(ii))**

   c. Each permittee must submit reports to the USEPA via CEDRI (CEDRI can be accessed through the USEPA's CDX). The permittee must use the appropriate electronic report in CEDRI for this subpart or an alternate electronic file format consistent with the XML schema listed on the CEDRI website (https://www.epa.gov/chief). If the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the permittee must submit the report to the USEPA at the appropriate address listed in 40 CFR 60.4. Once the form has been available in CEDRI for 90 calendar days, the permittee must begin submitting all subsequent reports via CEDRI. The reports must be submitted by the deadlines specified in this subpart, regardless of the method in which the reports are submitted. **(40 CFR 62.16724(j)(2))**

6. The permittee shall submit any performance test reports and all other reports required by 40 CFR Part 62, Subpart OOO to the appropriate AQD District Office, in a format approved by the AQD District Supervisor. **(R 336.1213(3)(c), R 336.2001(5))**

**See Appendix 8-2**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

1. The permittee must comply with all applicable provisions of the Federal Plan Requirements for Municipal Solid Waste Landfills That Commenced Construction On or Before July 17, 2014 and Have Not Been Modified or Reconstructed Since July 17, 2014 as specified in 40 CFR Part 62, Subpart OOO. Each permittee must comply with the provisions for the operational standards in 40 CFR 63.1958 (as well as the provisions in 40 CFR 63.1960 and 40 CFR 63.1961), for an MSW landfill with a gas collection and control system used to comply with the provisions of 40 CFR 62.16714(b) and (c). Once the permittee begins to comply with the provisions of 40 CFR 63.1958, 40 CFR 63.1960 and 40 CFR 63.1961, the permittee must continue to operate the collection and control device according to those provisions and cannot return to the provisions of 40 CFR 62.16716, 40 CFR 62.16720 and 40 CFR 62.16722. **(40 CFR 62.16716, 40 CFR 62.16720, 40 CFR 62.16722, 40 CFR Part 62, Subpart OOO)**

**Footnotes:**
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

# FGTREATMENTSYS-AAAA
# FLEXIBLE GROUP CONDITIONS

## DESCRIPTION

A treatment system used as a control system per 40 CFR 63.1959(b)(2)(iii)(C) that filters, de-waters, and compresses landfill gas for subsequent sale or beneficial use. This flexible group contains 40 CFR Part 63, Subpart AAAA requirements.

**Emission Unit:** EUTREATMENTSYS

## POLLUTION CONTROL EQUIPMENT

NA

## I. EMISSION LIMIT(S)

NA

## II. MATERIAL LIMIT(S)

NA

## III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee must operate the treatment system at all times when the collected gas is routed to the treatment system. **(40 CFR 63.1958(f))**

2. The permittee must operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system must comply with 40 CFR 63.1959(b)(2)(iii)(A) or (B). **(40 CFR 63.1959(b)(2)(iii)(C) and (D))**

3. The permittee must develop a site-specific treatment system monitoring plan as required in 40 CFR 63.1983(b)(5)(ii). The plan must at a minimum contain the following: **(40 CFR 63.1961(g))**

   a. Monitoring of filtration, de-watering, and compression parameters that ensure the treatment system is operating properly for each intended end use of the treated landfill gas. **(40 CFR 63.1983(b)(5)(ii)(A))**

   b. Monitoring methods, frequencies, and operating ranges for each monitored operating parameter based on manufacturer's recommendations or engineering analysis for each intended end use of the treated landfill gas. **(40 CFR 63.1983(b)(5)(ii)(B))**

   c. Documentation of the monitoring methods and ranges, along with justification for their use. **(40 CFR 63.1983(b)(5)(ii)(C))**

   d. List of responsible staff (by job title) for data collection. **(40 CFR 63.1983(b)(5)(ii)(D))**

   e. Processes and methods used to collect the necessary data. **(40 CFR 63.1983(b)(5)(ii)(E))**

   f. Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all continuous monitoring systems (CMS). **(40 CFR 63.1983(b)(5)(ii)(F))**

4. The monitoring requirements apply at all times the treatment system is operating except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities. The permittee must complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable. **(40 CFR 63.1961(h))**

## IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The permittee must install and properly operate a treatment system in accordance with 40 CFR 63.1981(d)(2). **(40 CFR 63.1961(d))**

2. The permittee must install, calibrate, and maintain a gas flow rate measuring device that records the flow to the treatment system at least every 15 minutes; and secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. **(40 CFR 63.1961(g))**

## V. TESTING/SAMPLING

Records must be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

NA

## VI. MONITORING/RECORDKEEPING

Records must be maintained on file for a period of five years. **(R 336.1213(3)(b)(ii))**

1. The permittee must keep monthly records of all treatment system operating parameters specified to be monitored according to 40 CFR 63.1961. The records must include:

   a. Continuous records of the indication of flow and gas flow rate to the treatment system. **(40 CFR 63.1983(c)(2))**

   b. The indication of bypass flow or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines. **(40 CFR 63.1983(c)(2))**

   c. Maintenance and repair of the monitoring system. **(40 CFR 63.1961(h))**

## VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(R 336.1213(3)(c)(i))**

3. Annual certification of compliance pursuant to General Conditions 19 and 20 of Part A. The report shall be postmarked or received by the appropriate AQD District Office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

4. The permittee must submit to the appropriate AQD District Office semiannual reports for the landfill gas treatment system. The reports must be received by the appropriate AQD District Office by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. The reports must include the following:

   a. The number of times the parameters for the treatment system under 40 CFR 63.1961(g) were exceeded. **(40 CFR 63.1981(h)(1)(iii)**

   b. Description and duration of all periods when the gas stream is diverted from the treatment system through a bypass line or the indication of bypass flow. **(40 CFR 63.1981(h)(2))**

c. Description and duration of all periods when the treatment system was not operating and length of time the treatment system was not operating. **(40 CFR 63.1981(h)(3))**

5. The permittee must submit reports electronically according to the following:

   a. Within 60 days after the date of completing each performance test required, submit the results of the performance test with data collected using test methods supported by the USEPA's Electronic Reporting Tool (ERT) as listed on the USEPA's ERT website (https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert). Submit the results of the performance test to the USEPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the USEPA's CDX (https://cdx.epa.gov/). The data must be submitted in a file format generated through the use of the USEPA's ERT. Alternatively, submit an electronic file consistent with the extensible markup language (XML) schema listed on the USEPA's ERT website. **(40 CFR 63.1981(l)(1)(i)**

   b. For data collected using test methods that are not supported by the USEPA's ERT as listed on the USEPA's ERT website, the results of the performance test must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the USEPA's ERT website. Submit the ERT generated package or alternative file to the USEPA via CEDRI. **(40 CFR 63.1981(l)(1)(ii)**

   c. Each permittee must submit reports to the USEPA via CEDRI. CEDRI can be accessed through the USEPA's CDX. The permittee must use the appropriate electronic report in CEDRI for this subpart or an alternate electronic file format consistent with the XML schema listed on the CEDRI website (https://www.epa.gov/chief). Once the spreadsheet template upload/forms for the reports have been available in CEDRI for 90 days, the permittee must begin submitting all subsequent reports via CEDRI. The reports must be submitted by the deadlines specified in this subpart, regardless of the method in which the reports are submitted. The semiannual reports should be electronically reported as a spreadsheet template upload/form to CEDRI. If the reporting forms specific to this subpart are not available in CEDRI at the time that the reports are due, the permittee must submit the reports to the USEPA at the appropriate address listed in 40 CFR 63.13. **(40 CFR 63.1981(l)(2))**

6. The permittee shall submit any performance test reports and all other reports required by 40 CFR Part 63, Subpart AAAA to the appropriate AQD District Office, in a format approved by the AQD District Supervisor. **(R 336.1213(3)(c), R 336.2001(5))**

**See Appendix 8-2**

## VIII. STACK/VENT RESTRICTION(S)

NA

## IX. OTHER REQUIREMENT(S)

1. The permittee must comply with all applicable provisions of the National Emissions Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills as specified in 40 CFR Part 63, Subparts A and AAAA. **(40 CFR Part 63, Subparts A and AAAA)**

**Footnotes:**
[1]This condition is state-only enforceable and was established pursuant to Rule 201(1)(b).
[2]This condition is federally enforceable and was established pursuant to Rule 201(1)(a).

# E. NON-APPLICABLE REQUIREMENTS

At the time of the ROP issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

# APPENDICES

## Appendix 1-2. Acronyms and Abbreviations

| Common Acronyms | | Pollutant / Measurement Abbreviations | |
|---|---|---|---|
| AQD | Air Quality Division | acfm | Actual cubic feet per minute |
| BACT | Best Available Control Technology | BTU | British Thermal Unit |
| CAA | Clean Air Act | °C | Degrees Celsius |
| CAM | Compliance Assurance Monitoring | CO | Carbon Monoxide |
| CEM | Continuous Emission Monitoring | $CO_2e$ | Carbon Dioxide Equivalent |
| CEMS | Continuous Emission Monitoring System | dscf | Dry standard cubic foot |
| CFR | Code of Federal Regulations | dscm | Dry standard cubic meter |
| COM | Continuous Opacity Monitoring | °F | Degrees Fahrenheit |
| Department/ department | Michigan Department of Environment, Great Lakes, and Energy | gr | Grains |
| | | HAP | Hazardous Air Pollutant |
| EGLE | Michigan Department of Environment, Great Lakes, and Energy | Hg | Mercury |
| | | hr | Hour |
| EU | Emission Unit | HP | Horsepower |
| FG | Flexible Group | $H_2S$ | Hydrogen Sulfide |
| GACS | Gallons of Applied Coating Solids | kW | Kilowatt |
| GC | General Condition | lb | Pound |
| GHGs | Greenhouse Gases | m | Meter |
| HVLP | High Volume Low Pressure* | mg | Milligram |
| ID | Identification | mm | Millimeter |
| IRSL | Initial Risk Screening Level | MM | Million |
| ITSL | Initial Threshold Screening Level | MW | Megawatts |
| LAER | Lowest Achievable Emission Rate | NMOC | Non-methane Organic Compounds |
| MACT | Maximum Achievable Control Technology | $NO_x$ | Oxides of Nitrogen |
| MAERS | Michigan Air Emissions Reporting System | ng | Nanogram |
| MAP | Malfunction Abatement Plan | PM | Particulate Matter |
| MSDS | Material Safety Data Sheet | PM10 | Particulate Matter equal to or less than 10 microns in diameter |
| NA | Not Applicable | | |
| NAAQS | National Ambient Air Quality Standards | PM2.5 | Particulate Matter equal to or less than 2.5 microns in diameter |
| NESHAP | National Emission Standard for Hazardous Air Pollutants | pph | Pounds per hour |
| | | ppm | Parts per million |
| NSPS | New Source Performance Standards | ppmv | Parts per million by volume |
| NSR | New Source Review | ppmw | Parts per million by weight |
| PS | Performance Specification | % | Percent |
| PSD | Prevention of Significant Deterioration | psia | Pounds per square inch absolute |
| PTE | Permanent Total Enclosure | psig | Pounds per square inch gauge |
| PTI | Permit to Install | scf | Standard cubic feet |
| RACT | Reasonable Available Control Technology | sec | Seconds |
| ROP | Renewable Operating Permit | $SO_2$ | Sulfur Dioxide |
| SC | Special Condition | TAC | Toxic Air Contaminant |
| SCR | Selective Catalytic Reduction | Temp | Temperature |
| SNCR | Selective Non-Catalytic Reduction | THC | Total Hydrocarbons |
| SRN | State Registration Number | tpy | Tons per year |
| TEQ | Toxicity Equivalence Quotient | µg | Microgram |
| USEPA/EPA | United States Environmental Protection Agency | µm | Micrometer or Micron |
| | | VOC | Volatile Organic Compounds |
| VE | Visible Emissions | yr | Year |

*For HVLP applicators, the pressure measured at the gun air cap shall not exceed 10 psig.

## Appendix 2-2. Schedule of Compliance

The permittee certified in the ROP application that this stationary source is in compliance with all applicable requirements and the permittee shall continue to comply with all terms and conditions of this ROP. A Schedule of Compliance is not required. **(R 336.1213(4)(a), R 336.1119(a)(ii))**

## Appendix 3-2. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

## Appendix 4-2. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

## Appendix 5-2. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, this appendix is not applicable.

## Appendix 6-2. Permits to Install

The following table lists any PTIs issued or ROP revision applications received since the effective date of the previously issued ROP No. MI-ROP-N2804-2014. Those ROP revision applications that are being issued concurrently with this ROP renewal are identified by an asterisk (*). Those revision applications not listed with an asterisk were processed prior to this renewal.

Source-Wide PTI No MI-PTI-N2804-2014 is being reissued as Source-Wide PTI No. MI-PTI-N2804-2020a.

| Permit to Install Number | ROP Revision Application Number | Description of Equipment or Change | Corresponding Emission Unit(s) or Flexible Group(s) |
|---|---|---|---|
| 45-17 | NA | Incorporate PTI No. 45-17. PTI No. 45-17 is for the installation of a landfill gas to electricity generation facility | FGRICEENG<br>FGRICEMACT |
| 45-17A | NA | PTI No. 45-17A is for an increase in SO2 emissions from the landfill gas burning engines. | FGRICEENG |
| 45-17B | NA | PTI No. 45-17B is for the installation of a third landfill gas burning engine. | EUENGINE3 |

## Appendix 7-2. Emission Calculations

The permittee shall demonstrate compliance with the emission limits in this permit by vendor data, stack testing, and/or gas testing.

Vendor Data or Stack Testing:
The permittee shall use emission factors from vendor data or from source specific testing (if stack test data is available, use most recent stack test data), as available for each emission unit included Source-Wide. The permittee shall use emission factors contained in the most recent AP-42 (Compilation of Air Pollutant Emission Factors) or the most recent FIRE (Factor Information Retrieval) database if vendor or stack testing data is not available. If emission factors from other sources are used, the permittee shall obtain the approval of the AQD District Supervisor before using the emission factors to calculate emissions. The permittee shall document the source of each emission factor used in the calculations.

Calculation for CO Emissions:
The following calculation for a CO emission factor in lb/MMcf of Landfill Gas shall utilize the lb/MMBTU emission factor multiplied by the monthly average BTU content of landfill gas. The lb CO/MMcf of Landfill Gas shall be multiplied by the amount of landfill gas used to get monthly and 12-month rolling mass emissions.

$$CO\ Emission\ Factor\ \left(\frac{lb\ CO}{MMcf\ LFG}\right) = \frac{(lb\ CO)}{MMBTU} \times \frac{BTU}{scf}$$

Emission Factors from Vendor Data:
RICE 3516 = 0.87 lb/MMBTU
RICE 3520 = 1.32 lb/MMBTU
Open Flare = 0.37 lb/MMBTU

Calculation for Monthly $SO_2$ Emissions:
The following calculation for $SO_2$ emissions shall utilize the monthly average of the weekly (or daily, if required) $H_2S$ concentration measurements from test data collected, the monthly gas usage, monthly hours of operation, and the ratio of total sulfur to sulfur as $H_2S$ from the most recent laboratory test. The lbs $SO_2$/MMcf of Landfill Gas shall be multiplied by the amount of landfill gas used to get monthly and 12-month rolling mass emissions.

$$SO_2\ Emission\ Factor\ \left(\frac{lbs\ SO_2}{MMcf\ LFG}\right) = \frac{\frac{(\boldsymbol{X}\ scf\ H_2S)}{MMcf\ LFG} \times \frac{1\ scf\ SO_2}{scf\ H_2S} \times \frac{64.06\ lb\ SO_2}{mol}}{\frac{385\ cf}{mol}}$$

Where X = ppm sulfur content, as $H_2S$

## Appendix 8-2. Reporting

### A. Annual, Semiannual, and Deviation Certification Reporting

The permittee shall use the EGLE, AQD, Report Certification form (EQP 5736) and EGLE, AQD, Deviation Report form (EQP 5737) for the annual, semiannual and deviation certification reporting referenced in the Reporting Section of the Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Alternative formats must meet the provisions of Rule 213(4)(c) and Rule 213(3)(c)(i), respectively, and be approved by the AQD District Supervisor.

### B. Other Reporting

Specific reporting requirement formats and procedures are detailed in Part A or the appropriate Source-Wide, Emission Unit and/or Flexible Group Special Conditions. Therefore, Part B of this appendix is not applicable.