

Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

March 15, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Scott Salisbury
Trail Ridge Energy, L.L.C.
29261 Wall Street
Wixom, Michigan 48393

Re: DEP File No. 0310358-004-AC (PSD-FL-374)

Trail Ridge Energy – Installation of six (6) reciprocating internal combustion engines

Dear Mr. Salisbury:

The Department has received the application on February 24, 2006, to allow Trail Ridge Energy to construct and operate an electric generation facility at the Trail Ridge Landfill Facility in Duval County. Based on our initial review of the proposed project, we have determined that additional information is needed in order to continue processing this application package. Please submit the information requested below to the Department's Bureau of Air Regulation:

1. Please indicate if a comparative emissions study for products of combustion has been done between flare emissions and emissions from internal combustion engines. If such a study was done, please provide the results to the Department.
2. Appendix H-1, Table H-3 of the application calculates fuel weight percent sulfur content. The CO₂ concentration is indicated as 52 percent by volume, whereas Table 1 of the main application shows expected CO₂ gas composition to be less than 40 percent by volume. Additionally, the LFG molecular weight does not match up between the calculated value (30.9 g/mol) and the one used in determining the LFG sulfur content (28 g/mol). Please explain the discrepancy.
3. Appendix H-2, Table H-5 of the application shows a sample calculation for 1,1,1 trichloroethane (TCE) emissions in footnote A. Please explain the reasons for using 0.1 ft³ TCE/MMcf LFG in the calculations. The same factor was used in Tables H-6 and H-7.
4. The application in Section 5.2 states that the Trail Ridge Energy is part of the Trail Ridge Landfill Stationary Source and its approved Air Construction Permit is to be incorporated into the landfill Title V Operating Permit. By doing so, Trail Ridge Landfill will be responsible for the compliance of all the permit conditions in the Air Construction Permit. Please provide a letter signed from the Responsible Official of the Trail Ridge Landfill facility agreeing to comply with all the requirements and being responsible for any violations of the Air Construction Permit.
5. Please explain how the facility will show compliance if the HCl emissions from the proposed engine operations are restricted to less than 10 TPY. Is the facility in agreement to limit the hours of operation of the engines to comply with the 10 TPY restrictions?

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6. The application indicates that CAT G3520C gas IC engines have been installed and are operating at Bio Energy Texas. The maximum allowable PM₁₀ emissions that is permitted for this facility is 0.148 g/bhp-hr. Please explain the reasons for requesting 0.24 g/bhp-hr for this project when the same IC engines will be utilized at Trail Ridge Energy.
7. Please indicate if the IC engines will operate continuously or whether the engines will frequently start and stop. When the engines do operate, will it be operating at base load or at less than base load? What affect will operating at less than base load have on emissions?

Modeling information under Appendix I of the application has not been submitted. The Department will have additional 30 days after receiving the modeling information to send any further comments based on the modeling review. Any additional comments from EPA and the U.S. Fish and Wildlife Service will be forwarded to you after we receive them.

The Department will resume processing this application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. A new certification statement by the authorized representative or responsible official must accompany any material changes to the application. Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days.

We will be happy to meet and discuss the details with you and your staff. If you have any questions, I can be contacted at 850/921-9528. You may discuss the modeling requirements with Mr. Cleve Holladay at 850/921-8689.

Sincerely,



Syed Arif, P.E.
Bureau of Air Regulation

/sa

cc: Chris Kirts, DEP-NED
Richard Robinson, ERM/AQB
Jeff Pope, P.E., Clayton Group Services, Inc.
Gregg Worley, EPA Region 4
John Bunyak, NPS

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Mr. Scott Salisbury
Trail Ridge Energy, L.L.C.
29261 Wall Street
Wixom, Michigan 48393

2. Article Number

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29261 Wall Street
Wixom, Michigan 48393

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Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

March 8, 2006

Mr. Gregg M. Worley, Chief
Air Permits Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-8960

RE: Trail Ridge Energy, L.L.C.
Trail Ridge Landfill
0310358-004-AC, PSD-FL-374

Dear Mr. Worley:

Enclosed for your review and comment is a PSD application submitted by Trail Ridge Energy, L.L.C., for a new landfill gas fueled internal combustion engine electricity generation facility at the Trail Ridge Landfill in Baldwin, Duval County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Syed Arif, Review Engineer, at 850/921-9528.

Sincerely,

for Jeffrey F. Koerner, P.E., Administrator
North Permitting Section


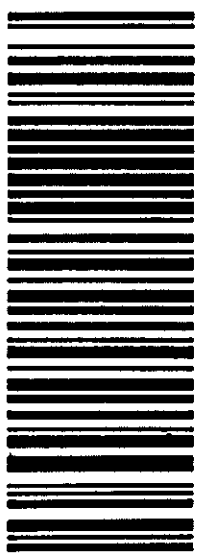
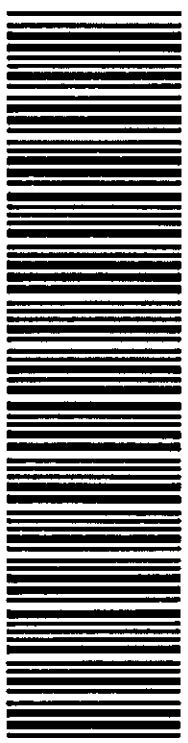
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Enclosure

cc: S. Arif

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To: U.S. EPA Region 4 Mr. Gregg M. Worley 61 Forsyth Street Air Permits Section Atlanta, GA 30303 UNITED STATES		POSTCODE: 30303 Tel: 404-562-9141	
Description: PSD-FL-374 application		Weight: 5 lbs for 1 pcs Date: 2006-03-08	
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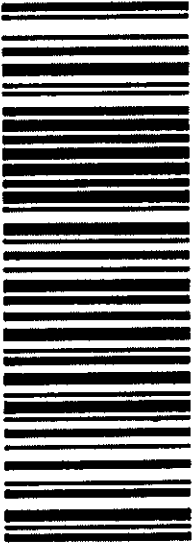
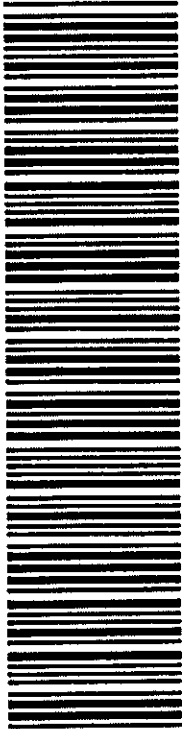
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 Phone#: 303-966-2818

Sent By: P. Adams
 Phone#: 850-921-9505

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 Description: PSD-FL-374 application

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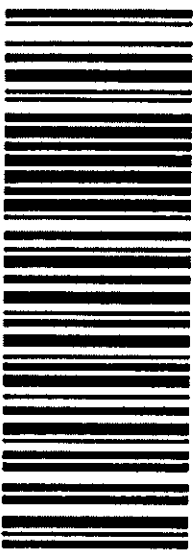
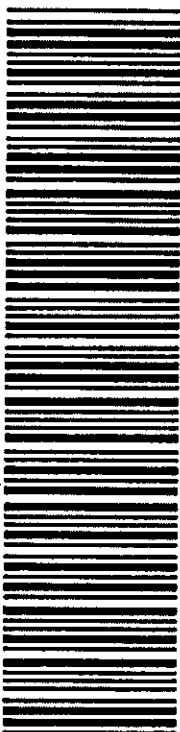
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 Air Section, Suite 200B
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 UNITED STATES
 Attention To: Mr. Chris Kirts
 Phone#: 904-807-3235
 Sent By: P. Adams
 Phone#: 850-921-9505

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Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

March 8, 2006

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division
P. O. Box 25287
Denver, Colorado 80225

RE: Trail Ridge Energy, L.L.C.
Trail Ridge Landfill
0310358-004-AC, PSD-FL-374

Dear Mr. Bunyak:

Enclosed for your review and comment is a PSD application submitted by Trail Ridge Energy, L.L.C., for a new landfill gas fueled internal combustion engine electricity generation facility at the Trail Ridge Landfill in Baldwin, Duval County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Syed Arif, Review Engineer, at 850/921-9528.

Sincerely,

JFK
Jeffrey F. Koerner, P.E., Administrator
North Permitting Section


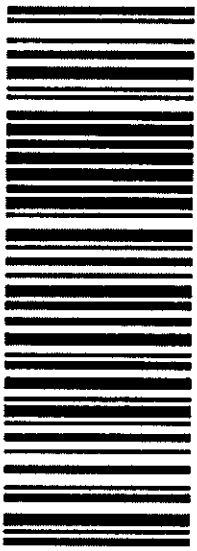
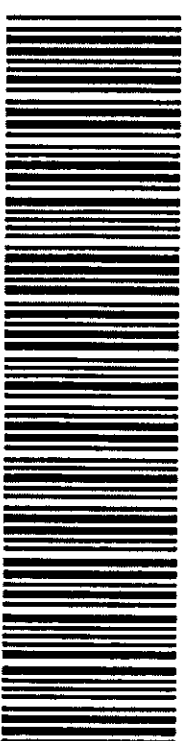
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cc: S. Arif

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ORIGIN: TLH Sender's ref: 37550201000 A7 AP255 POSTCODE: 80228 Tel: 303-966-2818				
Description: PSD-FL-374 correspondence Weight: 2 lbs for 1 pcs Date: 2006-04-18 DHL standard terms and conditions apply.				
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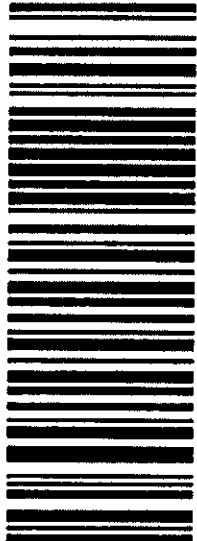
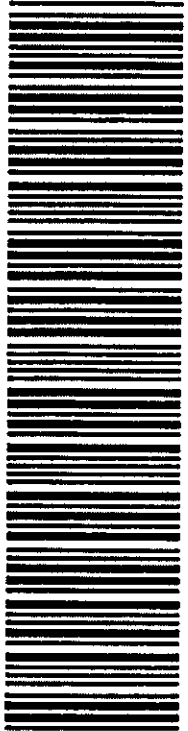
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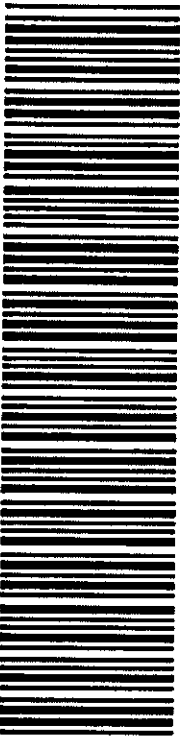
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To: City of Jacksonville Mr. Richard Robinson 117 W Duval St., Suite 225 Env. Resources Mgt. Dept. Jacksonville, FL 32202 UNITED STATES		POSTCODE: 32202 Tel: 904/630-4900	
Description: PSD-FL-374 correspondence		Weight: 2 lbs for 1 pcs Date: 2006-04-18	
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 117 W. Duval St., Suite 225

Jacksonville, FL 32202
 UNITED STATES

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 Phone#: 904/630-4900

Sent By: P. Adams
 Phone#: 850-921-9505

Rate Estimate: 3.06
 Protection: Not Required
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Derenzo and Associates, Inc.

Environmental Consultants

April 10, 2006

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APR 12 2006

Mr. Syed Arif, P.E.
Bureau of Air Regulation
Division of Air Resource Management
Department of Environmental Protection
STATE OF FLORIDA
2600 Blair Stone Road, MS 5505
Tallahassee, FL 32399-2400

BUREAU OF AIR REGULATION

Subject: Trail Ridge Energy, L.L.C.
DEP File No. 0310358-004-AC (PSD-FL-374)
Response to March 15, 2006 request for information

Dear Mr. Arif:

Derenzo and Associates, Inc. (Derenzo and Associates), on behalf of Trail Ridge Energy, L.L.C., is submitting to the Florida Department of Environmental Protection, Division of Air Resource Management (FDEP-DARM) information that was requested by the regulatory agency on March 15, 2006.

Attachment A provides for reference the March 15, FDEP-DARM communication.

Item 1 – Comparative Emissions Study

No comparative emissions study for products of combustion has been done between flare emissions and emissions from internal combustion engines.

Item 2 – Appendix H-1, Table 3

Attachment B provides corrected:

1. Appendix H-1, Table 3 data (based on LFG methane concentration of 45%, carbon dioxide concentration of 40%, nitrogen concentration of 10%, oxygen concentration of 5%, as presented in Table 1 of the main application document).
2. Landfill gas molecular weight information.
3. Page 41 of the main permit application document (the Trail Ridge Landfill LFG sulfur content is expected to be 0.018%).

Item 3 – Appendix H-2, Table 5

Attachment C provides corrected Appendix H-2, Table H-5, H-6 and H-7 footnote data. The sample calculation used an incorrect TCE ppmv concentration of 0.1 ppmv instead of the 0.48 ppmv value presented in the table. The calculations presented in the previously submitted documents are correct and not influenced by the correction.

Item 4 – Trail Ridge Landfill Stationary Source

Derenzo and Associates contacted Mr. Jeff Koerner prior to the submittal of the Trail Ridge Energy Air Construction Permit application to discuss the project and Title Operating Permit requirements. Mr. Koerner recommended that the Air Construction permit for the project be secured and subsequent permit application documents be submitted to the FDEP-DARM to incorporate the new air pollutant emission facility applicable requirements into the Title V Operating Permit that was issued the stationary source (Trail Ridge Landfill).

Derenzo and Associates informed Mr. Koerner that based on the independent operating nature of the users of gas generated by landfills (i.e, the gas rights are typically held by a third party; the LFG electricity generation facility purchases gas from the gas rights holder, leases land from the landfill and has no involvement with the landfill operations; and the landfill has no involvement in the power generation operations), states such as Michigan and Illinois have issued Title V Operating Permits that have two or more sections with separate associated responsible officials and regulatory contacts. These operating permits are issued as separate documents (to each facility at the stationary source with appropriate applicable requirements) that are connected to the same stationary source by an identification number (Illinois) or one document (Michigan) with two (or more) sections (one for each facility at the stationary source).

Mr. Koerner appeared to understand the potential complexities of the compliance issues that are associated with incorporating the applicable requirements of the LFG gas user (electricity generation facility) and landfill owner/operator into a single combined Title V Operating Permit and informed Derenzo and Associates that the FDEP-DARM would try to accommodate a request for a sectionalized (or partitioned) operating permit.

Attachment D provides the Title V Operating Permit (State of Michigan Renewable Operating Permit) that has been issued Sumpter Energy Associates at the Pine Tree Landfill (SEA – PTA). Sumpter Energy Associates is a sister company of Trail Ridge Energy. This operating permit has two sections, one has the applicable requirements of the landfill owner/operator and the other has the applicable requirements of the LFG user (electricity generation facility).

Trail Ridge Energy will provide the FDEP-DARM with a letter from the Trail Ridge Landfill that indicates the construction and operation of the proposed electricity at the landfill stationary source is acceptable to the owner/operator.

Item 5 – HCl Emission Compliance

Trail Ridge Energy will demonstrate compliance with a 10 ton per year hydrogen chloride (HCl) facility emission limit through the collection and analysis of samples of the landfill gas (LFG) used to fuel the IC engines. The HCl emission factor developed from the LFG analyzes (pounds of HCl per million cubic feet LFG fuel combustion) times the annual totalized measurement of treated gas (fuel) flow to the facility (million cubic feet of gas) will result in the actual amount of HCl emitted by the six IC engine operations

Attachment E provides a proposal that presents services to measure the chlorinated content of the SEA – PTA LFG fuel for use in the development of an IC engine fuel combustion HCl emission factor.

There is no need to limit engine-generator operating hours in order to demonstrate compliance with a 10 TpY HCl facility limit. The main function of the facility is to produce as much electricity as possible for sale to the local utility. Any restriction on the number of hours that the engine-generators are allowed to operate annually has an adverse effect on the project economics and operating revenues.

Item 6 - IC Engine PM-10 Emissions

Trail Ridge Energy has submitted permit application data to the FDEP-DARM for its proposed electricity generation facility that indicate and justify that BACT for PM-10 emitted from the LFG fueled engines (CAT 3520C) is 0.24 g/bhp-hr. This value is supported by data on IC LFG fueled engines that is presented in the USEPA RBL Clearinghouse for LFG fueled IC engines. Permits issued LFG fueled IC engines have limited their PM-10 emissions to rates that range from 0.04 to 0.34 g/bhp-hr.

The information previously submitted to the FDEP-DARM states that:

Operational experience obtained by Caterpillar, Inc. and users of its LFG fueled IC engines indicates that PM-10 emissions for LFG fueled IC engines are dependent on engine operating hours. While PM-10 emissions from the operation of new LFG fueled IC engines have been initially tested to be very low (i.e., <0.06 g/bhp-hr) subsequent measurements on the same equipment that are representative of increased engine operating hours indicate the presence of higher emission levels. The increased PM-10 emissions (from new engine operating conditions) has been attributed to particulate contributions from crankcase lubrication oil aerosols, which is the result of normal wear on piston rings and seals (i.e., not additional particulate contributions from the source of the LFG fuel).

Trail Ridge Energy representatives recorded in 2001 and a portion of 2002 the average daily crankcase oil consumption for CAT 3616 gas IC engines operated on LFG.

Attachment F provides the specified CAT 3616 gas IC engine oil use records.

Particulate (PM-10) emission tests that were performed on these engines indicate that the results of the initial compliance tests (that reflect new engine operations) varied from results of subsequent compliance tests (over a three year period) by a maximum value of approximate 300 % (300% increase).

The results of the same tests indicate that the highest PM-10 emission measurement exceeds the permitted limit (over a three year period) by a maximum factor of approximately 3.

The PM-10 emission limit for the specified engines was set at a value <0.1 g/bhp-hr that was obtained from the results of tests performed on new identical engines operated at another landfill. Caterpillar does not provide particulate emission guarantees for the CAT 3616 gas IC engine, which is also the case for the CAT 3520C gas IC engine. Therefore, in the absence of operational and emission compliance experience with this equipment (which was newly introduced to the LFG energy development market in the mid 1990s like the CAT 3520C engine was in 2005 with ordering allowed in early 2005 for delivery in late 2005) as presented in the preceding text, the identical equipment test results (which served as the basis for the permitted limit) were believed to be representative of particulate emissions that would occur over all engine operating conditions (which proved not to be the case for the reasons specified).

Trail Ridge Energy representatives, which have over 15 years experience with permitting and operating LFG fueled IC engine operations and have a relationship with Caterpillar of a similar duration, are not aware of any new data that supports a claim that the CAT 3520C gas IC engine can achieve a PM-10 emission limit of 0.148 g/bhp-hr (or less) over the operating life of the equipment (under all LFG applications, site specific fuel quality variation and engine operating conditions).

The fact that Bio Energy Texas facility has been permitted with PM-10 emissions of 0.148 g/bhp-hr is not a basis for a determination that the value is BACT.

The federal 40 CFR Part 52.21(b) Definitions (12) Best available control technology specifies that Best available control technology means an emission limitation based on the maximum degree of reduction ...on a base-by-case basis, taking into account energy, environmental and economic factors and other costs, determines is achievable ...

BACT is not a value or control specified:

1. By unsupported and potentially erroneous information that is used to establish permit limits.
2. By results of a limited set of compliance demonstration data that do not provide a basis that the limit can be continuously achieved over the operating conditions of the equipment.

3. In the absence of a detailed review of technical data on the equipment and an understanding of operating variables that properly address its potential emissions (as has been provided by Trail Ridge Energy).

Therefore, based on the preceding information and the previous permit application data submitted to the FDEP-DARM, PM-10 BACT for the CAT 3520C gas IC engine is 0.24 g/bhp-hr.

Item 7 - IC Engine Operations

The CAT® G3520C gas IC engines will operate under base load conditions (100% design capacity). There will be no periods of primary electrical generation when the engines are operated at partial loads. The main function of the facility is to produce as much electricity as possible for sale to the local utility. Engine down time and partial load electricity generation conditions have adverse effects on operating revenues. Engine startup and shutdown occurrences will be relatively infrequent.

Trail Ridge Energy expects to maintain a combined engine base load utilization factor of approximately 95% (i.e., on an annual basis, the combined facility engines will be operated at base load 95% of the time). Engine operations will be periodically stopped as necessary to perform equipment maintenance activities (i.e., on an annual basis, the combined facility engines will be stopped for maintenance approximately 5 % of the time).

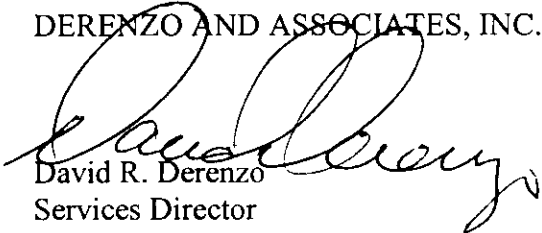
The amount of time that is required to commence engine operations and ramp up power to base load conditions is less than 10 minutes. The amount of time that is required stop engine operations and ramp down power is less than 10 minutes. These infrequent periods of engine start up and shutdown will not have an impact on the potential hourly and annual air pollutant emission rates that are presented in the permit application documents.

Trail Ridge Energy , L.L.C.. appreciates the consideration of the FDEP-DARM of the information that is presented in this document.

Please contact us if you have questions or require additional information.

Sincerely,

DERENZO AND ASSOCIATES, INC.



David R. Derenzo
Services Director

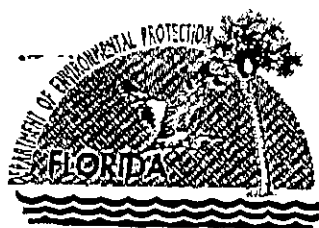
c: Bill Owen, Landfill Energy Systems

C. Kirta, NED
P. Robinson, Duval Co.
N. W. Allen, EPA
A. R. Ruppel, NPS
C. Halladay

Derenzo and Associates, Inc.

ATTACHMENT A

March 15, 2006 FDEP-DARM Communication



Department of Environmental Protection

Jeb Bush
Governor

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

March 15, 2006

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. Scott Salisbury
Trail Ridge Energy, L.L.C.
29261 Wall Street
Wixom, Michigan 48393

Re: DEP File No. 0310358-004-AC (PSD-FL-374)

Trail Ridge Energy – Installation of six (6) reciprocating internal combustion engines

Dear Mr. Salisbury:

The Department has received the application on February 24, 2006, to allow Trail Ridge Energy to construct and operate an electric generation facility at the Trail Ridge Landfill Facility in Duval County. Based on our initial review of the proposed project, we have determined that additional information is needed in order to continue processing this application package. Please submit the information requested below to the Department's Bureau of Air Regulation:

1. Please indicate if a comparative emissions study for products of combustion has been done between flare emissions and emissions from internal combustion engines. If such a study was done, please provide the results to the Department.
2. Appendix H-1, Table H-3 of the application calculates fuel weight percent sulfur content. The CO₂ concentration is indicated as 52 percent by volume, whereas Table 1 of the main application shows expected CO₂ gas composition to be less than 40 percent by volume. Additionally, the LFG molecular weight does not match up between the calculated value (30.9 g/mol) and the one used in determining the LFG sulfur content (28 g/mol). Please explain the discrepancy.
3. Appendix H-2, Table H-5 of the application shows a sample calculation for 1,1,1 trichloroethane (TCE) emissions in footnote A. Please explain the reasons for using 0.1 ft³ TCE/MMcf LFG in the calculations. The same factor was used in Tables H-6 and H-7.
4. The application in Section 5.2 states that the Trail Ridge Energy is part of the Trail Ridge Landfill Stationary Source and its approved Air Construction Permit is to be incorporated into the landfill Title V Operating Permit. By doing so, Trail Ridge Landfill will be responsible for the compliance of all the permit conditions in the Air Construction Permit. Please provide a letter signed from the Responsible Official of the Trail Ridge Landfill facility agreeing to comply with all the requirements and being responsible for any violations of the Air Construction Permit.
5. Please explain how the facility will show compliance if the HCl emissions from the proposed engine operations are restricted to less than 10 TPY. Is the facility in agreement to limit the hours of operation of the engines to comply with the 10 TPY restrictions?

"More Protection, Less Process"

Mr. Scott Salisbury
Page 2 of 2
March 15, 2006

6. The application indicates that CAT G3520C gas IC engines have been installed and are operating at Bio Energy Texas. The maximum allowable PM_{10} emissions that is permitted for this facility is 0.148 g/bhp-hr. Please explain the reasons for requesting 0.24 g/bhp-hr for this project when the same IC engines will be utilized at Trail Ridge Energy.
7. Please indicate if the IC engines will operate continuously or whether the engines will frequently start and stop. When the engines do operate, will it be operating at base load or at less than base load? What affect will operating at less than base load have on emissions?

Modeling information under Appendix I of the application has not been submitted. The Department will have additional 30 days after receiving the modeling information to send any further comments based on the modeling review. Any additional comments from EPA and the U.S. Fish and Wildlife Service will be forwarded to you after we receive them.

The Department will resume processing this application after receipt of the requested information. Rule 62-4.050(3), F.A.C. requires that all applications for a Department permit must be certified by a professional engineer registered in the State of Florida. This requirement also applies to responses to Department requests for additional information of an engineering nature. A new certification statement by the authorized representative or responsible official must accompany any material changes to the application. Rule 62-4.055(1), F.A.C. now requires applicants to respond to requests for information within 90 days.

We will be happy to meet and discuss the details with you and your staff. If you have any questions, I can be contacted at 850/921-9528. You may discuss the modeling requirements with Mr. Cleve Holladay at 850/921-8689.

Sincerely,



Syed Arif, P.E.
Bureau of Air Regulation

/sa

cc: Chris Kirts, DEP-NED
Richard Robinson, ERM/AQB
Jeff Pope, P.E., Clayton Group Services, Inc.
Gregg Worley, EPA Region 4
John Bunyak, NPS

ATTACHMENT B

**Corrected Appendix H-1, Table H-3 Data
Main permit application document page 41**

Fuel Sulfur Content Calculation (% Weight)Expected fixed gas concentrations^A:

CH ₄	45.0% vol.
CO ₂	40.0% vol.
O ₂	5.0% vol.
Balance N ₂	10.0% vol.

Calculated LFG molecular weight:

$$(16) (\%CH_4) + (44) (\%CO_2) + (32) (\%O_2) + (28) (\%N_2) = 29.2 \text{ g/mol}$$

LFG sulfur content:**164.2 ppm H₂S**

LFG sulfur content

$$(164.2 \text{ mol H}_2\text{S}) / (10^6 \text{ mol LFG}) (32 \text{ g S/mol H}_2\text{S}) / (29.2 \text{ g LFG/mol}) = 0.018\% \text{ wt.}$$

- A. Expected at LHV of 450 Btu/scf based on Landfill Energy Systems analyses
(see Table 1 of main document)

Appendix O provides a draft SSM plan for the LFG treatment equipment and processes.

7.3 Federal Acid Rain Program

The federal Acid Rain Program (40 CFR Part 72) has been promulgated pursuant to requirements of Title IV of the 1990 Clean Air Act Amendments. New unit exemption provisions of §72.7 specify that utility units:

1. Having a total nameplate capacity of 25 MW or less;
2. Not burning coal or coal-derived fuel; and
3. Burning gaseous fuel with an annual average sulfur content of 0.05% by weight or less,

are exempt from the Acid Rain Program, except for its notification and recordkeeping requirements (§§72.2 through 72.7 and §§72.10 through 72.13).

Utility unit is defined for the purposes of Part 72 as *any person that sells electricity*. Therefore, the proposed electricity generation facility:

1. Is an utility that has a total nameplate capacity of 9.6 MW,
2. Does not burn coal or any coal-derived fuel, and
3. Only burns gaseous fuel (LFG) with an annual average sulfur content of less than 0.05% by weight (Appendix H, Table H-3 data indicate that the Trail Ridge Landfill LFG sulfur content is expected to be 0.018% by weight).

Based on the preceding information, the proposed LFG fueled IC engine electricity generation facility is only subject to the notification and recordkeeping requirements of the federal Acid Rain Program.

8.0 ADDITIONAL AIR IMPACT ANALYSES

Federal and State of Florida PSD regulations require (in addition to appropriate air pollutant emission BACT and air quality impact demonstrations) that new major sources address air quality issues that pertain to visibility degradation, and vegetation, soil and growth impacts.

Derenzo and Associates, Inc.

Table 1. Measured and expected gas composition and fuel properties for LFG recovered from the Trail Ridge Landfill

Component	Sample Date ¹ January 28, 2003	Expected ² For IC Engine Fuel
Methane (% vol.)	48.7	>45
Carbon Dioxide (% vol.)	38.3	<40
Nitrogen (% vol.)	11.9	<10
Oxygen (% vol.)	2.3	<5
Fuel LHV (Btu/scf)	443.5 ^A	>420

Notes

1. See Appendix E (Waste Energy Technology, LLC report dated February 2003)
2. Based on engine operator analysis.

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ATTACHMENT C

Corrected Appendix H-2, Table H-5, H-6, H-7 Data

**LFG Constituent Combustion Potential Air Contaminant Emissions
Internal Combustion Engine**

LFG Constituent	Landfill Gas		Molecular Weight (g/mol)	Destruction Efficiency ² (%)	Emission (lb./hr)	Emission (TpY)
	Concentration ¹ (ppm)	(mg/m ³)				
1,1,1-trichloroethane*	0.480	2.66	133.42	93.0%	0.000404	0.00177 ^A
1,1,2,2-tetrachloroethane*	1.110	7.75	167.85	93.0%	0.001175	0.00515
1,1-dichloroethane*	2.350	9.67	98.97	93.0%	0.001466	0.00642
1,1-dichloroethene*	0.200	0.81	96.94	93.0%	0.000122	0.00054
1,2-dichloroethane*	0.410	1.69	98.96	93.0%	0.000256	0.00112
1,2-dichloropropane*	0.180	0.85	112.98	93.0%	0.000128	0.00056
2-propanol (isopropyl alcohol)	50.100	125.22	60.11	86.1%	0.037703	0.16514
Acetone	7.010	16.93	58.09	86.1%	0.005098	0.02233
Acrylonitrile*	6.330	13.97	53.06	86.1%	0.004205	0.01842
Bromodichloromethane	3.130	21.32	163.83	93.0%	0.003233	0.01416
Butane	5.030	12.16	58.14	86.1%	0.003661	0.01604
Carbon disulfide*	0.580	1.84	76.13	86.1%	0.000553	0.00242
Carbon monoxide	141.000	164.22	28.01	86.1%	0.049446	0.21657
Carbon tetrachloride*	0.004	0.03	153.84	93.0%	0.000004	0.00002
Carbonyl sulfide*	0.490	1.22	60.07	86.1%	0.000369	0.00161
Chlorobenzene*	0.250	1.17	112.56	93.0%	0.000177	0.00078
Chlorodifluoromethane (Freon 22)	1.300	4.67	86.47	93.0%	0.000709	0.00310
Chloroethane*	1.250	3.35	64.52	93.0%	0.000508	0.00223
Chloroform*	0.030	0.15	119.39	93.0%	0.000023	0.00010
Chloromethane (methyl chloride)*	1.210	2.54	50.49	93.0%	0.000385	0.00169
Dichlorobenzene	0.210	1.28	147.00	93.0%	0.000195	0.00085
Dichlorodifluoromethane	15.700	78.93	120.91	93.0%	0.011969	0.05242
Dichlorofluoromethane	2.620	11.21	102.92	93.0%	0.001700	0.00745
Dichloromethane (methylene chloride)*	14.300	50.50	84.94	93.0%	0.007658	0.03354
Dimethyl sulfide (methyl sulfide)	7.820	20.20	62.13	93.0%	0.003063	0.01342
Ethane	889.000	1,111.90	30.08	86.1%	0.334792	1.46639
Ethanol	27.200	52.12	46.08	86.1%	0.015692	0.06873
Ethyl mercaptan (ethanethiol) ^B	2.280	5.89	62.13	99.0%	0.000128	0.00056
Ethylbenzene*	4.610	20.35	106.16	99.0%	0.000441	0.00193
Ethylene dibromide*	0.001	0.01	187.88	86.1%	0.000002	0.00001
Fluorotrichloromethane (Freon 11)	0.760	4.34	137.36	93.0%	0.000658	0.00288
Hexane*	6.570	23.54	86.17	86.1%	0.007088	0.03104
Hydrogen chloride* ^C	NA	NA	36.46	0.0%	0.416655	1.82495
Hydrogen sulfide* ^D	124.000	175.71	34.08	99.0%	0.003806	0.01667
Mercury (total)*	0.0003	0.00	200.61	0.0%	0.000005	0.00002

Notes

* 1990 CAA Amendments HAPs

1. Default concentration for LFG constituents from USEPA Compilation of Air Pollutant Emission Factors, Fifth Edition, Volume I: Stationary Point and Area Sources (AP-42), Table 2.4-1, which is provided at the end of this Appendix

2. AP-42 default control efficiency values for IC engines, Table 2.4-3, which are provided at the end of this Appendix.

A. Sample calculation, 1,1,1 trichloroethane (TCE) emissions

$$(0.48 \text{ ft}^3 \text{ TCE/MMcf LFG}) (133.42 \text{ lb. TCE/mol}) (1-0.93) / (387 \text{ ft}^3 \text{ TCE/mol}) (0.034857 \text{ MMscf/hr}) = 0.000404 \text{ lb./hr. TCE}$$

$$(0.000404 \text{ lb./hr. TCE}) (8,760 \text{ hr./yr.}) (1.0 \text{ ton}/2,000 \text{ lb}) = 0.00177 \text{ TpY}$$

B. Ethyl mercaptan has an autoignition temperature of 570 F, therefore a 99% DE was used.

C. Based on the Hydrogen chloride emission factor presented in Table F-7.

D. Hydrogen sulfide has an autoignition temperature of 500 F, therefore a 99% DE was used.

LFG Combustion Hydrogen Chloride Emission Factor

Influent Chlorine Compounds	Landfill Gas Concentration ¹ (ppm)	Molecular Formula	No. Chlorine Atoms	HCl Emission Factor (lb./MMcf)
1,1,1-trichloroethane	0.48	C ₂ H ₃ Cl ₃	3	0.14 ^{a,u}
1,1,2,2-tetra chloroethane	1.11	C ₂ H ₂ Cl ₄	4	0.42 ^u
1,1-dichloroethane	2.35	C ₂ H ₄ Cl ₂	2	0.44 ^u
1,1-dichloroethene	0.2	C ₂ H ₂ Cl ₂	2	0.04 ^u
1,2-dichloroethane	0.41	C ₂ H ₄ Cl ₂	2	0.08 ^u
1,2-dichloropropane	0.18	C ₃ H ₆ Cl ₂	2	0.03 ^u
Bromodichloromethane	3.13	CBrCl ₂	2	0.59 ^u
Carbon tetrachloride	0.004	CCl ₄	4	0.00 ^u
Chlorobenzene	0.25	C ₆ H ₅ Cl	1	0.02 ^u
Chlorodifluoromethane	1.3	CHFCl	1	0.12 ^b
Chloroethane	1.25	C ₂ H ₅ Cl	1	0.12 ^u
Chloroform	0.03	CHCl ₃	3	0.01 ^u
Chloromethane	1.21	CH ₃ Cl	1	0.11 ^u
Dichlorobenzene	0.21	C ₆ H ₄ Cl ₂	2	0.04 ^u
Dichlorodifluoromethane	15.7	CF ₂ Cl ₂	2	2.96 ^u
Dichlorofluoromethane	2.62	CHFCl ₂	2	0.49 ^u
Dichloromethane	14.3	CH ₂ Cl ₂	2	2.69 ^u
Fluorotrichloromethane	0.76	CFCl ₃	3	0.21 ^u
Perchloroethylene	3.73	C ₂ Cl ₄	4	1.41 ^u
Trichloroethylene	2.82	C ₂ HCl ₃	3	0.80 ^u
t-1,2-dichloroethane	2.84	C ₂ H ₂ Cl ₂	2	0.54 ^u
Vinyl chloride	7.34	C ₂ HCl	1	0.69 ^u
Total hydrogen chloride emission factor (lb./MMcf)				11.95

Notes

1. From AP-42 default concentrations as presented in Table H-5.

a. Assumes complete conversion of chloride to HCl, calculation for 1,1,1-trichloroethane (TCE):

$$(0.48 \text{ ft}^3 \text{ TCE/MMcf LFG}) (3 \text{ mol HCl/mol TCE}) (36.46 \text{ lb. HCl/mol}) / (387 \text{ ft}^3/\text{mol}) \\ = 0.14 \text{ lb. HCl/MMcf LFG}$$

b. Based on AP-42 default concentrations, which are provided at the end of this Appendix.

**LFG Combustion Hazardous Air Pollutant Emission Factor
Internal Combustion Engine**

HAPs ¹	Landfill Gas Concentration ²		Molecular Weight (g/mol)	Destruction Efficiency ³ (%)	HAP Emission Factor (lb./MMcf)
	(ppm)	(mg/m ³)			
1,1,1-trichloroethane	0.48	2.66	133.42	93.0%	0.012 ^A
1,1,2,2-tetrachloroethane	1.11	7.75	167.85	93.0%	0.034
1,1-dichloroethane	2.35	9.67	98.95	93.0%	0.042
1,1-dichloroethene	0.2	0.81	96.94	93.0%	0.004
1,2-dichloroethane	0.41	1.69	98.96	93.0%	0.007
1,2-dichloropropane	0.18	0.85	112.98	93.0%	0.004
Acrylonitrile	6.33	13.97	53.06	86.1%	0.121
Carbon disulfide	0.58	1.84	76.13	86.1%	0.016
Carbon tetrachloride	0.004	0.03	153.84	93.0%	0.000
Carbonyl sulfide	0.49	1.22	60.07	86.1%	0.011
Chlorobenzene	0.25	1.17	112.56	93.0%	0.005
Chloroethane	1.25	3.35	64.52	93.0%	0.015
Chloroform	0.03	0.15	119.39	93.0%	0.001
Chloromethane	1.21	2.54	50.49	93.0%	0.011
Dichloromethane	14.3	50.50	84.94	93.0%	0.220
Ethyl Benzene	4.61	20.35	106.16	86.1%	0.176
Ethylene dibromide	0.001	0.01	187.88	86.1%	0.000
Hexane	6.57	23.54	86.17	86.1%	0.203
Hydrogen chloride	NA	NA	36.46	0.0%	11.953 ^B
Mercury (total)	2.92E-04	0.00	200.61	0.0%	0.000
Methyl ethyl ketone	7.09	21.26	72.10	86.1%	0.184
Methyl isobutyl ketone	1.87	7.79	100.16	86.1%	0.067
Perchloroethylene	3.73	25.72	165.83	93.0%	0.112
Trichloroethylene	2.82	15.41	131.40	93.0%	0.067
Vinyl chloride	7.34	19.07	62.50	93.0%	0.083
Xylene	12.1	53.41	106.16	86.1%	0.461
Total HAP emission factor (lb./MMcf)					13.81

Notes

- 1990 CAA Amendments Section 112(b) HAP
 - From AP-42 default concentrations as presented in Table H-5.
 - AP-42 default control efficiency values for IC engines, Table 2.4-3, which are provided at the end of this
- A. Sample calculation, 1,1,1 trichloroethane (TCE) emissions
 $(0.48 \text{ ft}^3 \text{ TCE/MMcf LFG}) (133.42 \text{ lb. TCE/mol}) (1-0.93) / (387 \text{ ft}^3 \text{ TCE/mol})$
 $=0.012 \text{ lb. TCE/MMcf LFG}$
- B. Hydrogen chloride emission factor from Table H-6.

Derenzo and Associates, Inc.

ATTACHMENT D

**Sumpter Energy Associates - Pine Tree Landfill
State of Michigan Renewable Operating Permit**



Michigan Department Of Environmental Quality
Air Quality Division

State Registration Number

N5984

RO Permit Number

199600384

RENEWABLE OPERATING PERMIT

IS HEREBY ISSUED TO

PINE TREE ACRES INC. (LANDFILL)
AND
SUMPTER ENERGY ASSOCIATES (LANDFILL GAS CONTROL)

SRN: N5984

LOCATED AT

36600 29 MILE ROAD
LENOX TOWNSHIP, MI 48062

Permit Number: 199600384

Effective Date: December 12, 2002

Revision Date: March 2, 2006

Expiration Date: December 12, 2007

This permit is issued in accordance with and subject to Part 5506(3) of Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994. Pursuant to Air Pollution Control Rule 336.1210(1), this permit constitutes the permittee's authority to operate the major stationary source identified above in accordance with the general conditions, special conditions and attachments contained herein. Operation of the major stationary source and all emission unit/process groups listed in the permit are subject to all applicable future or amended rules and regulations pursuant to P.A. 451 and the Clean Air Act.

This permit does not relieve the permittee from the responsibility to obtain the necessary permits to install pursuant to Air Pollution Control Rule 336.1201 for new or modified process or process equipment. In addition, issuance of this Renewable Operating Permit does not obviate the necessity of obtaining such permits or approvals from other units of government as required by law.

Michigan Department of Environmental Quality

Teresa Seidel
Southeast Michigan District Supervisor
Air Quality Division

Table of Contents

TABLE OF CONTENTS	2
<u>SECTION 1</u>	5
A-1. GENERAL REQUIREMENTS	6
Enforceability	6
GENERAL CONDITIONS	6
Recordkeeping and Reporting	8
Compliance Reporting and Certification	9
Permit Shield	9
Stratospheric Ozone Protection	10
Risk Management Plan	11
B-1. SOURCE-WIDE REQUIREMENTS	12
C-1. EMISSION UNIT CONDITIONS	13
EMISSION UNIT SUMMARY TABLE	13
TABLE E-1.1 EULANDFILL(TREAT)	14
TABLE E-1.2 EUACTIVECOLL	20
TABLE E-1.3 EUTREATMENTSYS	26
TABLE E-1.4 EUOPENFLARE	29
TABLE E-1.5 EUASBESTOS	33
D- 1. FLEXIBLE GROUP CONDITIONS	37
FLEXIBLE GROUP SUMMARY TABLE	37
TABLE F-1.1 FGCOLDCLEANERS	38
APPENDICES	42
Appendix 1-1. Abbreviations Used in This Permit	42

Appendix 1-2. Schedule of Compliance	43
Appendix 1-3. Monitoring Requirements	43
Appendix 1-4. Recordkeeping	43
Appendix 1-5. Testing Procedures	44
Appendix 1-6. Permits to Install/Operate	44
Appendix 1-7. Emission Calculations	44
Appendix 1-8. Reporting	44
Appendix 1-9. Preventative Maintenance Plan/Corrective Action Plan	45
<u>SECTION 2</u>	46
A-2. GENERAL REQUIREMENTS	47
Enforceability	47
GENERAL CONDITIONS	47
Recordkeeping and Reporting	49
Compliance Reporting and Certification	50
Permit Shield	50
Stratospheric Ozone Protection	51
Risk Management Plan	52
B-2. SOURCE-WIDE REQUIREMENTS	53
C- 2. EMISSION UNIT CONDITIONS	54
EMISSION UNIT SUMMARY TABLE	54
D- 2. FLEXIBLE GROUP CONDITIONS	55
FLEXIBLE GROUP SUMMARY TABLE	55
TABLE F-2.1 FG ENGINES (with treatment system)	56
APPENDICES	61
Appendix 2-1. Abbreviations Used in This Permit	61

Appendix 2-2. Schedule of Compliance	62
Appendix 2-3. Monitoring Requirements	62
Appendix 2-4. Recordkeeping	62
Appendix 2-5. Testing Procedures	62
Appendix 2-6. Permits to Install/Operate	63
Appendix 2-7. Emission Calculations	63
Appendix 2-8. Reporting	64
Appendix 2-9. Preventative Maintenance Plan/Corrective Action Plan	64

**STATE OF MICHIGAN
RENEWABLE OPERATING PERMIT**

SECTION 1

PINE TREE ACRES INC. (LANDFILL)
AND
SUMPTER ENERGY ASSOCIATES (LANDFILL GAS CONTROL SYSTEM)

SRN: N5984

LOCATED AT

36600 29 MILE ROAD
LENOX TOWNSHIP, MI 48062

Permit Number: 199600384

Effective Date: December 12, 2002

Revision Date: March 2, 2006

Expiration Date: December 12, 2007

A-1. General Requirements

For the purpose of this Renewable Operating (RO) Permit, the **permittee** is defined as any person who owns or operates an emission unit/process group at a stationary source for which a RO Permit has been issued. This permit is issued to **Pine Tree Acres (Landfill) and Sumpter Energy Associates (Landfill gas control)**, hereinafter the permittee for this RO Permit. The department is defined in R 336.1104(d) as the Director of the Department of Environmental Quality or his or her designee.

Enforceability

All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. Those requirements which are enforceable by the state only are designated by an asterisk. (R 336.1213(5))

General Conditions

1. A challenge by any person, the Administrator of the EPA, or the department to a particular condition or a part of this RO Permit shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this RO Permit. (R 336.1213(1)(f))
2. Except as provided in Subrules 2, 3, and 4 of R 336.1301, 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 R 336.1301(1)(a) or (b) unless otherwise specified in this RO Permit. The grading of visible emissions shall be determined in accordance with R 336.1303. (R 336.1301(1) in pertinent part):
 - 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.
3. 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 R 336.1370(2). (R 336.1370)
4. 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)
5. 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 R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001(1). (R 336.2001)
6. A change in ownership or operational control of a stationary source covered by a RO Permit shall be made pursuant to R 336.1216(1). (R 336.1219(3))
7. 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. (R 336.1901(a)) *
 - b) Unreasonable interference with the comfortable enjoyment of life and property. (R 336.1901 (b)) *
8. The permittee shall comply with all conditions of this RO Permit. Any permit noncompliance constitutes a violation of Act 451 of 1994, as amended, Part 55, (Air Pollution Control) and is grounds for enforcement action, for permit revocation or revision, or for denial of the renewal of the RO Permit. All terms and conditions of this RO Permit that are designated as federally enforceable are enforceable by the Administrator of the EPA

and by citizens under the provisions of the CAA. Any terms and conditions based on applicable requirements, which are designated as "state only", are not enforceable by the EPA or citizens pursuant to the CAA. (R 336.1213(1)(a))

9. 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 RO Permit. (R 336.1213(1)(b))
10. This RO Permit 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 permit condition. Pursuant to R 336.1215 and R 336.1216, the permittee may make changes at a stationary source at his/her own risk. (R 336.1213(1)(c))
11. 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 RO Permit or to determine compliance with this RO Permit. Upon request, a person shall also furnish to the department copies of any records that are required to be kept as a term or condition of this RO Permit. (R 336.1213(1)(e))
12. 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 permit.
 - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit.
 - c) Inspect, at reasonable times, any of the following:
 - i) Any stationary source.
 - ii) Any process.
 - iii) Any process equipment, including monitoring and air pollution control equipment.
 - iv) Any work practices or operations regulated or required under the Renewable Operating Permit.
 - d) As authorized by Section 5526 of the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.
13. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Part 5522 of Act 451, P.A. 1994. (R 336.1213(1)(g))
14. This RO Permit does not convey any property rights or any exclusive privilege. (R 336.1213(1)(h))
15. For renewal of this RO Permit, 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 RO Permit. (R 336.1210(7))
16. For modifications to this RO Permit, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in R 336.1216. (R 336.1210(9))
17. For changes to any process or process equipment covered by this RO Permit that do not require a revision of the RO Permit pursuant to R 336.1216, the permittee must comply with R 336.1215. (R 336.1215 and R 336.1216)
18. A RO Permit 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 permit, but not if the effective date of the new applicable requirement is later than the RO Permit 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 the permit contains a material mistake, that information required by any applicable requirement was omitted, or that inaccurate statements were made in establishing emission limits or the terms or conditions of the permit. (R 336.1217(2)(a)(iii))
 - d) If the department determines the permit must be revised to ensure compliance with the applicable requirements. (R 336.1217(2)(a)(iv))
19. 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) and R 336.2003(1))
20. Any required test results shall be submitted to the AQD in the format prescribed by the applicable reference test method within 60 days following the last date of the test. (R 336.2001(4))

Recordkeeping and Reporting

21. Records of any periodic emission or parametric monitoring required by Parts B, E and F and Appendices of this RO Permit, shall include the following information specified in R 336.1213(3)(b)(i), where appropriate (R 336.1213(3)(b)):
- a) The date, location, time, and method of sampling or measurements.
 - b) The dates 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.
22. 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 RO Permit. (R 336.1213(1)(e) and R 336.1213(3)(b)(ii))
23. Semiannually for the term of the permit as detailed in the requirement tables, or more frequently if specified in an applicable requirement in this RO Permit, the permittee shall submit certified reports of any required monitoring to the appropriate District Office of the AQD. All instances of deviations from permit requirements during the reporting period shall be clearly identified in the reports. (R 336.1213(3)(c)(i))
24. The permittee shall promptly report any deviations from permit requirements and certify the reports. The prompt reporting of deviations from permit requirements is defined in R 336.1213(3)(c)(ii) as follows, unless otherwise described in this RO Permit (R 336.1213(3)(c)):
- a) For deviations that exceed the emissions allowed under the RO Permit, prompt reporting means reporting consistent with the requirements of R 336.1912 as detailed in Condition 26. All reports submitted pursuant to this paragraph shall be promptly certified as specified in R 336.1213(3)(c)(iii).
 - b) For deviations which exceed the emissions allowed under the RO Permit and which are not reported pursuant to R 336.1912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by R 336.1213(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 RO Permit, prompt reporting means the reporting of all deviations in the semiannual reports required by R 336.1213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

For reports required pursuant to R 336.1213(3)(c)(ii), prompt certification of the reports is described in R 336.1213(3)(c)(iii) as either of the following (R 336.1213(3)(c)):

- d) 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.
 - e) 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 permit were submitted to the department pursuant to R 336.1213(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 R 336.1213(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.
25. Except for the alternate certification schedule provided in R 336.1213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this RO Permit shall contain a 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))
26. 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 R 336.1912, to the appropriate District Office of the AQD. 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 R 336.1912, must be submitted to the appropriate 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 R 336.1912(5) and shall be certified by a Responsible Official in a manner consistent with the Clean Air Act. (R 336.1912)
27. 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 R 336.1212(7) for each emission unit/process group utilizing the emissions inventory forms provided by the department. (R 336.1212(7))

Compliance Reporting and Certification

28. A Responsible Official shall certify to the appropriate District Office of the AQD and the EPA that the stationary source is and has been in compliance with all terms and conditions contained in the RO Permit except for deviations that have been or are being reported to the appropriate District Office of the AQD pursuant to Condition 24. This certification shall include all the information specified in R 336.1213(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 EPA address is: US EPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, IL, 60604. (R 336.1213(4)(c))
29. The certification of compliance shall be submitted annually for the term of this RO Permit as detailed in the requirement tables, or more frequently if specified in an applicable requirement or in this RO Permit. (R 336.1213(4)(c))

Permit Shield

30. Compliance with the conditions of the RO Permit shall be considered compliance with any applicable requirements as of the date of RO issuance, if either of the following provisions is satisfied (R 336.1213(6)(a)(i) and (ii)):
- The applicable requirements are included and are specifically identified in the permit.
 - 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 G of this RO Permit have been identified as non-applicable to this RO Permit and are included in the permit shield.
31. Nothing in this RO Permit shall alter or affect any of the following:
- The provisions of Section 303 of the CAA, emergency orders, including the authority of the EPA under Section 303 of the Act. (R 336.1213(6)(b)(i))
 - The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this permit issuance. (R 336.1213(6)(b)(ii))
 - The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. (R 336.1213(6)(b)(iii))
 - The ability of the EPA to obtain information from a source pursuant to Section 114 of the CAA. (R 336.1213(6)(b)(iv))
32. The permit shield shall not apply to provisions incorporated into this permit through procedures for any of the following:
- Changes for operational flexibility made pursuant to R 336.1215. (R 336.1215(5))
 - Administrative amendments made pursuant to R 336.1216(1)(a)(i-iv) until the changes have been approved by the department. (R 336.1216(1)(b)(iii))
 - Administrative amendments made pursuant to R 336.1216(1)(a)(v) until the amendment has been approved by the department. (R 336.1216(1)(c)(iii))
 - Minor permit modifications made pursuant to R 336.1216(2). (R 336.1216(2)(f))
 - State-only modifications made pursuant to R 336.1216(4) until the changes have been approved by the department. (R 336.1216(4)(e))
33. Expiration of this RO Permit 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 RO Permit, but the department fails to take final action before the end of the permit term, the existing RO Permit does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original permit term until the department takes final action. (R 336.1217(1)(c), R 336.1217(1)(a))

Stratospheric Ozone Protection

34. If the permittee is subject to 40 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 reclaiming, 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.
35. 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, Sub-part 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 HCFC-22 refrigerant.

Risk Management Plan

36. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the EPA the required data related to the risk management plan (RMP) for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under Part 68 do not limit in any way the general duty provisions under Section 112(r)(1).
37. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of Part 68 no later than the latest of the following dates as provided in 68.10(a):
 - a) June 21, 1999,
 - b) Three years after the date on which a regulated substance is first listed under 68.130, or
 - c) The date on which a regulated substance is first present above a threshold quantity in a process.
38. 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.
39. 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 Conditions 28 and 29 of this RO Permit. (40 CFR Part 68)

B-1. Source-Wide Requirements

At the time of RO permit issuance, the AQD has determined that there are no additional specific source-wide applicable requirements which apply to all emission unit/process groups at this stationary source. Therefore, the Permittee is subject to the General Requirements in Part A and any other terms and conditions contained in this RO permit.

C-1. EMISSION UNIT 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
EULANDFILL(TREAT)	This emission unit represents the general Municipal Solid Waste (MSW) Landfill. Control Devices include three Skid-Mounted Utility Flares EUOPENFLARE and seven Internal Combustion Engines EUCENGINE1 through EUCENGINE7.	July 30, 1986/ June 15, 1999 / July, 2005 (third flare)	NA
EUACTIVECOLL	This emission unit represents the active landfill gas collection system at the landfill that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment.	Prior to June 1999	NA
EUTREATMENTSYS	Processing equipment that treats collected landfill gas for subsequent sale or use.	07/24/2001	FGENGINES
EUOPENFLARE	Open flare is an open combustor without enclosure or shroud. Skid-Mounted Utility Flare System with (2) 12 x 35 Flare stacks.	04/19/2002	NA
EUASBESTOS	Any active or inactive asbestos disposal site.	future	NA
EUCOLDCLEANER	This emission unit consists of one or more small coldcleaners/degreasers, which are exempt from the requirements of R336.1201 and which were installed after July 1, 1979.	01/01/1999	FGCOLDCLEANERS

**TABLE E-1.1 EULANDFILL(TREAT)
 EMISSION UNIT CONDITIONS**

DESCRIPTION – This emission unit represents the general Municipal Solid Waste (MSW) Landfill in which the collected landfill gas is sent primarily to a treatment system.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT – Three Skid-mounted Utility flare systems are used as supplemental and back-up control for the landfill gas to electric plant. The landfill gas is treated by a treatment system before the landfill gas is used as fuel or sold for subsequent use.

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1. Methane concentration	500 ppm above background level	Calendar quarter	Surface of Landfill	V.1., V.2.	40 CFR 60.753(d), 40 CFR 60.755(c), 40 CFR 63.1955(a)(1)

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

- The permittee shall comply with the requirements in 40 CFR 63.1955(b) and 40 CFR 63.1960 through §63.1980. (40 CFR 63.1945(d))

IV. DESIGN/EQUIPMENT PARAMETER(S)

- The permittee shall have installed a collection and control system that captures the landfill gas generated within the landfill as required by 40 CFR 60.752(b)(2)(i)(C), 60.752(b)(2)(ii), and 40 CFR 60.752(b)(2)(iii). (40 CFR 60.752(b)(2)(i)(C), 60.752(b)(2)(ii), (40 CFR 60.752(b)(2)(iii), 40 CFR 63.1955(a)(1))
- The permittee shall route all the collected landfill gas to at least one of the following:
 - A flare designed in accordance with §60.18 (40 CFR 60.752(b)(2)(iii)(A), 40 CFR 63.1955(a)(1))
 - A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in § 60.754(d). (40 CFR 60.752(b)(2)(iii)(B), 40 CFR 63.1955(a)(1))

- c. To a treatment system that processes the collected gas for subsequent sale or use. The treatment system shall be designed so that all emissions from any atmospheric vent(s) shall be subject to 40 CFR 60.752(b)(2)(iii)(B) or (C). **(40 CFR 60.752(b)(2)(iii)(C), 40 CFR 63.1955(a)(1))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. To determine if the methane concentration is less than 500 ppm above background at the surface of the landfill is exceeded, the permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing. **(40 CFR 60.753(d), 40 CFR 63.1955(a)(1))**
2. The permittee shall use the following procedures for compliance with the surface methane operational standard as provided above in §60.753(d)
 - a. The permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site-specific established spacing approved by the AQD) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications provided in §60.755(d). **(40 CFR 60.755(c)(1), 40 CFR 63.1955(a)(1))**
 - b. The background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells. **(40 CFR 60.755(c)(2), 40 CFR 63.1955(a)(1))**
 - c. Surface emission monitoring shall be performed in accordance with Section 4.3.1 of Method 21 of Appendix A of 40 CFR Part 60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions. **(40 CFR 60.755(c)(3), 40 CFR 63.1955(a)(1))**
 - d. Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified below shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d). **(40 CFR 60.755(c)(4), 40 CFR 63.1955(a)(1))**
 - i. The location of each monitored exceedance shall be marked and the location recorded. **(40 CFR 60.755(c)(4)(i), 40 CFR 63.1955(a)(1))**
 - ii. Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance. **(40 CFR 60.755(c)(4)(ii), 40 CFR 63.1955(a)(1))**
 - iii. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in §60.755(c)(4)(v) (below in condition **V.2.d.v.**) shall be taken, and no further monitoring of that location is required until the action specified in §60.755(c)(4)(v) (below in condition **V.2.d.v.**) has been taken. **(40 CFR 60.755(c)(4)(iii), 40 CFR 63.1955(a)(1))**
 - iv. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in 60.755(c)(4) (ii) or (iii) (above in conditions **V.2.d.ii.** or **iii.**) shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above backgrounds, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in §60.755(c)(4)(iii) (above in condition

V.2.d.iii.) or in §60.755(c)(4)(v) (below in condition V.2.d.v.) shall be taken. (40 CFR 60.755(c)(4)(iv), 40 CFR 63.1955(a)(1))

- v. For any location where monitored methane concentration equals or exceeds 500 parts per million above backgrounds three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the AQD for approval. **(40 CFR 60.755(c)(4)(v), 40 CFR 63.1955(a)(1))**
3. The permittee shall comply with the provisions in §60.755(c) with the following instrumentation specifications and procedures for surface emission monitoring devices: **(40 CFR 60.755(d), 40 CFR 63.1955(a)(1))**
 - a. The portable analyzer shall meet the instrument specifications provided in Section 3 of Method 21 of Appendix A of 40 CFR Part 60, except that "methane" shall replace all references to VOC. **(40 CFR 60.755(d)(1), 40 CFR 63.1955(a)(1))**
 - b. The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air. **(40 CFR 60.755(d)(2), 40 CFR 63.1955(a)(1))**
 - c. To meet the performance evaluation requirements in Section 3.1.3 of Method 21 of Appendix A of 40 CFR Part 60, the instrument evaluation procedures of Section 4.4 of Method 21 of Appendix A of 40 CFR Part 60 shall be used. **(40 CFR 60.755(d)(3), 40 CFR 63.1955(a)(1))**
 - d. The calibration procedures provided in Section 4.2 of Method 21 of Appendix A of 40 CFR Part 60 shall be followed immediately before commencing a surface monitoring survey. **(40 CFR 60.755(d)(4), 40 CFR 63.1955(a)(1))**
4. The permittee shall keep the following written records pertaining to surface methane monitoring: **(R 336.1213(3))**
 - a. The route traversed including any areas not monitored because of unsafe conditions (ie. Truck traffic, construction, active face, dangerous areas, etc.) and areas included where visual observations indicate elevated levels of landfill gas,
 - b. The location(s) and concentrations of any reading above 500 ppm above background,
 - c. The meteorological conditions the day of the testing including wind speed, wind direction, temperature, and cloud cover).
5. The permittee shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring. **(40 CFR 60.756(f), 40 CFR 63.1955(a)(1))**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall implement a program to monitor on a monthly basis for cover integrity and implement cover repairs as necessary. **(40 CFR 60.755(c)(5), 40 CFR 63.1955(a)(1))**
2. Except as provided in §60.752(b)(2)(i)(B), the permittee shall maintain up-to-date, readily accessible, on-site records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable. **(40 CFR 60.758(a), 40 CFR 63.1955(a)(1))**
3. Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity", shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may

be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable. **(40 CFR 60.758(f), 40 CFR 63.1955(a)(1))**

4. The permittee shall calculate and record the NMOC emission rate for purposes of determining when the system can be removed as provided in 40 CFR 60.752(b)(2)(v), using the equation presented in 40 CFR 60.754(b). **(40 CFR 60.754(b))**
5. If the permittee adds any liquids other than leachate in a controlled fashion to the waste mass and does not comply with the bioreactor requirements in 40 CFR 63.1947, §63.1955(c), and §63.1980(c) through (f), the permittee shall keep a record of calculations showing that the percent moisture by weight expected in waste mass to which liquid is added is less than 40 percent. The calculation must consider the waste mass, moisture content of the incoming waste, mass of the water added to the waste including leachate recirculation and other liquids addition, and precipitation, and the mass of water removed through leachate or other water losses. Moisture level sampling or mass balances calculations can be used. The permittee shall document the calculations and the basis of the assumptions. **(40 CFR 63.1980(g))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Condition 24 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be **postmarked or** received by 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 28 and 29 of Part A. Report shall be **postmarked or** received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit an equipment removal report to the appropriate AQD District Supervisor 30 days prior to removal or cessation of operation of the control equipment. **(40 CFR 60.757(e), 40 CFR 63.1955(a)(1))**
 - a. The equipment removal report shall contain all of the following items:
 - i. A copy of the closure report submitted in accordance with §60.757(d) **(40 CFR 60.757(e)(1)(i), 40 CFR 63.1955(a)(1))**
 - ii. Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year **(40 CFR 60.757(e)(1)(iii), 40 CFR 63.1955(a)(1))**
 - iii. A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired. **(40 CFR 60.757(e)(1)(ii), 40 CFR 63.1955(a)(1))**
 - b. The AQD may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a)(1))**
5. The permittee shall submit reports which shall be received by 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 report shall include the location of each exceedance of the 500 parts per million methane concentrations as provided above (in condition V.1.) and the concentration recorded at each location for which an exceedance was recorded in the previous month. The report shall also contain include information on all deviations that occurred during the 6-month reporting period. **(40 CFR 60.757(f)(5), 40 CFR 63.1955(a)(1), 40 CFR 63.1955(c), 40 CFR 63.1980(a))**
6. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD district office and it shall be delivered or postmarked by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))**

See Appendix 1-8

VIII. STACK/VENT RESTRICTION(S)

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The collection and control system may be capped or removed provided that all the following conditions are met:
 - a. The landfill shall be a closed landfill as defined in §60.751. A closure report shall be submitted to the appropriate AQD District Office as provided in §60.757(d) **(40 CFR 60.752(b)(2)(v)(A), 40 CFR 63.1955(a)(1))**
 - b. The collection and control system shall have been in operation a minimum of 15 years; and **(40 CFR 60.752(b)(2)(v)(B), 40 CFR 63.1955(a)(1))**
 - c. Following the procedures specified in §60.754(b), the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart. **(40 CFR 60.752(b)(2)(v)(C), 40 CFR 63.1955(a)(1))**
2. The permittee shall submit a closure report to the appropriate AQD District Office within 30 days of waste acceptance cessation. The AQD may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the AQD, no additional wastes may be placed into the landfill without filing a notification of modification as described under §60.7(a)(4). **(40 CFR 60.757(d), 40 CFR 63.1955(a)(1))**
3. If monitoring demonstrates that the operational requirements above in §60.753(b), (c), or (d) are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c). If corrective actions are taken as specified in condition §60.755, the monitored exceedance is not a violation of the operational requirements in this section. **(40 CFR 60.753(g), 40 CFR 63.1955(a)(1))**
4. For the approval of collection and control systems that includes any alternatives to the operational standards, test methods, procedures, compliance measures, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the permittee shall follow the procedures in 40 CFR 60.752(b)(2). **(40 CFR 63.1955(c))**
5. The permittee shall comply with the requirements of 40 CFR Part 60, Subpart WWW. **(40 CFR 63.1955(a)(1))**
6. The permittee shall comply with the requirements of 40 CFR Part 63, Subpart AAAA, including the general provisions specified in Table 1 and the SSM requirements in 40 CFR Part 63.6. **(40 CFR 63.1955, 40 CFR 63.6)**
7. The permittee is no longer required to comply with the requirements of Subpart AAAA of Part 63 when it is no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of Subpart WWW. **(40 CFR 63.1950)**

Footnotes:

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

**TABLE E-1.2 EUACTIVECOLL
 EMISSION UNIT CONDITIONS**

DESCRIPTION – This emission unit represents the active landfill gas collection system at the landfill that uses gas mover equipment to draw landfill gas from the wells and moves the gas to the control equipment.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT:

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour. **(40 CFR 60.753(e), 40 CFR 63.1955(a))**
2. The permittee shall operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:
 - a. 5 years or more if active; or **(40 CFR 60.753(a)(1), 40 CFR 63.1955(a))**
 - b. 2 years or more if closed or at final grade **(40 CFR 60.753(a)(2), 40 CFR 63.1955(a))**
3. The permittee shall operate the collection system with negative pressure at each wellhead except under the following conditions: **(40 CFR 60.753(b), 40 CFR 63.1955(a))**
 - a. A fire or increased well temperature. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the semi-annual reports as provided in §60.757(f)(1). **(40 CFR 60.753(b)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
 - b. Use of a geo-membrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan **(40 CFR 60.753(b)(2), 40 CFR 63.1955(a))**
 - c. A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the AQD **(40 CFR 60.753(b)(3), 40 CFR 63.1955(a))**
4. The permittee shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens. **(40 CFR 60.753(c), 40 CFR 63.1955(a))**

5. The permittee shall operate the installed collection system to comply with in accordance with the provisions in §60.753, §60.755, and §60.756. **(40 CFR 60.752(b)(2)(iv), 40 CFR 63.1955(a))**

IV. DESIGN/EQUIPMENT PARAMETERS

1. An active collection system shall:
 - a. Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment **(40 CFR 60.752(b)(2)(ii)(A)(1), 40 CFR 63.1955(a))**
 - b. The permittee shall place each well or design component in the collection system as specified in the approved design plan as provided in §60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of 5 years or more if active; or 2 years or more if closed at final grade. **(40 CFR 60.755(b), 40 CFR 60.752(b)(2)(ii)(A)(2), 40 CFR 63.1955(a))**
 - c. Collect gas at a sufficient extraction rate **(40 CFR 60.752(b)(2)(ii)(A)(3), 40 CFR 63.1955(a))**
 - d. Be designed to minimize off-site migration of subsurface gas. **(40 CFR 60.752(b)(2)(ii)(A)(4), 40 CFR 63.1955(a))**
2. The permittee shall design the collection system so that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). **(40 CFR 60.753(e), 40 CFR 63.1955(a))**
3. When adding gas collectors to the active gas collection system, a sufficient density of gas collectors shall be installed in compliance with §60.752(b)(2)(ii)(A)(2) (as specified above in condition IV.1.). The permittee shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the appropriate AQD District Office, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards in NSPS WWW. **(40 CFR 60.755(a)(2), 40 CFR 63.1955(a))**
 - a. If the permittee is seeking to demonstrate compliance through the use of a collection system not conforming to the specifications provided in §60.759, then the permittee shall provide information that satisfies the AQD District Supervisor as specified in §60.752(b)(2)(i)(C), demonstrating that off site migration is being controlled. **(40 CFR 60.755(a)(6), 40 CFR 63.1955(a))**
4. The permittee shall install a sampling port and a thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead. **(40 CFR 60.756(a), 40 CFR 63.1955(a))**
5. The permittee shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the appropriate AQD District Supervisor as provided in §60.752(b)(2)(i)(C) and (D):
 - a. The collection devices within the interior and along the perimeter areas shall be certified, by a professional engineer, to achieve comprehensive control of surface gas emissions. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat. **(40 CFR 60.759(a)(1), 40 CFR 63.1955(a))**
 - b. The sufficient density of gas collection devices determined in §60.759(a)(1) (above in condition IV.5.a.) shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior. **(40 CFR 60.759(a)(2), 40 CFR 63.1955(a))**
 - c. The placement of gas collection devices determined in §60.759(a)(1) (above in condition IV.5.a.) shall control all gas producing areas, except as provided in §60.759(a)(3) (i) and (ii) (below in conditions IV.5.c.i. and ii). **(40 CFR 60.759(a)(3), 40 CFR 63.1955(a))**
 - i. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the District Supervisor upon request. **(40 CFR 60.759(a)(3)(i), 40 CFR 63.1955(a))**

- ii. Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the AQD District Supervisor upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill. Emissions from each section shall be computed using the equation in Appendix 7. **(40 CFR 60.759(a)(3)(ii), 40 CFR 63.1955(a)) See Appendix 7**

6. The permittee shall construct the gas collection devices using the following equipment or procedures:
 - a. The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration. **(40 CFR 60.759(b)(1), 40 CFR 63.1955(a))**
 - b. Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations. **(40 CFR 60.759(b)(2), 40 CFR 63.1955(a))**
 - c. Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness. **(40 CFR 60.759(b)(3), 40 CFR 63.1955(a))**
7. The active gas collection system shall be designed convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures: **(40 CFR 60.759(c), 40 CFR 63.1955(a))**
 - a. For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in §60.759(c)(2) shall be used. **(40 CFR 60.759(c)(1), 40 CFR 63.1955(a))**
 - b. For new collection systems, the maximum flow rate shall be in accordance with §60.755(a)(1). **(40 CFR 60.759(c)(2), 40 CFR 63.1955(a))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §60.752(b)(2)(ii)(A)(3), the permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under §60.753(b) (above in conditions III.3.a-c). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the AQD for approval. **(40 CFR 60.755(a)(3), 40 CFR 60.756(a)(1), 40 CFR 63.1955(a))**

- a. If monitoring demonstrates that the negative pressure is not being met, then corrective action shall be taken as noted in §60.755(a)(3) (above in condition VI.1.). If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements. **(40 CFR 60.753(g), 40 CFR 63.1955(a))**
2. The permittee is not required to expand the gas collection system as required in §60.755(a)(3) (above in condition VI.1.) during the first 180 days after gas collection system startup. **(40 CFR 60.755(a)(4), 40 CFR 63.1955(a))**
3. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the permittee shall monitor each well monthly for temperature and oxygen as provided in §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the AQD for approval. **(40 CFR 60.755(a)(5), 40 CFR 60.756(a)(2), 40 CFR 60.756(a)(3), 40 CFR 63.1955(a))**
 - a. If monitoring demonstrates that the temperature and oxygen levels are not being met, then corrective action shall be taken as noted above and specified in §60.755(a)(5). If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements. **(40 CFR 60.753(g), 40 CFR 63.1955(a))**
 - b. Unless an alternative test method is established as allowed by §60.752(b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:
 - i. The span shall be set so that the regulatory limit is between 20 and 50 percent of the span **(40 CFR 60.753(c)(i), 40 CFR 63.1955(a))**
 - ii. A data recorder is not required **(40 CFR 60.753(c)(ii), 40 CFR 63.1955(a))**
 - iii. Only two calibration gases are required, a zero and span, and ambient air may be used as the span **(40 CFR 60.753(c)(iii), 40 CFR 63.1955(a))**
 - iv. A calibration error check is not required **(40 CFR 60.753(c)(iv), 40 CFR 63.1955(a))**
 - v. The allowable sample bias, zero drift, and calibration drift are ± 10 percent. **(40 CFR 60.753(c)(v), 40 CFR 63.1955(a))**
4. Except as provided in §60.752(b)(2)(i)(B), the permittee shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in §60.758(b)(1) through (b)(4) (below in conditions VI.4.a-b) as measured during the compliance determination. Records of the control device vendor specifications shall be maintained until removal. **(40 CFR 60.758(b), 40 CFR 63.1955(a))**
 - a. The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the appropriate AQD District Office. **(40 CFR 60.758(b)(1)(i), 40 CFR 63.1955(a))**
 - b. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in §60.758(a)(1). **(40 CFR 60.758(b)(1)(ii), 40 CFR 63.1955(a))**
5. Except as provided in §60.752(b)(2)(i)(B), the permittee shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector; and the installation date and location of all newly installed collectors as specified under §60.755(b) (above in condition IV.1.b.). **(40 CFR 60.758(d), 40 CFR 60.758(d)(1), 40 CFR 63.1955(a))**
6. The permittee shall keep readily accessible records of all collection and control system exceedances of the operational standards in §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance. **(40 CFR 60.758(e), 40 CFR 63.1955(a))**
7. The permittee shall maintain the following information:
 - a. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded

- from collection and the proposed sites for the future collection system expansion. **(40 CFR 60.757(g)(1), 40 CFR 63.1955(a))**
- b. The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based. **(40 CFR 60.757(g)(2), 40 CFR 63.1955(a))**
 - c. The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material. **(40 CFR 60.757(g)(3), 40 CFR 63.1955(a))**
 - d. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area. **(40 CFR 60.757(g)(4), 40 CFR 63.1955(a))**
 - e. The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill. **(40 CFR 60.757(g)(5), 40 CFR 63.1955(a))**
 - f. The provisions for the control of off-site migration. **(40 CFR 60.757(g)(6), 40 CFR 63.1955(a))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 21 and 22 of Part A. **(R 336.121(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be **postmarked or** received by 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. Report shall be **postmarked or** received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit to the appropriate AQD district office semi-annual reports for the gas collection system. Reports shall 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. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c). The semi-annual reports for the gas collection system shall include the following information: **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a), 40 CFR 63.1965)**
 - a. Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (above in conditions **VI.1. and VI.3.**). **(40 CFR 60.757(f)(1))**
 - b. All periods when the collection system was not operating in excess of 5 days. **(40 CFR 60.757(f)(4))**
 - c. The date of installation and the location of each well or collection system expansion added pursuant to §60.755(a)(3), §60.755(b), and §60.755(c)(4) conditions **IV.1.b., VI.1. and VI.3.** **(40 CFR 60.757(f)(6))**
 - d. Any deviations as listed in 40 CFR 63.1965. **(40 CFR 63.1965)**
 - e. The permittee shall record instances when a positive pressure occurs in efforts to avoid fire. **(40 CFR 60.753(b)(1))**
5. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD district office and it shall be delivered or postmarked by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))**

See Appendix 1-8

VIII. STACK/VENT RESTRICTION(S)

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENTS

1. If monitoring demonstrates that the operational requirements in §60.753(b), (c), or (d) (above in conditions **III.3. and III.4.**) are not met, corrective action shall be taken as specified above in §60.755(a)(3) through (5) or §60.755(c) (conditions **VI.1. and VI.3.**). If corrective actions are taken as specified in §60.755 (above in conditions **VI.1. and VI.3.**), the monitored exceedance is not a violation of the operational requirements in §60.753 (conditions **III.3. and III.4.**). **(40 CFR 60.753(g), 40 CFR 63.1955(a))**
2. The above provisions in §60.755 (conditions **IV.1.b., VI.1. and VI.3.**) apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems. **(40 CFR 60.755(e), 40 CFR 63.1955(a))**
3. If the permittee is seeking to install a collection system that does not meet the specifications in §60.759 (above in conditions **IV.5., IV.6., and IV.7.**) or is seeking to monitor alternative parameters to those required by §60.753 through §60.756, they shall provide information satisfactory to the appropriate AQD District Office as provided in §60.752(b)(2)(i)(B) and (C) describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The AQD may specify additional appropriate monitoring procedures. **(40 CFR 60.756(e), 40 CFR 63.1955(a))**
4. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for EUACTIVECOLL. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960)**

Footnotes:

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

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

**TABLE E-1.3 EUTREATMENTSYS
 EMISSION UNIT CONDITIONS**

DESCRIPTION – This emission unit treats landfill gas before it is used for subsequent use or sale. 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 the subsequent use, therefore guaranteeing that the intent of the destruction of the NMOC will be maintained.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Any emissions from any atmospheric vents or stacks associated with the treatments system shall be subject to §60.752(b)(2)(iii)(A) or (B).

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate the treatment system at all times when the collected gas is routed to the treatment system. (40 CFR 60.753(f))
2. The permittee shall operate the treatment system so that any emissions from any atmospheric vents or stacks associated with the treatment system shall be subject to §60.752(b)(2)(iii)(A) or (B). (40 CFR 60.752(b)(2)(iii)(C), 40 CFR 63.1955(a))

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The treatment system shall be designed as approved by AQD. (40 CFR 60.752(b)(2)(iii)(C), 40 CFR 60.752(b)(2)(i)(D), 40 CFR 63.1955(a))

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. (R 336.1213(3)(b)(ii))

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. (R 336.1213(3)(b)(ii))

1. The permittee shall keep up-to-date, readily accessible records of all control or treatment system exceedances of the operational standards in §60.753. **(40 CFR 60.758(e), 40 CFR 63.1955(a))**
2. The permittee shall keep records of all preventative maintenance performed in accordance with the preventative maintenance plan (PMP) prepared pursuant to condition IX.3. of this permit. **(R 336.1213(3))**

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. Report shall be **postmarked or** received by 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. Report shall be **postmarked or** received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit to the appropriate AQD District Office semi-annual reports for the landfill gas treatment system. The report shall be received by 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. **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
 - a. Value and length of time for exceedance of applicable parameters monitored under §60.756(b). **(40 CFR 60.757(f)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
 - 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 as specified under §60.756. **(40 CFR 60.757(f)(2), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
 - c. Description and duration of all periods when the treatment system was not operating for a period exceeding 1 hour and length of time the control device was not operating. **(40 CFR 60.757(f)(3), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
5. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD district office and it shall be delivered or postmarked by March 15, for the reporting period July 1 through December 31, and September 15 for reporting period January 1 to June 30. **(40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))**

See Appendix 1-8

VIII. STACK/VENT RESTRICTION(S)

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

1. The provisions of §60.755 apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 1 hour for the treatment system. **(40 CFR 60.755(e), 40 CFR 63.1955(a))**

2. The permittee shall have developed and implemented a written SSM plan according to the provision in 40 CFR 63.6(e)(3) for EUTREATMENTSYS. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960, (40 CFR 63.1965(c))**
3. The permittee shall have implemented a written preventative maintenance plan (PMP) for EUTREATMENTSYS. At a minimum, the plan shall include a schedule of maintenance activities consistent with manufactures recommendations, and the operating variables that will be monitored to detect a malfunction or failure. A copy of the PMP shall be maintained on site and made available upon request. **(R 336.1213(3), R 336.1911)**

See Appendix 1-9

Footnotes:

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

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

**TABLE E-1.4 EUOPENFLARE
 EMISSION UNIT CONDITIONS**

DESCRIPTION - Open flare is an open combustor without enclosure or shroud. The initial performance testing for the open flare has already been performed and therefore is not required by this table.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. The permittee shall operate the flare in accordance with §60.18. **(40 CFR 60.752(b)(2)(iii)(A), 40 CFR 63.1955(a))**
2. The permittee shall operate the flare at all times when the collected gas is routed to it. **(40 CFR 60.753(f), 40 CFR 63.1955(a))**
3. The flare shall be operated with no visible emissions, as determined by the methods specified in 40 CFR 60.18(f), except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. **(40 CFR 60.18(c)(1))**
4. The flare shall be operated with a flame present at all times, as determined by the methods specified in 40 CFR 60.18(f). **(40 CFR 60.18(c)(2))**
5. The flare shall be used only with the net heating value of the gas being combusted of 11.2 MJ/scm (300 Btu/scf) or greater if the flare is steam-assisted or air-assisted; or with the net heating value of the gas being combusted of 7.45 MJ/scm (200 Btu/scf) or greater if the flare is non-assisted. The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f). **(40 CFR 60.18(c)(3))**
6. Steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity, as determined by the methods specified in 40 CFR 60.18(f)(4), less than 18.3 m/sec (60 ft/sec), except as provided in 40 CFR 60.18(c)(4)(ii) and (iii). **(40 CFR 60.18(c)(4)(i))**
 - a. Steam-assisted and non-assisted flares designed for and operated with an exit velocity, equal to or greater than 18.3 m/sec (60 ft/sec) but less than 122 m/sec (400 ft/sec) are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 Btu/scf). **(40 CFR 60.18(c)(4)(ii))**

- b. Steam-assisted and non-assisted flares designed for and operated with an exit velocity, as determined by the methods specified in §60.18(f)(4) less than the velocity, V_{max} , as determined by the method specified in §60.18(f)(5), and less than 122 m/sec (400 ft/sec) are allowed. **(40 CFR 60.18(c)(4)(iii))**
7. Air-assisted flares shall be designed and operated with an exit velocity less than the velocity, V_{max} , as determined by the method specified in 40 CFR 60.18(f)(6). **(40 CFR 60.18(c)(5))**
8. Flares used to comply with provisions of 40 CFR Part 60 Subpart A shall be operated at all times when emissions may be vented to them. **(40 CFR 60.18(e))**
9. The permittee shall operate control system such that all collected gases are vented to a control system designed and operated in accordance with §60.752(b)(2)(iii). In event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within one hour. **(40 CFR 60.753(e), 40 CFR 63.1955(a))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. The permittee shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:
 - a. A heat sensing device, such as an ultraviolet beam sensor or thermocouple, at the pilot light or the flame itself to indicate the continuous presence of a flame. **(40 CFR 60.756(c)(1), 40 CFR 63.1955(a))**
2. Except as provided in §60.752(b)(2)(i)(B), the permittee shall keep up-to-date, readily accessible records for the life of the open flare of the data listed below in condition VI.3. as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the open flare vendor specifications shall be maintained until removal. **(40 CFR 60.758(b), 40 CFR 63.1955(a))**
3. The permittee shall maintain records regarding the flare type (i.e., steam-assisted, air-assisted, or non-assisted), all visible emission readings, heat content determination, flow rate or bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in §60.18; continuous records of the open flare pilot flame or open flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent. **(40 CFR 60.758(b)(4), 40 CFR 63.1955(a))**
4. Except as provided in §60.752(b)(2)(i)(B), the permittee shall keep readily accessible continuous records of the equipment operating parameters specified to be monitored above in condition VI.1., as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded. **(40 CFR 60.758(c))**
 - a. The permittee shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under condition VI.1.a., and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent. **(40 CFR 60.758(c)(4), 40 CFR 63.1955(a))**
5. The following records for the flare shall be maintained onsite:
 - a. Records indicating presence of flare pilot flame **(40 CFR 60.18(f)(2))**

- b. The net heating value of the gas being combusted in the flare shall be calculated and recorded using the equation provided in Appendix 7. **(40 CFR 60.18(f)(3))**
- c. The actual exit velocity of the flare shall be calculated and recorded by dividing the volumetric flow rate (in units of standard temperature and pressure), as determined by Federal Reference Test Methods 2, 2A, 2C, or 2D as appropriate, by the unobstructed (free) cross sectional area of the flare tip. **(40 CFR 60.18(f)(4))**
- d. The maximum permitted velocity, V_{max} , for flares complying with 40 CFR 60.18(c)(4)(iii) shall be calculated and recorded using the equation provided in Appendix 7. **(40 CFR 60.18(f)(5))**
- e. The maximum permitted velocity, V_{max} , for air-assisted flares shall be calculated and recorded using the equation provided in Appendix 7. **(40 CFR 60.18(f)(6))**

See Appendices 7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Condition 24 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be **postmarked or** received by 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. Report shall be **postmarked or** received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit to the appropriate AQD District Office semi-annual reports for the gas collection system. Reports shall be received by 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. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c). **(40 CFR 60.757(f), 40 CFR 63.1980(a), 40 CFR 63.1955(a))** The semi-annual report shall contain:
 - a. Value and length of time for exceedance of applicable parameters monitored under §60.756(b). **(40 CFR 60.757(f)(1), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
 - b. Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756. **(40 CFR 60.757(f)(2), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
 - c. Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating. **(40 CFR 60.757(f)(3), 40 CFR 63.1980(a), 40 CFR 63.1955(a))**
5. If the landfill is controlled, the permittee shall submit a closure report to the appropriate AQD District Supervisor within 30 days of waste acceptance cessation. The AQD may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the appropriate AQD District Supervisor, no additional wastes may be placed into the landfill without filing a notification of modification as described under 40 CFR 60.7(a)(4). **(40 CFR 60.757(d), 40 CFR 63.1955(a))**
6. The permittee shall submit an equipment removal report to the AQD 30 days prior to removal or cessation of operation of the open flare. **(40 CFR 60.757(e))**
 - a. The equipment removal report shall contain all of the following items:
 - i. A copy of the closure report submitted in accordance with §60.757 **(40 CFR 60.757(e)(1)(i), 40 CFR 63.1955(a))**
 - ii. A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired **(40 CFR 60.757(e)(1)(ii), 40 CFR 63.1955(a))**

- iii. Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year. **(40 CFR 60.757(e)(1)(iii), 40 CFR 63.1955(a))**
- b. Additional information may be requested as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met. **(40 CFR 60.757(e)(2), 40 CFR 63.1955(a))**
- 7. The permittee shall submit the startup, shutdown, and malfunction (SSM) report to the appropriate AQD district office and it shall be delivered or postmarked by March 15 for reporting period July 1 to December 31 and September 15 for reporting period January 1 to June 30. **(40 CFR 63.10(a)(5), 40 CFR 63.10(d)(5))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

- 1. The provisions of §60.755 apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 1 hour for the treatment system. **(40 CFR 60.755(e), 40 CFR 63.1955(a))**
- 2. Compliance of 40 CFR Part 63, Part AAAA is determined in the same way it is determined for 40 CFR Part 60, subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data collected above in condition VI.1. are used to demonstrate compliance with the operating conditions for the open flare. The permittee shall have developed and implemented a written SSM for EUOPENFLARE. A copy of the SSM plan shall be maintained on site. **(40 CFR 63.1960)**

Footnotes:

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

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

TABLE E-1.5 EUASBESTOS EMISSION UNIT CONDITIONS

DESCRIPTION: This landfill is actively or has accepted asbestos waste in the past.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT - NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. If the landfill accepts asbestos-containing waste materials from a source covered under 40 CFR 61.149, 40 CFR 61.150, or 40 CFR 61.155, the permittee shall meet the following operational requirements: **(40 CFR 61.154)**
 - a. Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of 40 CFR 61.154(c) or (d) must be met. **(40 CFR 61.154(a))**
 - b. Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of 40 CFR 61.154(c)(1) must be met. **(40 CFR 61.154(b))**
 - i. Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. **(40 CFR 61.154(b)(1))** The warning signs must:
 - A. Be posted in such a manner and location that a person can easily read the legend **(40 CFR 61.154(b)(1)(i))**
 - B. Conform to the requirements of 51 cm by 36cm (20 inches by 14 inches) upright format signs specified in 29 CFR 1910.145(d)(4) and 40 CFR 61.154(b)(1) **(40 CFR 61.154(b)(1)(ii))**
 - C. The permittee shall display the legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in 40 CFR 61.154(b)(1). Spacing between any two lines must be at least equal to the height of the upper of the two lines. **(40 CFR 61.154(b)(1)(iii))**
 - i. The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public. **(40 CFR 61.154(b)(2))**
 - ii. Upon request and supply of appropriate information, the appropriate AQD District Supervisor will determine whether a fence or a natural barrier adequately deters access by the general public. **(40 CFR 61.154(b)(3))**

- c. Rather than meet the no visible emission requirement of 40 CFR 61.154(a), at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall: **(40 CFR 61.154(c))**
 - i. Be covered with at least 15 centimeters (6 inches) of compacted non-asbestos-containing material. **(40 CFR 61.154(c)(1))** or
 - ii. Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the appropriate AQD District Supervisor. For purposes of 40 CFR 61.154(c)(2), any used, spent, or other waste oil is not considered a dust suppression agent. **(40 CFR 61.154(c)(2))**
- d. Rather than meet the no visible emission requirement of 40 CFR 61.154(a), use an alternative emissions control method that has received prior written approval by the appropriate AQD District Supervisor according to the procedures described in 40 CFR 61.149(c)(2). **(40 CFR 61.154(d))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The placement of gas collection devices determined in paragraph §60.759(a)(1) shall control all gas producing areas, except as provided by §60.759 (a)(3)(i) and (a)(3)(ii). **(40 CFR 60.759(a)(3))**
 - a. Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the AQD upon request. **(40 CFR 60.759(a)(3)(i))**

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. For all asbestos-containing waste material received, the permittee of the active waste disposal site shall:
 - a. Maintain waste shipment records that include the following information: **(40 CFR 61.154(e)(1))**
 - i. The name, address, and telephone number of the waste generator. **(40 CFR 61.154(e)(1)(i))**
 - ii. The name, address, and telephone number of the transporter(s). **(40 CFR 61.154(e)(1)(ii))**
 - iii. The quantity of the asbestos-containing waste material in cubic meters (cubic yards). **(40 CFR 61.154(e)(1)(iii))**
 - iv. The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report. **(40 CFR 61.154(e)(1)(iv))**
 - v. The date of the receipt. **(40 CFR 61.154(e)(1)(v))**
 - b. As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator. **(40 CFR 61.154(e)(2))**
 - c. Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record) **(40 CFR 61.154(e)(3))**

2. The permittee shall maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area storage. **(40 CFR 61.154(f))**
3. The permittee shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii). **(40 CFR 60.758(d)(2))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 24 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be **postmarked or** received by 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. Report shall be **postmarked or** received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**
4. The permittee shall submit to the appropriate AQD District Supervisor, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities. **(40 CFR 61.154(h))**
5. The permittee shall furnish upon request, and make available during normal business hours for inspection by the AQD, all records required by 40 CFR Part 61. **(40 CFR 61.154(i))**
6. Notify the appropriate AQD District Office in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the appropriate AQD District Office at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. **(40 CFR 61.154(j))**
 Include the following information in the notice:
 - a. Scheduled starting and completion dates. **(40 CFR 61.154(j)(1))**
 - b. Reason for disturbing the waste. **(40 CFR 61.154(j)(2))**
 - c. Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the AQD or may require changes in the emission control procedures to be used. **(40 CFR 61.154(j)(3))**
 - d. Location of any temporary storage site and the final disposal site. **(40 CFR 61.154(j)(4))**

See Appendix 1-8

VIII. STACK/VENT RESTRICTION(S)

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
NA	NA	NA	NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

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

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

D- 1. FLEXIBLE GROUP CONDITIONS

Part D outlines 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
FGCOLDCLEANERS	This emission unit consists of one or more small coldcleaners/degreasers, which are exempt from the requirements of R336.1201 and which were installed after July 1, 1979.	EUCOLDCLEANER

D- 1. FLEXIBLE GROUP CONDITIONS

Part D outlines 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
FGCOLDCLEANERS	This emission unit consists of one or more small coldcleaners/degreasers, which are exempt from the requirements of R336.1201 and which were installed after July 1, 1979.	EUCOLDCLEANER

TABLE F-1.1 FGCOLDCLEANERS FLEXIBLE GROUP CONDITIONS

DESCRIPTION

Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

Emission Unit: EUCOLDCLEANER

POLLUTION CONTROL EQUIPMENT - NA

I. EMISSION LIMIT(S)

NA

II. MATERIAL LIMIT(S)

1. The permittee shall not use cleaning solvents containing more than 5 percent by weight of the following halogenated compounds: methylene chloride, perchloroethylene, trichloroethylene, 1,1,1-trichloroethane, carbon tetrachloride, chloroform, or any combination thereof. **(R 336.1213(2))**

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Cleaned parts shall be drained for no less than 15 seconds or until dripping ceases. Alternatively, the cold-cleaned parts may be wiped dry using rags or towels such that the solvent dripping does not occur and the solvent associated with the potential drips from the cold-cleaned parts does not evaporate to ambient air. The rags or towels shall be stored at all times in a leak-proof and air-tight closed container and disposed of in accordance with waste management laws. **(R 336.1611(2)(b), R 336.1707(3)(b))**
2. The permittee shall perform routine maintenance on each cold cleaner as recommended by the manufacturer. **(R 336.1213(3))**

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. The cold cleaner must meet one of the following design requirements:
 - a. The air/vapor interface of the cold cleaner is no more than 10 square feet. **(R 336.1281(h))**
 - b. The cold cleaner is used for cleaning metal parts and the emissions are released to the general in-plant environment. **(R 336.1285(r)(iv))**
2. The cold cleaner shall be equipped with a device for draining cleaned parts. Alternatively, the cold-cleaned parts may be wiped dry using rags or towels such that the solvent dripping does not occur and the solvent associated with the potential drips from the cold-cleaned parts does not evaporate to ambient air. The rags or towels shall be stored at all times in a leak-proof and air-tight closed container and disposed of in accordance with waste management laws. **(R 336.1611(2)(b), R 336.1707(3)(b))**
3. All new and existing cold cleaners shall be equipped with a cover and the cover shall be closed whenever parts are not being handled in the cold cleaner. **(R 336.1611(2)(a), R 336.1707(3)(a))**

4. The cover of a new cold cleaner shall be mechanically assisted if the Reid vapor pressure of the solvent is more than 0.3 psia or if the solvent is agitated or heated. **(R 336.1707(3)(a))**
5. If the Reid vapor pressure of any solvent used in a new cold cleaner is greater than 0.6 psia; or, if any solvent used in a new cold cleaner is heated above 120 degrees Fahrenheit, then the cold cleaner must comply with at least one of the following provisions:
 - a. The cold cleaner must be designed such that the ratio of the freeboard height to the width of the cleaner is equal to or greater than 0.7. **(R 336.1707(2)(a))**
 - b. The solvent bath must be covered with water if the solvent is insoluble and has a specific gravity of more than 1.0. **(R 336.1707(2)(b))**
 - c. The cold cleaner must be controlled by a carbon adsorption system, condensation system, or other method of equivalent control approved by the AQD. **(R 336.1707(2)(c))**

V. TESTING/SAMPLING

NA

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. **(R 336.1213(3)(b)(ii))**

1. For each new cold cleaner in which the solvent is heated, the solvent temperature shall be monitored and recorded at least once each calendar week during routine operating conditions. **(R 336.1213(3))**
2. The permittee shall maintain the following information, in a tabular form, on file for each cold cleaner: **(R 336.1213(3))**
 - a. A serial number, model number, or other unique identifier for each cold cleaner.
 - b. The date the unit was installed, manufactured or that it commenced operation.
 - c. The air/vapor interface area for any unit claimed to be exempt under Rule 281(h).
 - d. The applicable Rule 201 exemption.
 - e. The Reid vapor pressure of each solvent used.
 - f. If applicable, the option chosen to comply with Rule 707(2).
3. The permittee shall maintain written operating procedures for each cold cleaner. These written procedures shall be posted in an accessible, conspicuous location near each cold cleaner. **(R 336.1611(3), R 336.1707(4))**
4. As noted in Rule 611(2)(c) and Rule 707(3)(c), if applicable, an initial demonstration that the waste solvent is a safety hazard shall be made prior to storage in non-closed containers. If the waste solvent is a safety hazard and is stored in non-closed containers, verification that the waste solvent is disposed of so that not more than 20%, by weight, is allowed to evaporate into the atmosphere shall be made on a monthly basis. **(R 336.1213(3), R 336.1611(2)(c), R 336.1707(3)(c))**

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 24 of Part A. **(R 336.1213(3)(c)(ii))**

2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be **postmarked or** received by 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. Report shall be **postmarked or** received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 8

VIII. STACK/VENT RESTRICTION(S)

NA

IX. OTHER REQUIREMENT(S)

NA

Footnotes:

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

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

G-1. Non-Applicable Requirements

At the time of RO Permit issuance, the AQD has determined that no non-applicable requirements have been identified for incorporation into the permit shield provision set forth in Part A (Conditions 30 through 33) of this RO Permit pursuant to R 336.1213(6)(a)(ii).

Appendices

Appendix 1-1. Abbreviations Used in This Permit

The following is an alphabetical listing of all abbreviations/acronyms used in this RO Permit.

A. abbreviations/acronyms

AP-42	Compilation of Air Pollutant Emission Factors
AQD	Air Quality Division
BDT	Best demonstrated technology
BID	Background information document
CAA	Federal Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DE	District Engineer
DEQ	Michigan Department of Environmental Quality
EPA	United States Environmental Protection Agency
EG	Emission Guidelines or Emission Unit/Process Group
GAR	Generally Applicable Requirement
HAP	Hazardous air pollutant
ID	Identification number
LFG	Landfill gas
MDEQ	Michigan Department of Environmental Quality
MSW	Municipal solid waste
MVAC	Motor vehicle air conditioner
NESHAP	National Emission Standards for Hazardous Air Pollutants
NMOC	Nonmethane organic compounds
NSPS	New Source Performance Standards
NSR	New source review
OMB	Office of Management and Budget
PM	Particulate matter
PM10	Particulate matter less than 10 microns in size
PSD	Prevention of significant deterioration
PTE	Potential to emit
PTI	Permit to install
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
RO	Renewable Operating
SRN	State Registration Number
VE	Visible emissions
VOC	Volatile organic compounds

B. Measurement Abbreviations

BTU	British thermal units
°C	degrees Celsius
dscf	dry standard cubic feet
°F	degrees Fahrenheit
J/scm	joules per standard cubic meter
m	meters
Mg	megagrams
mm	millimeters
MW	megawatts
pph	pounds per hour

ppm	parts per million
ppmv	parts per million by volume
scf	standard cubic feet
sec	seconds
tpy	tons per year
yr	years

C. Conversion Factors

1 meter = 3.2808 feet
1 megagram = 1.1023 tons = 2204.6 pounds
1 cubic meter = 35.288 cubic feet = 1.3069 cubic yards
1 cubic meter = 0.0008101 acre-feet
degrees Celsius = (degrees Fahrenheit - 32)/1.8

Appendix 1-2. Schedule of Compliance

The permittee has certified that this source is in compliance with all applicable requirements as of the date of issuance of this RO Permit and the permittee shall continue to comply with all applicable requirements listed in this RO Permit. A detailed Schedule of Compliance is not required. (R 336.1213(4)(a), R 336.1119(a)(ii))

The permittee has certified that with respect to the future applicable requirement(s) identified in Table(s) E1.1 through E1.3 and F1.1 through F1.3, where the effective compliance date(s) are after the date of issuance and before the date of expiration of this RO Permit, the source will meet the requirement(s) on a timely basis unless the underlying applicable requirement requires a more detailed schedule. (R 336.1119(a)(iii), R 336.1213(4)(a))

Appendix 1-3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Requirement Tables. Therefore, this appendix is not applicable.

The applicability date for NSPS monitoring requirements is March 18, 2002 (18 months following submittal of the Landfill Collection and Control System Design Plan)

Appendix 1-4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Requirement Tables. Therefore, this appendix is not applicable.

The applicability date for NSPS recordkeeping requirements is March 18, 2002 (18 months following submittal of the Landfill Collection and Control System Design Plan)

Appendix 1-5. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Requirement Tables. Therefore, this appendix is not applicable.

Appendix 1-6. Permits to Install/Operate

The following table lists the Permits to Install and/or Operate which relate to the identified Emission Units or Flexible Groupings:

Permit to Install/Operate Number	Description of Equipment	Corresponding Emission Unit or Flexible Grouping ID
NA	NA	NA

Appendix 1-7. Emission Calculations

Specific emission calculations to be used with monitoring, testing or recordkeeping data are detailed in the appropriate Requirement Tables. Therefore, this appendix is not applicable.

Appendix 1-8. Reporting

A. Annual and Deviation Certification Reporting

The permittee shall use the DEQ Report Certification form (EQP 5736) and DEQ Deviation Report form (EQP 5737) for the annual and deviation certification reporting referenced in Section IV of the Requirement Tables. Alternative formats must meet the provisions of R 336.1213(4)(c) and R 336.1213(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 Requirement Tables. Therefore, Part B of this appendix is not applicable.

C. NSPS Compliance Milestones

June 18, 1999: The Pine Tree Acres Landfill became subject to the NSPS 40 CFR Part 60, Subpart WWW after being issued a Solid Waste Disposal Area Construction Permit to increase the landfill's design capacity.

September 16, 1999: The company submitted an Initial Design Capacity and Tier 1 NMOC emission rate report indicating greater than 50 megagrams (Mg) per year of uncontrolled NMOC emissions.

September 18, 2000: The company submitted a Landfill Gas Collection and Control System Design Plan (LGCCS).

March 16, 2002: The LGCCS is required to be installed and operational within 30 months following the NMOC emission rate report indicating equal to or greater than 50 megagrams (Mg) per year (55 tons per year) of uncontrolled NMOC emissions.

September 18, 2002: The NSPS performance testing of the LGCCS is to be completed and the results report and initial ANNUAL compliance report are to be submitted within 6 months following the installation of the collection and control system (within 36 months following the NMOC emission rate report indicating greater than 50 tons per year of uncontrolled NMOC emissions).

Appendix 1-9. Preventative Maintenance Plan/Corrective Action Plan

Permittee shall implement and maintain a written preventative maintenance plan (PMP) for EUTREATMENTSYS.

The plan must be submitted to the AQD Southeast Michigan District Supervisor for approval. A copy of the PMP shall be maintained on site and made available upon request. Any modifications to the plan shall be submitted to the AQD District Supervisor for approval, and are subject to review by the AQD.

**STATE OF MICHIGAN
RENEWABLE OPERATING PERMIT**

SECTION 2

PINE TREE ACRES INC. (LANDFILL)
AND
SUMPTER ENERGY ASSOCIATES (LANDFILL GAS CONTROL SYSTEM)

SRN: N5984

LOCATED AT

36600 29 MILE ROAD
LENOX TOWNSHIP, MI 48062

Permit Number: 199600384

Effective Date: December 12, 2002

Revision Date: March 2, 2006

Expiration Date: December 12, 2007

A-2. General Requirements

For the purpose of this Renewable Operating (RO) Permit, the **permittee** is defined as any person who owns or operates an emission unit/process group at a stationary source for which a RO Permit has been issued. This permit is issued to **Pine Tree Acres Inc. (Landfill) and Sumpter Energy Associates (Landfill gas control)**, hereinafter the permittee for this RO Permit. The department is defined in R 336.1104(d) as the Director of the Department of Environmental Quality or his or her designee.

Enforceability

All conditions in this permit are both federally enforceable and state enforceable unless otherwise noted. Those requirements which are enforceable by the state only are designated by an asterisk. (R 336.1213(5))

General Conditions

1. A challenge by any person, the Administrator of the EPA, or the department to a particular condition or a part of this RO Permit shall not set aside, delay, stay, or in any way affect the applicability or enforceability of any other condition or part of this RO Permit. (R 336.1213(1)(f))
2. Except as provided in Subrules 2, 3, and 4 of R 336.1301, 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 R 336.1301(1)(a) or (b) unless otherwise specified in this RO Permit. The grading of visible emissions shall be determined in accordance with R 336.1303. (R 336.1301(1) in pertinent part):
 - 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.
3. 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 R 336.1370(2). (R 336.1370)
4. 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)
5. 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 R 336.2001 and R 336.2003, under any of the conditions listed in R 336.2001(1). (R 336.2001)
6. A change in ownership or operational control of a stationary source covered by a RO Permit shall be made pursuant to R 336.1216(1). (R 336.1219(3))
7. 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. (R 336.1901(a)) *
 - b) Unreasonable interference with the comfortable enjoyment of life and property. (R 336.1901 (b)) *
8. The permittee shall comply with all conditions of this RO Permit. Any permit noncompliance constitutes a violation of Act 451 of 1994, as amended, Part 55, (Air Pollution Control) and is grounds for enforcement action, for permit revocation or revision, or for denial of the renewal of the RO Permit. All terms and conditions of this RO Permit that are designated as federally enforceable are enforceable by the Administrator of the EPA and by citizens under the provisions of the CAA. Any terms and conditions based on applicable requirements,

which are designated as "state only", are not enforceable by the EPA or citizens pursuant to the CAA.
(R 336.1213(1)(a))

9. 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 RO Permit.
(R 336.1213(1)(b))
10. This RO Permit 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 permit condition. Pursuant to R 336.1215 and R 336.1216, the permittee may make changes at a stationary source at his/her own risk. (R 336.1213(1)(c))
11. 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 RO Permit or to determine compliance with this RO Permit. Upon request, a person shall also furnish to the department copies of any records that are required to be kept as a term or condition of this RO Permit. (R 336.1213(1)(e))
12. 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 permit.
 - b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit.
 - c) Inspect, at reasonable times, any of the following:
 - i) Any stationary source.
 - ii) Any process.
 - iii) Any process equipment, including monitoring and air pollution control equipment.
 - iv) Any work practices or operations regulated or required under the Renewable Operating Permit.
 - d) As authorized by Section 5526 of the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.
13. The permittee shall pay fees consistent with the fee schedule and requirements pursuant to Part 5522 of Act 451, P.A. 1994. (R 336.1213(1)(g))
14. This RO Permit does not convey any property rights or any exclusive privilege. (R 336.1213(1)(h))
15. For renewal of this RO Permit, 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 RO Permit. (R 336.1210(7))
16. For modifications to this RO Permit, an administratively complete application shall be considered timely if it is received by the department in accordance with the time frames specified in R 336.1216. (R 336.1210(9))
17. For changes to any process or process equipment covered by this RO Permit that do not require a revision of the RO Permit pursuant to R 336.1216, the permittee must comply with R 336.1215. (R 336.1215 and R 336.1216)
18. A RO Permit 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 permit, but not if the effective date of the new applicable requirement is later than the RO Permit 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 the permit contains a material mistake, that information required by any applicable requirement was omitted, or that inaccurate statements were made in establishing emission limits or the terms or conditions of the permit. (R 336.1217(2)(a)(iii))
 - d) If the department determines the permit must be revised to ensure compliance with the applicable requirements. (R 336.1217(2)(a)(iv))
19. 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) and R 336.2003(1))
20. Any required test results shall be submitted to the AQD in the format prescribed by the applicable reference test method within 60 days following the last date of the test. (R 336.2001(4))

Recordkeeping and Reporting

21. Records of any periodic emission or parametric monitoring required by Parts B, E and F and Appendices of this RO Permit, shall include the following information specified in R 336.1213(3)(b)(i), where appropriate (R 336.1213(3)(b)):
- a) The date, location, time, and method of sampling or measurements.
 - b) The dates 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.
22. 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 RO Permit. (R 336.1213(1)(e) and R 336.1213(3)(b)(ii))
23. Semiannually for the term of the permit as detailed in the requirement tables, or more frequently if specified in an applicable requirement in this RO Permit, the permittee shall submit certified reports of any required monitoring to the appropriate District Office of the AQD. All instances of deviations from permit requirements during the reporting period shall be clearly identified in the reports. (R 336.1213(3)(c)(i))
24. The permittee shall promptly report any deviations from permit requirements and certify the reports. The prompt reporting of deviations from permit requirements is defined in R 336.1213(3)(c)(ii) as follows, unless otherwise described in this RO Permit (R 336.1213(3)(c)):
- a) For deviations that exceed the emissions allowed under the RO Permit, prompt reporting means reporting consistent with the requirements of R 336.1912 as detailed in Condition 26. All reports submitted pursuant to this paragraph shall be promptly certified as specified in R 336.1213(3)(c)(iii).
 - b) For deviations which exceed the emissions allowed under the RO Permit and which are not reported pursuant to R 336.1912 due to the duration of the deviation, prompt reporting means the reporting of all deviations in the semiannual reports required by R 336.1213(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 RO Permit, prompt reporting means the reporting of all deviations in the semiannual reports required by R 336.1213(3)(c)(i). The report shall describe the reasons for each deviation and the actions taken to minimize or correct each deviation.

For reports required pursuant to R 336.1213(3)(c)(ii), prompt certification of the reports is described in R 336.1213(3)(c)(iii) as either of the following (R 336.1213(3)(c)):

- d) 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.
 - e) 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 permit were submitted to the department pursuant to R 336.1213(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 R 336.1213(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.
25. Except for the alternate certification schedule provided in R 336.1213(3)(c)(iii)(B), any document required to be submitted to the department as a term or condition of this RO Permit shall contain a 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))
26. 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 R 336.1912, to the appropriate District Office of the AQD. 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 R 336.1912, must be submitted to the appropriate 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 R 336.1912(5) and shall be certified by a Responsible Official in a manner consistent with the Clean Air Act. (R 336.1912)
27. 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 R 336.1212(7) for each emission unit/process group utilizing the emissions inventory forms provided by the department. (R 336.1212(7))

Compliance Reporting and Certification

28. A Responsible Official shall certify to the appropriate District Office of the AQD and the EPA that the stationary source is and has been in compliance with all terms and conditions contained in the RO Permit except for deviations that have been or are being reported to the appropriate District Office of the AQD pursuant to Condition 24. This certification shall include all the information specified in R 336.1213(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 EPA address is: US EPA, Air Compliance Data - Michigan, Air and Radiation Division, 77 West Jackson Boulevard, Chicago, IL, 60604. (R 336.1213(4)(c))
29. The certification of compliance shall be submitted annually for the term of this RO Permit as detailed in the requirement tables, or more frequently if specified in an applicable requirement or in this RO Permit. (R 336.1213(4)(c))

Permit Shield

30. Compliance with the conditions of the RO Permit shall be considered compliance with any applicable requirements as of the date of RO issuance, if either of the following provisions is satisfied (R 336.1213(6)(a)(i) and (ii)):
- The applicable requirements are included and are specifically identified in the permit.
 - 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 G of this RO Permit have been identified as non-applicable to this RO Permit and are included in the permit shield.
31. Nothing in this RO Permit shall alter or affect any of the following:
- The provisions of Section 303 of the CAA, emergency orders, including the authority of the EPA under Section 303 of the Act. (R 336.1213(6)(b)(i))
 - The liability of the owner or operator of this source for any violation of applicable requirements prior to or at the time of this permit issuance. (R 336.1213(6)(b)(ii))
 - The applicable requirements of the acid rain program, consistent with Section 408(a) of the CAA. (R 336.1213(6)(b)(iii))
 - The ability of the EPA to obtain information from a source pursuant to Section 114 of the CAA. (R 336.1213(6)(b)(iv))
32. The permit shield shall not apply to provisions incorporated into this permit through procedures for any of the following:
- Changes for operational flexibility made pursuant to R 336.1215. (R 336.1215(5))
 - Administrative amendments made pursuant to R 336.1216(1)(a)(i-iv) until the changes have been approved by the department. (R 336.1216(1)(b)(iii))
 - Administrative amendments made pursuant to R 336.1216(1)(a)(v) until the amendment has been approved by the department. (R 336.1216(1)(c)(iii))
 - Minor permit modifications made pursuant to R 336.1216(2). (R 336.1216(2)(f))
 - State-only modifications made pursuant to R 336.1216(4) until the changes have been approved by the department. (R 336.1216(4)(e))
33. Expiration of this RO Permit 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 RO Permit, but the department fails to take final action before the end of the permit term, the existing RO Permit does not expire until the renewal is issued or denied, and the permit shield shall extend beyond the original permit term until the department takes final action. (R 336.1217(1)(c), R 336.1217(1)(a))

Stratospheric Ozone Protection

34. If the permittee is subject to 40 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.
35. 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, Sub-part 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 HCFC-22 refrigerant.

Risk Management Plan

36. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall register and submit to the EPA the required data related to the risk management plan (RMP) for reducing the probability of accidental releases of any regulated substances listed pursuant to Section 112(r)(3) of the CAA as amended in 68.130. The list of substances, threshold quantities, and accident prevention regulations promulgated under Part 68 do not limit in any way the general duty provisions under Section 112(r)(1).
37. If subject to Section 112(r) of the CAA and 40 CFR Part 68, the permittee shall comply with the requirements of Part 68 no later than the latest of the following dates as provided in 68.10(a):
 - a) June 21, 1999,
 - b) Three years after the date on which a regulated substance is first listed under 68.130, or
 - c) The date on which a regulated substance is first present above a threshold quantity in a process.
38. 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.
39. 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 Conditions 28 and 29 of this RO Permit. (40 CFR Part 68)

B-2. SOURCE-WIDE REQUIREMENTS

At the time of RO permit issuance, the AQD has determined that there are no additional specific source-wide applicable requirements which apply to all emission unit/process groups at this stationary source. Therefore, the Permittee is subject to the General Requirements in Part A and any other terms and conditions contained in this RO permit.

C- 2. EMISSION UNIT 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
EUICENGINE1	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Catepillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr.	07/24/2001	FGENGINES
EUICENGINE2	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Catepillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr.	07/24/2001	FGENGINES
EUICENGINE3	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Catepillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr.	07/24/2001	FGENGINES
EUICENGINE4	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Catepillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr.	07/24/2001	FGENGINES
EUICENGINE5	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Catepillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr.	07/24/2001	FGENGINES
EUICENGINE6	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Catepillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr.	12/31/2003	FGENGINES
EUICENGINE7	Reciprocating internal combustion engine. Landfill gas fired internal combustion engines (ICE) manufactured by Catepillar Inc. (Model No. 3516) and rated at 1138 HP and 8.6 MMBtu/hr.	12/31/2003	FGENGINES

D- 2. FLEXIBLE GROUP CONDITIONS

Part D outlines 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
FGENGINES	Reciprocating internal combustion engines (RICEs) that use landfill gas as fuel for the generation of electricity for the power grid.	EUCENGINE1 THROUGH EUCENGINE7

**TABLE F-2.1 FGENGINES (with treatment system)
 FLEXIBLE GROUP CONDITIONS**

DESCRIPTION – Internal Combustion Engines - an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. Seven (7) Landfill gas fired internal combustion engines (ICE) manufactured by Caterpillar Inc. (Model No. 3516). Each ICE has a maximum power generation rating of 1,138 brake horsepower and a maximum operating fuel requirement of approximately 8.6 million Btu. This emission unit is for the ICEs and only includes requirements that were the result of a NSR permit. Since there is a treatment system before the engine plant that is being operated to ensure good combustion of the landfill gas in the engine plant, no NSPS WWW requirements need to be applied to these engines.

Emission Units: EUCENGINE1 THROUGH EUCENGINE7

POLLUTION CONTROL EQUIPMENT – NA

I. EMISSION LIMIT(S)

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
Nitrogen Oxides (NOX)	1.) 35.2	pounds per hour	FGENGINES	Section V and Section VI	R 336.1201(3)
	2.) 154.2	tons per year based on a 12-month rolling time period			
Carbon Monoxide (CO)	1.) 51.1	pounds per hour	FGENGINES	Section V and Section VI	R 336.1201(3)
	2.) 223.8	tons per year based on a 12-month rolling time period			
Hydrogen Chloride (HCL)	1.) 0.7	pounds per hour	FGENGINES	Section V and Section VI	R 336.1224(1) ¹ R 336.1225
	2.) 3.0	tons per year based on a 12-month rolling time period			
Non Methane Organic Compound (NMOC)	1.) 8.8	pounds per hour	FGENGINES	Section V and Section VI	R 336.1702(a)
	2.) 38.5	tons per year based on a 12-month rolling time period			

II. MATERIAL LIMIT(S)

Material	Limit	Time Period/ Operating Scenario	Equipment	Monitoring/ Testing Method	Underlying Applicable Requirements
1.NA	NA	NA	NA	NA	NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. Permittee shall operate EGICENGINE1 through EGICENGINE7 within the electrical output (kW) ranges, and air/fuel mixture temperature (for NOx compliance) determined during the most recent performance test. (R 336.1213(3))

IV. DESIGN/EQUIPMENT PARAMETER(S)

1. NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of 5 years. (R 336.1213(3)(b)(ii))

1. The permittee shall determine, by sampling on an annual basis, the Chlorine Compounds present in the landfill gas (LFG) stream influent to EGICENGINE1 through EGICENGINE7. Sampling shall be done by Method 18, or alternate method as approved by the AQD District Supervisor. (R336.1213(3), R336.2001, R336.2003 and 336.2004)
2. The permittee shall calculate an HCl emission factor based on the concentration of chlorinated compounds in the LFG and the measured HCl emission rate (during the most recent performance test) and demonstrate compliance with the HCl emission limit on an annual basis by sampling and analysis of LFG. (R336.2001, 336.2003 and 336.2004)
3. Each time the LFG is analyzed to determine the chlorinated compound content, the permittee shall recalculate the emission factor allowed under Appendix 2-7. (R 336.1213(3))
4. Not less than 30 days prior to sampling, a complete sampling plan must be submitted to the AQD including the method or methods that will be used to determine the chlorinated compound composition of the LFG. (R 336.1213(3))
5. Not less than 7 days before sampling is conducted, the permittee shall notify the AQD District Supervisor in writing of the time and place of the sampling event and who shall conduct them. (R336.2001(3))

See Appendix 2-5

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of 5 years. (R 336.1213(3)(b)(ii))

1. The permittee shall continuously monitor and record the following parameters:
 - a. Electrical output (kW) of each generator driven by an ICE,
 - b. Hours of operation of each generator driven by an ICE,
 (R336.1201 (3))
2. The permittee shall measure and record the heating value of the landfill gas used as fuel in the ICEs on a weekly basis (for HCl compliance). (R336.1201(3))

3. The permittee shall keep a written record of the chlorinated compound content of the LFG as determined in the most recent sampling and analysis. **(R 336.1213(3))**
4. The permittee will monitor and record the temperature of air/fuel mixture at the aftercooler outlet a minimum of once per day excluding holidays and weekends when an engine operator is not scheduled, or called in, to be on site. A list of excluded holidays shall be maintained on site and made available to the Air Quality Division upon request. **(R336.1213(3))**
5. The permittee shall record and report as a deviation any air/fuel mixture temperature reading greater than 5°F in excess of the maximum air/fuel mixture temperature observed during the performance test in which compliance with the NOx emission limit was established. **(R336.1213(3))**
6. The permittee shall use the equations and emission factors as specified in Appendix 2-7 to calculate the emissions of CO, NOx, HCL, NMOC, from each ICE. Records of the monitored parameters and calculations shall be kept on file. **(R336.1201(3))**

See Appendix 2-7

VII. REPORTING

1. Prompt reporting of deviations pursuant to General Conditions 24 of Part A. **(R 336.1213(3)(c)(ii))**
2. Semiannual reporting of monitoring and deviations pursuant to General Condition 23 of Part A. Report shall be **postmarked or** received by 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. Report shall be **postmarked or** received by appropriate AQD district office by March 15 for the previous calendar year. **(R 336.1213(4)(c))**

See Appendix 2-8

VIII. STACK/VENT RESTRICTION(S)

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 Dimensions (inches)	Minimum Height Above Ground (feet)	Underlying Applicable Requirements
1. SVICE1	12	23	R336.1201(3)
2. SVICE2	12	23	R336.1201(3)
3. SVICE3	12	23	R336.1201(3)
4. SVICE4	12	23	R336.1201(3)
5. SVICE5	12	23	R336.1201(3)
6. SVICE6	12	23	R336.1201(3)
7. SVICE7	12	23	R336.1201(3)

IX. OTHER REQUIREMENT(S)

1. NA

Footnotes:

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

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

G-2. Non-Applicable Requirements

At the time of ROP issuance, the AQD has determined that the requirements identified in the table below are not applicable to this stationary source. This determination is incorporated into the permit shield provisions set forth in the General Conditions in Part A pursuant to Rule 213(6)(a)(ii).

Emission Unit/Flexible Group ID	Non-Applicable Requirement	Justification
EUCENGINE1, EUCENGINE2, EUCENGINE3, EUCENGINE4, EUCENGINE5, EUCENGINE6, EUCENGINE7	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ), also known as the RICE MACT	These RICE are not subject to the RICE MACT because the stationary source is not considered a major source of Hazardous Air Pollutants (HAPs).

Appendices

Appendix 2-1. Abbreviations Used in This Permit

The following is an alphabetical listing of all abbreviations/acronyms used in this RO Permit.

A. abbreviations/acronyms

AP-42	Compilation of Air Pollutant Emission Factors
AQD	Air Quality Division
BDT	Best demonstrated technology
BID	Background information document
CAA	Federal Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DE	District Engineer
DEQ	Michigan Department of Environmental Quality
EPA	United States Environmental Protection Agency
EG	Emission Guidelines or Emission Unit/Process Group
GAR	Generally Applicable Requirement
HAP	Hazardous air pollutant
ID	Identification number
LFG	Landfill gas
MDEQ	Michigan Department of Environmental Quality
MSW	Municipal solid waste
MVAC	Motor vehicle air conditioner
NESHAP	National Emission Standards for Hazardous Air Pollutants
NMOC	Nonmethane organic compounds
NSPS	New Source Performance Standards
NSR	New source review
OMB	Office of Management and Budget
PM	Particulate matter
PM10	Particulate matter less than 10 microns in size
PSD	Prevention of significant deterioration
PTE	Potential to emit
PTI	Permit to install
RCRA	Resource Conservation and Recovery Act
RMP	Risk Management Plan
RO	Renewable Operating
SRN	State Registration Number
VE	Visible emissions
VOC	Volatile organic compounds

B. Measurement Abbreviations

Btu	British thermal units
°C	degrees Celsius
dscf	dry standard cubic feet
°F	degrees Fahrenheit
J/scm	joules per standard cubic meter
m	meters
Mg	megagrams
mm	millimeters
MW	megawatts
pph	pounds per hour

ppm	parts per million
ppmv	parts per million by volume
scf	standard cubic feet
sec	seconds
tpy	tons per year
yr	years

C. Conversion Factors

1 meter = 3.2808 feet
1 megagram = 1.1023 tons = 2204.6 pounds
1 cubic meter = 35.238 cubic feet = 1.3565 cubic yards
1 cubic meter = 0.0008107 acre-feet
degrees Celsius = (degrees Fahrenheit - 32)/1.8

Appendix 2-2. Schedule of Compliance

The permittee has certified that this source is in compliance with all applicable requirements as of the date of issuance of this RO Permit and the permittee shall continue to comply with all applicable requirements listed in this RO Permit. A detailed Schedule of Compliance is not required. (R 336.1213(4)(a), R 336.1119(a)(ii))

The permittee has certified that with respect to the future applicable requirement(s) identified in Table(s) F2.1, the effective compliance date(s) are after the date of issuance and before the date of expiration of this RO Permit, the source will meet the requirement(s) on a timely basis unless the underlying applicable requirement requires a more detailed schedule. (R 336.1119(a)(iii), R 336.1213(4)(a))

Appendix 2-3. Monitoring Requirements

Specific monitoring requirement procedures, methods or specifications are detailed in Part A or the appropriate Requirement Tables. Therefore, this appendix is not applicable.

Appendix 2-4. Recordkeeping

Specific recordkeeping requirement formats and procedures are detailed in Part A or the appropriate Requirement Tables. Therefore, this appendix is not applicable.

Appendix 2-5. Testing Procedures

Specific testing requirement plans, procedures, and averaging times are detailed in the appropriate Requirement Tables. Therefore, this appendix is not applicable.

Appendix 2-6. Permits to Install/Operate

The following table lists the Permits to Install and/or Operate which relate to the identified Emission Units or Flexible Groupings:

Permit to Install/Operate Number	Description of Equipment	Corresponding Emission Unit or Flexible Grouping ID
269-97A	Seven landfill gas fired internal combustion engines	FGICENGINES (EGICE1 through EGICE7)
160-05	Seven landfill gas fired internal combustion engines (modification of 269-97A)	FGICENGINES (EGICE1 through EGICE7)

Appendix 2-7. Emission Calculations

The permittee shall use the following calculations in conjunction with monitoring, testing or recordkeeping data to determine compliance with the applicable requirements referenced in Table F-2.1.

I. Nitrogen Oxide (NO_x), Carbon Monoxide (CO), and Non Methane Organic Compound (NMOC):

The permittee shall calculate emissions using the emission factors and equations listed below or an alternative method approved by the District Supervisor. The emission factors shall be established and updated through stack testing and approved by the District Supervisor.

Internal Combustion Engine horsepower (EGICE HP) = generator output (kW) / (0.746kW/HP * 93.9/100)

Pounds per hour (lb/Hr) = EGICE HP * lb/454g * X g/HP*Hr, where X is a factor from table below.

Ton per month (ton/mo) = lb/Hr * Hours of operation/month * Ton/2000 lbs

Pollutant	X
CO	2.9g/HP*Hr
NO _x	2.0g/HP*Hr
NMOC	0.2g/HP*Hr

II. Hydrogen chloride (HCl):

Present in the landfill gas are numerous chlorinated compounds. The permittee shall calculate the emissions using the emission factor and equation listed below or an alternative method approved by the District Supervisor. The emission factor shall be established and updated through stack testing and approved by the District Supervisor.

The following equations provide an example of how HCl emissions can be calculated using the measured landfill gas lower heating value to calculate the flow rate of gas entering the seven (7) ICEs:

Notes:

A heat input of 151,090 Btu/min (LHV) is required to operate the engines at 100% load = 9.0654 MMBtu/hr.
 800 kilowatts (gross) of electricity are generated at 100% load; therefore, one kilowatt hour of power generation at 100% load requires a heat input of 11,331.75 Btu (LHV).

$151,090 \text{ Btu/Min} * 60 \text{ min/hr} / 800 = 11,331.75 \text{ Btu/kWhr}$

LFG = landfill gas

LHV = lower heating value

LFG LHV = landfill gas lower heating value, measured and recorded on a weekly basis

cf = cubic foot

kWhr = kilowatt hour

$\text{LFG consumed (cf)} = \text{total gross kWhr (units 1-7)} * (11,331.75 \text{ LHV Btu/kWhr}) / (\text{LFG LHV})$

$\text{Total LFG flow (cf)} = \text{cf of LFG consumed} / (\text{total engine hours} * 7 \text{ engines})$

Total HCl emitted per hour:

$\text{Pound(s) HCl /Hr} = (5.1 \text{ lbHCl/MMft}^3) * (\text{Total LFG flow})$

Appendix 2-8. Reporting

A. Annual and Deviation Certification Reporting

The permittee shall use the DEQ Report Certification form (EQP 5736) and DEQ Deviation Report form (EQP 5737) for the annual and deviation certification reporting referenced in Section IV of the Requirement Tables. Alternative formats must meet the provisions of R 336.1213(4)(c) and R 336.1213(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 Requirement Tables. Therefore, Part B of this appendix is not applicable.

Appendix 2-9. Preventative Maintenance Plan/Corrective Action Plan

At the time of RO permit issuance, the AQD determined that a Preventative Maintenance Plan / Corrective Action Plan was not warranted. Therefore, this appendix is not currently applicable.



State Registration Number

N5984

Michigan Department of Environmental Quality
Air Quality Division

**RENEWABLE OPERATING PERMIT
STAFF REPORT**

ROP Number

199600384

Pine Tree Acres Inc. (Landfill)
and
Sumpter Energy Associates (Landfill Gas Control)

SRN: N5984

located at

36600 29 Mile Road, Lenox Township, Michigan, 48062

Permit Number:	199600384
Staff Report Date:	December 12, 2002
Amended Date:	March 2, 2006
RO Permit Issuance Date:	December 12, 2002
RO Permit Expiration Date:	December 12, 2007

This Staff Report is published in accordance with Part 5506 and 5511 of Article II, Chapter 1, Part 55 (Air Pollution Control) of P.A. 451 of 1994. Specifically, R 336.1214(1) requires that the Department of Environmental Quality, (Department), Air Quality Division (AQD), shall prepare a report that sets forth the factual basis for the terms and conditions of the Renewable Operating (RO) Permit.

DEQ Printed by authority of the Michigan Department of Environmental Quality, Air Quality Division		
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TABLE OF CONTENTS

August 24, 2001, STAFF REPORT	3
JULY 18, 2002 STAFF REPORT ADDENDUM	9
October 31, 2005 STAFF REPORT FOR RULE 214(2) REOPENING	17
October 31, 2005 STAFF REPORT FOR RULE 216(3) SIGNIFICANT MODIFICATION	18
December 13, 2005, STAFF REPORT ADDENDUM FOR RULE 217(2) REOPENING AND RULE 216 (3) SIGNIFICANT MODIFICATION	21
December 13, 2005 STAFF REPORT FOR RULE 216(2) MINOR MODIFICATION	22



State Registration Number
N5984

RENEWABLE OPERATING PERMIT

RO Permit Number
199600384

August 24, 2001, STAFF REPORT

Purpose

Major stationary sources of air pollutants are required to obtain and operate in compliance with a RO Permit pursuant to Title V of the Federal Clean Air Act of 1990 and Michigan's Administrative Rules for air pollution control pursuant to Section 5506(1) of Article II, Chapter I, Part 55 of P.A. 451 of 1994. Major stationary sources are defined by criteria in administrative rule R 336.1211(1). In addition to major stationary sources, specific source categories listed by the US Environmental Protection Agency (USEPA) in accordance with 40 CFR 70.3 may be required to obtain a RO Permit. A Municipal Solid Waste (MSW) Landfill with design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters is a source category that is required to obtain a RO Permit, even though the landfill's potential to emit does not qualify pursuant to the thresholds of a major source as defined in R 336.1211(1). The RO Permit is intended to simplify and clarify a stationary source's applicable requirements and compliance with them by consolidating all state and federal air quality requirements into one document.

This report, as required by R 336.1214(1), sets forth the applicable requirements and factual basis for the draft permit terms and conditions including citations of the applicable requirements, an explanation of any equivalent requirements included in the draft permit pursuant to R 336.1212(6), and any determination made pursuant to R 336.1213(6)(a)(ii) regarding requirements that are not applicable to the stationary source.

General Information

Stationary Source Mailing Address:	Pine Tree Acres Inc. (Landfill) and Sumpter Energy Associates (Landfill Gas Control) 36600 29 Mile Road Lenox Township, Michigan 48062
Source Registration Number (SRN):	N5984
Standard Industrial Classification (SIC) Code:	4953
Number of Stationary Source Sections:	2
Application Number:	199600384
Responsible Official:	1. Section No. 1 - Pine Tree Acres, Inc. Mr. James Schmieder, Landfill Manager Phone Number: 810-749-9698 2. Section No. 2 - Sumpter Energy Associates Mr. Scott Salisbury, President Phone Number: 248-380-3920
AQD Contact:	Diane Kavanaugh Vetort, Environmental Quality Analyst 735-432-1254
Date Permit Application Submitted:	November 27, 1996
Date Application Was Administratively Complete:	November 27, 1996
Is Application Shield In Effect?:	Yes

Date Public Comment Begins:	May 20, 2002
Deadline for Public Comment:	June 18, 2002

Source Description

Pine Tree Acres Inc. owns and operates a municipal solid waste landfill (Pine Tree Acres Landfill) located at 36600 29 Mile Road and Sumpter Energy Associates owns and operates an electric generating facility consisting of seven internal combustion engines (ICE), located on 36450 29 Mile Road, Lenox, Macomb County, Michigan. The stationary source is located in an area designated as attainment for all criteria pollutants.

These two facilities are considered a single stationary source based on the definition in Michigan's Rule 119(q). Pine Tree Acres Landfill is a Type II Sanitary Landfill, which accepts and landfills municipal solid waste (MSW) and inert wastes such as construction and demolition debris, foundry sand, ash and low level contaminated soils. The facility historically has not accepted asbestos wastes but plans to have the ability to do so in the future. The solid waste is transported to the facility to an area (cell) where it is deposited on the working surface. Solid waste arrives in a variety of vehicles that potentially generate fugitive dust emissions. The deposited waste is covered with soil on a daily basis. When a cell reaches its design capacity, a liner is installed, covering the waste. Over time, the waste decomposes producing landfill gas (LFG). The LFG is comprised of methane, carbon dioxide, carbon monoxide, and volatile organic compounds (VOC). MSW initially undergoes aerobic microbial activity, which produces predominately nitrogen gas and carbon dioxide. As oxygen levels decline, gas composition changes to a mixture of methane and carbon dioxide. LFG typically contains a small percentage of non-methane organic compounds (NMOC). The NMOC fraction consists of various organic hazardous air pollutants (HAP), greenhouse gases, and Volatile Organic Compounds (VOC).

LFG is collected through a piping system, transferred by gas moving equipment (a blower), and is rotated and processed through the Sumpter Energy Associates seven (7) internal combustion engines. This is considered to be an active landfill gas system. The gas is exhausted after undergoing combustion via the engines. Combustion of the LFG fuel has the potential to emit nitrogen oxides (NOx), carbon monoxide (CO), VOC, sulfur dioxide (SO2), particulate and Hydrogen Chloride (HCl). The engines are considered the air pollution control system for the LFG emissions.

New Source Performance Standards (NSPS), Standards of Performance for Municipal Solid Waste Landfills, codified at 40 CFR 60 Subpart WWW, are applicable to MSW landfills, which have a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, and a construction, reconstruction or modification date after May 30, 1991. Furthermore, subject facilities are required to submit a design plan and install a collection and control system (if NMOC emissions are greater than or equal to 50 megagrams/year) that meet the provisions of 60.752 through 60.759 (Subpart WWW). Pursuant to 60.752(b)(2)(ii), a LFG collection and control system shall be installed and operational within 30 months after the first report in which the NMOC emission rate equals or exceeds 50 megagrams per year.

Pine Tree Acres has a design capacity of 33 million megagrams and was last modified June 18,1999, when it was issued a Solid Waste Disposal Area Construction Permit to increase the landfill's design capacity. Consequently, Pine Tree Acres is subject to the standards of 40 CFR 60 Subpart WWW and the provisions of R336.1210. On November 26, 1996, Pine Tree Acres submitted a ROP application in accordance with Title V provisions.

The following table lists stationary source-wide emission information as reported in Michigan Air Emissions Reporting System (MAERS) for 1999 submittal.

TOTAL STATIONARY SOURCE EMISSIONS - Criteria Pollutants

Pollutant	Tons per Year
Carbon Monoxide (CO)	108
Lead (Pb)	0
Nitrogen Oxides (NO _x)	58
Particulate Matter (PM)	11
Sulfur Dioxide (SO ₂)	3
Volatile Organic Compounds (VOCs)	24
Individual Hazardous Air Pollutants (HAPS) **	
Hydrogen Chloride (HCl)	4
Total Hazardous Air Pollutants (HAPS)	4

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

See Sections C and D in the enclosed draft RO Permit for summary tables of all processes at the stationary source that are subject to process-specific emission limits or standards in any applicable requirement.

Regulatory Analysis

The facility is located in Macomb County, which is currently designated as attainment/unclassified for all criteria pollutants. The source is not subject to R 336.1220 for Major Offset Sources. The facility is considered a major Title V 40 CFR Part 70 source due to the potential to emit of NO_x and CO exceeding 100 tons. Also, the facility is considered a 'synthetic minor' source in regards to Prevention of Significant Deterioration (PSD) (40 CFR 52.21) regulations.

The facility is not considered a major source of hazardous air pollutant (HAP) emissions because the potential emissions of any single HAP regulated by the Clean Air Act, Section 112 is less than 10 tons per year and the potential emissions of all HAPs combined are less than 25 tons per year. MSW landfills are scheduled to be regulated with new Maximum Achievable Control Technology (MACT) standards for existing MSW landfills (40 CFR 63). The Landfill MACT, Part 63, Subpart AAAA, will have a promulgation date after May 15, 2002. Thereafter the MACT standards will become applicable to this facility.

Furthermore, the facility is subject to NSPS for Municipal Solid Waste Landfills, specifically the 40 CFR Part 60, Subpart WWW. The regulation requires the State to review and approve all design plans for gas collection and control systems for landfills where the NMOC emissions are equal to or greater than 50 megagrams per year. The NSPS, Subpart WWW requires that a Part 70, Renewable Operating Permit (ROP), be submitted for all new and existing landfills with a design capacity equal to or exceeding 2.5 million megagrams and 2.5 million cubic meters.

The Pine Tree Acres Landfill became subject to the NSPS 40 CFR Part 60, Subpart WWW after being issued a Solid Waste Disposal Area Construction Permit on June 18, 1999, to increase the landfill's design capacity. The company submitted an Initial Design Capacity and Tier 1 NMOC emission rate report on September 16, 1999. The company submitted a Landfill Gas Collection and Control System Design Plan (LGCCS) on September 18, 2000. The LGCCS is required to be installed and operational by March 18, 2002. The company is required to conduct performance stack testing of the LGCCS by September 18, 2002.

The facility has submitted information indicating that the NMOC emissions are greater than 50 megagrams per year. The facility utilized the EPA model to estimate the NMOC emissions and did not conduct further Tier 2 or Tier 3 testing.

On June 16, 1998, the USEPA amended 40 CFR Part 60 Subpart WWW. In the June 16, 1998, amendment, EPA accidentally omitted 40 CFR Part 60.752(b)(2)(ii)(A) and (B) and 40 CFR 60.752(b)(2)(iii)(1) and (2). These portions of the CFR were intended to remain in effect. Therefore, these citations remain in the ROP.

The company requested that the facility's Title V permit be divided into 2 sections. Section 1 is comprised of the five emission units and three flexible groupings all located at Pine Tree Acres Landfill. Section 2 is comprised of seven emission units and two flexible groupings all located at Sumpter Energy Associates.

SECTION 1

EGLANDFILL represents the MSW landfill, which began accepting solid waste in 1988.

EGALGCS represents the active landfill gas collection system (ALGCS). The landfill was exempt from the requirement to obtain an approved Air Use Permit by Rule 285 (aa):

*Rule 336.285 Permit system exemptions; miscellaneous. The permit system does not apply to:
(aa) Landfills and associated flares and leachate collection and handling equipment.*

EGENCLOSED FLARE represents an enclosed combustor. At this time Pine Tree Acres landfill has not installed a flare however, they plan to have the ability to do so in the future therefore this table has been included for future applicability. The flare is proposed to be additional control as well as backup control for the seven ICEs.

EGASBESTOS represents any active or inactive asbestos disposal site. The facility historically has not accepted asbestos wastes but plans to have the ability to do so in the future. The requirements in this table have been identified as future applicable. The facility is not subject to the Asbestos NESHAP 40 CFR Part 61 Subpart M until such time as they accept regulated asbestos containing material (RACM) or fail to cover Category I or II non-friable ACM before undergoing activities that may cause the material to become RACM.

EGNEWCOLDCLEANER represents one or more cold cleaners exempt from the requirement to obtain an Air Use Permit by Rule 281(h) or Rule 285 (r)(iv). Pine Tree Acres currently operates one mineral spirits cold cleaner installed January 1, 1999.

Flexible Grouping FGLGCS represents the active landfill gas collection system.

FGCONTROLS represents any control equipment present, which in the case of Pine Tree Acres, consists of the seven (7) ICEs and the future proposed flare. Per Company suggestion, in order to streamline the ROP, the requirements contained in the separate Landfill Template Table FGENCLOSEDCOMBUSTORS have been incorporated into the FGCONTROLS Table. Both Tables pertain to the 7 ICEs and the proposed flare.

FGNEWCOLDCLEANERS represents any current and future exempt cold cleaners placed into operation after July 1, 1979.

SECTION 2

EGICENGINE#1 through EGICENGINE#7 represents the seven ICEs, which control the LFG emissions. The engines, owned and operated by Sumpter Energy Associates, were installed in 1997 and are permitted. The original Air Use Permit to Install (PTI) was issued for six (6) ICEs however, only five (5) are installed and operating at the time of ROP issuance. Sumpter Energy applied for and obtained a revised PTI, issued July 24, 2001 to add two additional engines bringing the total to 7 ICEs. Each ICE is subject to emission limits for NOx, CO, HCl and NMOC. The ICEs are also subject to the control requirements of the NSPS, 40 CFR Part 60, Subpart WWW.

Flexible grouping FGICENGINES represents the seven ICEs, which control the LFG emissions.

FGCONTROLS represents the seven ICEs, which control the LFG emissions. Per Company suggestion, in order to streamline the ROP, the requirements contained in the separate Landfill Template Table FGENCLOSEDCOMBUSTORS have been incorporated into the FGCONTROLS Table.

Please refer to Section E and Section F in the enclosed draft permit for detailed regulatory citations for each Emission Unit at the stationary source. Section A contains regulatory citations for General Conditions.

Equivalent Requirements

This permit does not include any equivalent requirements or significant changes pursuant to R 336.1212(6). Equivalent requirements are enforceable applicable requirements that are equivalent to the applicable requirements contained in the original New Source Review permit (NSR), a Consent Order/Judgment, and/or the State Implementation Plan (SIP).

Non-applicable Requirements

Section G of the draft RO Permit lists requirements that are not applicable to this source as determined by the AQD, if any were proposed in the application. These determinations are incorporated into the permit shield provision set forth in Part A (conditions 30 through 33) of the draft RO Permit pursuant to R336.1213(6)(a)(ii).

Processes in Application Not Identified in Draft RO Permit

The following table lists processes that were included in the RO Permit application as exempt devices under R 336.1212(3). These processes are not subject to any process-specific emission limits or standards in any applicable requirement.

Exempt Emission Unit ID	Description of Exempt Emission Unit	RO Permit Exemption	NSR Permit Exemption
DV-LEACHATE	40,000 gallon above ground storage tank for leachate.	212(3)	285(aa)

Draft RO Permit Terms/Conditions Not Agreed to by Applicant

This permit does not contain any terms and/or conditions that the AQD and the applicant did not agree upon pursuant to R 336.1214(2). If the person and the AQD cannot agree upon terms and conditions of a draft RO Permit, the terms and conditions that the AQD believes are necessary to comply with the requirements of R 336.1213 shall be incorporated into the RO Permit.

Compliance Status

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

Action Taken by the Department

The AQD proposes to approve RO Permit No. 199600384. A final decision on the RO Permit will not be made until the public and affected states have had an opportunity to comment on the AQD's proposed action and draft permit. In addition, the United States Environmental Protection Agency (USEPA) is allowed up to 45 days to review the draft permit and related material. The AQD is not required to accept recommendations that are not based on applicable requirements. The delegated decision maker for the AQD is Teresa Seidel, District Supervisor. The final determination for RO Permit approval/disapproval will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by the USEPA.



RENEWABLE OPERATING PERMIT

JULY 18, 2002 STAFF REPORT ADDENDUM

Purpose

A Staff Report dated August 24, 2001, was developed in order to set forth the applicable requirements and factual basis for the draft Renewable Operating (RO) Permit terms and conditions as required by R 336.1214(1). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft RO Permit during the 30-day public comment period as described in R 336.1214(3) and the comment period as described in R 336.1214(5). In addition, this addendum describes any changes to the draft RO Permit resulting from these pertinent comments.

General Information

Responsible Official:	1. Section No. 1 - Pine Tree Acres, Inc. Mr. Mike Stallard, District Manager Phone Number: 810-749-9698 2. Section No. 2 - Sumpter Energy Associates Mr. Scott Salisbury, President Phone Number: 248-380-3920
AQD Contact:	Diane Kavanaugh Vetort, Environmental Quality Analyst 735-432-1254

Summary of Pertinent Comments

No comments were received from the general public, however, Pine Tree Acres Inc. and Sumpter Energy Associates made several comments. A summary of the significant comments and responses to them follow below:

Section 1

General

Comment: Pine Tree Acres Inc. (PTA) commented that the current responsible official for Pine Tree Acres, Inc. is Mike Stallard, District Manager.

Response: This change was made.

Table E-1.3 EGENCLOSED FLARE

Comment 1: PTA stated that two open flame flare units have now been installed to manage excess landfill gas and serve as back up to the engine plant. The Draft ROP contains several references to the Company's proposed installation of an Enclosed Flare and also Table E-1.3 EGENCLOSED FLARE containing future applicable requirements. The references and Table should be replaced by the recently installed Open Flare.

Response 1: The EGENCLOSED FLARE Table and references were removed and replaced by Table and references for EGOPEN FLARE.

Comment 2: The Draft ROP requires that PTA submit a complete test protocol for the performance test of their landfill gas control equipment to AQD for approval at least 60 days prior to the anticipated test. PTA requests that AQD allow them to submit the protocol at least 30 days prior to the test date.

Response 2: The requested change was made.

Table E-1.1 EGLANDFILL (40 CFR PART 60 SUBPART WWW LANDFILLS)

Comment: PTA commented that the requirement to submit an annual NMOC emission rate report by March 15 for the previous calendar year is not required by NSPS once the facility has demonstrated greater than 50 Mg/yr NMOC emissions, which starts the timeline for the installation of a gas collection and control system. They also questioned March 15, as the due date.

Response: The annual NMOC emission rate report is due until such time as the Company has installed an approved landfill gas collection and control system. The control system is not approved until it has undergone performance testing to determine compliance with the NMOC emission standard. Table E-1.1 EGLANDFILL Condition I.C.3 of the Draft ROP contains the exemption from the requirement to submit annual NMOC emission rate reports under 40 CFR 60.757(b)(1) and (2). In regard to the March 15 submittal deadline for these reports, the intent of using this date was to simplify report submittal due dates since March 15, is the current deadline for submittal of Semiannual Deviation reporting, Annual Compliance Certification, and Michigan Air Emissions Reporting.

Appendix 1-10. Fugitive Dust Plan

Comment: The Draft ROP requires the permittee to implement an AQD approved fugitive dust plan in Appendix 1-10. The Company stated that if a fugitive dust plan is not specifically required by regulation then they would choose to have the Appendix removed.

Response: At the time of initial draft the Company was asked whether they were willing to accept the AQD minimal plan and it was incorporated into the Appendix 1-10. Based on the Company's comment and because they are not required to implement a Fugitive dust plan under Act 451 or the administrative rules at this time, the Appendix 1-10 and associated references have been removed.

Section 2

Table F-2.1 FGICENGINES

Comment1: Sumpter Energy Associates (Sumpter) commented that, "The requirement to monitor combustion air and or/fuel temperature is an additional requirement as compared to the monitoring specified in Permit to Install No. 269-97A" and is an "unnecessary monitoring provision". They stated, "The addition of this monitoring requirement does not simplify and clarify applicable requirements and compliance with them.....as stated in the RO Permit public comment period notice." They also indicated and described that they do monitor "air/fuel mixture temperature" as opposed to air manifold temperature.

They requested that Condition III.A.2.d be modified to specify that the air/fuel mixture at the aftercooler outlet will be monitored and recorded at least once per business day (excludes weekends and holidays when engine operators are not scheduled to be on-site). They also requested that Condition III.B.6.1 be modified to specify that a deviation will be defined as any reading of greater than 5°F in excess of the

maximum air/fuel mixture temperature observed during the performance test in which compliance with the NOx emission limit was established.

Response1: The AQD notes Sumpter's reference was incorrect and should be III.A.2.1.d. The AQD agrees to modify all applicable conditions in the Draft ROP specifying air manifold temperature, replacing this reference with "air/fuel mixture temperature". It is AQD position that this monitoring is necessary as periodic compliance monitoring pursuant to Rule 213 (3) to demonstrate the NOx emission limit and proper operation of the ICEs. Due to the fact that Sumpter indicated there is no continuous recording device, and because this requirement pertains only to NOx compliance, the Condition III.A.2.1.d was removed as opposed to being modified, and instead, two new conditions have been added. Condition III.A.2.2. details the monitoring, recordkeeping and reporting requirements associated with the air/fuel mixture temperature. Condition III.A.2.3 refers to air/fuel mixture temperature deviation reporting and therefore was added here as opposed to under the performance stack testing Condition III.B.6.1.

Comment2: Sumpter requested a modification of the requirement in the Draft ROP to conduct performance testing for CO, NOx and HCl and submit the test results report by September 18, 2002. They requested they be allowed to conduct these performance tests within 180 days of issuance of the ROP.

Response2: The requested changes were made. AQD's performance stack testing procedures also allow up to 60 days following the last date of the test to submit the test results report. This change was also made to the performance test conditions in Table F-2.1 FGICENGINES for CO, NOx, and HCl.

Comment 3: Sumpter proposed the following, "Sumpter Energy will install a thermocouple for each engine in the combined IC engine exhaust gas downstream of the combustion cylinders to monitor and record the average combustion exhaust temperature at least once every fifteen minutes. The recorded temperature will be compared to the exhaust temperature measured at the same location during the most recent performance test at which compliance with the NMOC emission standard was determined."

Response 3: The AQD does not agree that the measurement of exhaust temperature in the combined IC engine exhaust gas downstream is an acceptable or adequate alternative to measuring the temperature of the combustion gases exhausted from each cylinder on each engine.

In lieu of direct combustion temperature measurement the AQD has accepted and incorporated into the Draft ROP the alternative monitoring proposal submitted by PTA/Sumpter in their Landfill Collection and Control System Design Plan pursuant to 40 CFR 60.752(b)(2)(i)(B). The AQD has also included an additional condition that allows the company the flexibility to propose other alternative monitoring scenarios in accordance with 40 CFR 60.756(e). On June 7, 2002, the AQD District supervisor sent a letter to the Company that included an EPA determination detail that addresses approval of alternative monitoring of direct combustion temperature measurement required by 40 CFR 60.756(b)(1).

Changes to the May 20, 2002 Draft RO Permit

The following modifications were made to the May 20, 2002 Draft Renewable Operating Permit:

SECTION 1

C-1. Emission Unit/Process Group Summary Table:

The emission unit EGENCLOSED FLARE was removed and replaced by EGOPEN FLARE with installation date of April 18, 2002.

D-1. Flexible Groupings Summary Table

FGCONTROLS, the emission unit EGENCLOSED FLARE was removed and replaced with EGOPEN FLARE.

Table E-1.1 EGLANDFILL:

Condition I.A. Control equipment description for EGENCLOSED FLARE was removed and replaced by EGOPEN FLARE.

Condition V.6. was removed.

Table E-1.2 EGALGCS:

Condition I.A. control equipment description of EGENCLOSED FLARE was replaced by EGOPEN FLARE.

Table E-1.3 EGENCLOSED FLARE:

The entire Table was removed and replaced by Table E-1.3 EGOPEN FLARE.

Table E-1.3 EGOPEN FLARE:

Condition III.B.3.1 – The condition now reads, “Conduct performance test of EGOPENFLARE and submit results report by September 18, 2002. Verification of Opacity includes the submittal of a complete report of the test results. (40 CFR 60.8(a) R336.2001(4))”

Condition III.B.3.2 – The condition now reads, “No less than 30 days prior to testing, a complete stack testing plan must be submitted to the AQD. The final plan must be approved by the AQD prior to testing. (R336.2003 and 336.2004)”

Table F-1.1 FGLGCS:

Condition I.A. control equipment description of EGENCLOSED FLARE was replaced by EGOPEN FLARE.

Table F-1.2 FGCONTROLS

Condition I.A. control equipment description of EGENCLOSED FLARE was replaced by EGOPEN FLARE.

Appendix 1-10

The entire Appendix was removed.

SECTION 2

Table F-2.1 FGICENGINES:

Condition III.A.2.1.d. was deleted and was replaced by Conditions III.A.2.2 and 3.

Condition III.A.2.2. was added to require the monitoring and recording of the air/fuel mixture temperature.

Condition III.A.2.3 was added to identify what constitutes a reportable deviation of the air/fuel mixture temperature.

Condition III.A.3.3 was added as an applicable requirement identifying the approved alternate combustion temperature monitoring proposed by the Company in their Landfill Gas Collection and Control System Design Plan.

Condition III.A.3.4 was added as an applicable requirement identifying the Company's ability to propose future alternatives to the combustion temperature monitoring required under Condition III.A.3.3.

Condition III.B.3.1 – (CO performance test) The condition now reads, "Within 180 days following issuance of this RO permit,..." and, "Verification of emission rates includes the submittal of a complete report of the test results within 60 days following the last date of the test, ...". The reference to air manifold temperature was removed.

Condition III.B.6.1 – (NO_x performance test) The condition now reads, "Within 180 days following issuance of this RO permit,..." and, "Verification of emission rates includes the submittal of a complete report of the test results within 60 days following the last date of the test, including... the temperature of air/fuel mixture in which the engines can operate in compliance with their emission limits." The reference to air manifold temperature was removed and replaced by temperature of air/fuel mixture.

Condition III.B.9.1 – (HCl performance test) The condition now reads, "Within 180 days following issuance of this RO permit,..." and, "Verification of emission rates includes the submittal of a complete report of the test results within 60 days following the last date of the test, ..."

Condition III.B.12.1– (NMOC performance test) the reference to "air manifold temperature" was removed.

Condition V. – reference to "air manifold temperature" was removed and replaced by "air/fuel mixture temperature".

Summary of Pertinent Comments

Pine Tree Acres Inc. and Sumpter Energy Associates made several comments on the Proposed RO permit following a 7 day review period. A summary of the significant comments and responses to them follow below:

SECTION 1

Table E-1.1 EGLANDFILL

Comment: PTA requested that a cross reference be added to show the relationship between this Condition I.C.3 and Condition IV.5(a) and (b).

AQD response: This change has been made.

Comment: PTA commented that Condition IV.1 should be revised to state, "Prompt reporting of deviations pursuant to Condition 24 of Part A, *except as defined in Table F.1.1, Section V.6.*" (The same change was requested for Table E-1.3 EGOPENFLARE, Table F-1.1 FGLGCS, and Table F-1.2 FGCONTROLS)

AQD response: This change was not made. This condition is a standard template condition referring to General Condition No. 24. The AQD believes the change is not necessary as both Condition IV.1 and Table F-1.1 Condition V.6. clearly state the reporting requirements.

Table E-1.3 EGOPENFLARE

Comment: PTA commented that Condition III.A.2.1 imposes a specific requirement to monitor the pilot flame whereas condition I.C.2 (a) specifies a broader monitoring obligation. They commented that Condition III.A.2.1 should be revised to stipulate that the pilot flame be monitored only when the pilot is operated and that such intermittent operation should not be construed as noncompliance if the Condition I.C.2(a) is fulfilled.

AQD response: This change was not made. The conditions referenced are part of the Landfill ROP Template. The conditions have separate applicable requirements, III.A.2.1 is taken directly from the NSPS and I.C.2 (a) is taken directly from the General Provisions 60.18. As such the Conditions are both applicable to the emission unit.

Comment: PTA commented that they submitted to US EPA, an alternative method of determining the net heating value combusted in open flares from Landfills, on a site specific basis. EPA approved this method in a letter dated June 17, 2002. They requested a change to Condition V.3. indicating the approval of alternative methods by EPA.

AQD response: This change has been made.

Table E-1.4 EGASBESTOS

Comment: PTA commented requesting a clarification be added to Condition V.1.(b), by inserting a reference to Condition V.1 (c) within this condition.

AQD response: This change has been made.

Table F-1.2 FGCONTROLS

Comment: PTA commented that Condition I.C.1. is taken out of context from the cited regulation and could establish a performance obligation to test to demonstrate compliance for open flares since it is part of the control system.

AQD response: This change was not made. This condition is part of the Landfill ROP Template. AQD believes the condition as written clearly states "except as provided for in 60.18" which is the General Provision that specifically addresses the testing requirements for Open Flares.

Comment: PTA commented that Condition V.2 (a) be revised to include provisions for an approved alternative monitoring plan.

AQD response: This change was not made. The provision for approval of alternative monitoring is included in the RO permit under Table F-1.1 FGLGCS, Condition I.C.4.

SECTION 2

Table F-2.1 FGICENGINES

Comment: Sumpter Energy Associates proposed to implement an alternative monitoring procedure for combustion temperature monitoring as required by 60.756(b)(1). The company will demonstrate certain operating parameters during the performance tests required by 40 CFR 60.752(b)(2)(iii)(B).

AQD response: EPA issued a Determination Detail (Control Number: 9900021) dated May 19, 1999, allowing the approval of alternatives to monitoring combustion temperature. AQD included in the Proposed RO permit a condition that states,

"In lieu of direct combustion temperature measurement of each EGICENGINE#1 through #7, the Permittee may use data collected during the most recent performance test to propose an alternative monitoring method. The alternative monitoring method must be approved by the AQD District Supervisor."

Based on the results of the performance test and the company's proposal to implement the alternatives as indicated in EPA's Determination Detail, several changes have been made to Table F-2.1 incorporating the proposed alternative monitoring.

Changes to the May 20, 2002 Draft RO Permit

Table E-1.1 EGLANDFILL

Condition I.C.3 was revised to insert a cross reference to the requirements of 40 CFR 60.757(b)(1) and (2). The following was inserted: (Condition No.IV.5(a) and (b) of this RO permit).

Table E-1.3 EGOPENFLARE

Condition V.3. – The last sentence of this condition now reads, "The net heating value of the gas being combusted shall be determined by the methods specified in 40 CFR 60.18(f), or by alternative methods approved by EPA."

Table E-1.4 EGASBESTOS

Condition V.1.b. was revised by inserting a reference to, Condition No. V.1.c. of this RO permit, within this condition.

Table F-2.1 FGICENGINES

Condition I.C.1.(i)(ii) and (iii) was added as an applicable requirement identifying the Company's alternative combustion temperature monitoring based on EPA Determination Detail (Control Number: 9900021).

Condition III.A.2.4 was added as an applicable requirement identifying the Company's alternative combustion temperature monitoring specific to measuring and recording the oxygen concentration in the exhaust gas and what constitutes a reportable exceedance.

Condition III.A.3.3 was deleted due to the proposal and approval of the alternative combustion temperature monitoring procedure based on EPA Determination Detail.

Condition V. now reads, "Permittee shall operate EGICENGINE#1 through EGICENGINE#7 within the electrical output (kw) ranges, *the acceptable oxygen exhaust content range*, and air/fuel mixture temperature determined during the most recent performance test."

Prepared by Diane Kavanaugh Vetort, Environmental Quality Analyst, Air Quality Division.



State Registration Number
N5984

Michigan Department of Environmental Quality
Air Quality Division

RENEWABLE OPERATING PERMIT

ROP Number
199600384

**October 31, 2005 STAFF REPORT FOR
RULE 214(2) REOPENING**

Purpose

On August 24, 2001,, the Department of Environmental Quality, Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. 199600384 to Pine Tree Acres, Inc and Sumpter Energy Associates pursuant to R 336.1214. Once issued, the AQD is required to reopen the ROP as described in R 336.1217. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1217.

General Information

Responsible Official:	1. Section No. 1 - Pine Tree Acres, Inc. Mr. James Logsdon, District Manager Phone Number: 586-749-9698 2. Section No. 2 - Sumpter Energy Associates Mr. Scott Salisbury, President Phone Number: 248-380-3920
AQD Contact:	Diane Kavanaugh Vetort, Environmental Quality Analyst 586-753-3740

Changes to the 2/28/05 Draft ROP Reopening

The Department of Environmental Quality (DEQ), Air Quality Division (AQD), reopened the ROP pursuant to Rule 217(2) (a) (i) in order to incorporate applicable requirements associated with the National Emission Standard for Hazardous Air Pollutants: Municipal Solid Waste, 40 CFR Part 63 Subpart AAAA (Landfill MACT) and the National Emission Standard for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63 Subpart ZZZZ (RICE MACT). Furthermore, the ROP Tables in Sections 1 and 2 were modified to incorporate the new ROP Landfill Template. The RO Permit cover sheet and General Conditions are unchanged from the Initial ROP. Applicable requirements of the Landfill MACT were added to existing ROP conditions with underlying applicable requirement(s) of the federal New Source Performance Standard (NSPS) for Municipal Solid Waste Landfills.

During technical review of the ROP Reopening it was determined that 40 CFR Part 63 Subpart ZZZZ (RICE MACT) is not applicable to the seven internal combustion engines (ICEs) operating at the Stationary Source. The Company submitted a Stationary Source-wide potential to emit (PTE) demonstrating that the stationary source is not a major source of Hazardous Air Pollutants (HAPs) and therefore the ICEs are not subject to the RICE MACT.



State Registration Number
N5984

Michigan Department of Environmental Quality
Air Quality Division

RENEWABLE OPERATING PERMIT

ROP Number
199600384

**October 31, 2005 STAFF REPORT FOR RULE
216(3) SIGNIFICANT MODIFICATION**

Purpose

On December 12, 2002, the Department of Environmental Quality (Department), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. 199600384 to **Pine Tree Acres Inc. (Landfill)**

and

Sumpter Energy Associates (Landfill Gas Control) pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(3).

General Information

Responsible Official:	1. Section No. 1 - Pine Tree Acres, Inc. Mr. James Logsdon, District Manager Phone Number: 586-749-9698 2. Section No. 2 - Sumpter Energy Associates Mr. Scott Salisbury, President Phone Number: 248-380-3920
AQD Contact:	Diane Kavanaugh Vetort, Environmental Quality Analyst 586-753-3740
Date Application For Significant Modification Was Submitted:	June 7, 2004
Date Public Comment Begins:	October 31, 2005
Deadline for Public Comment:	November 30, 2005

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a significant modification pursuant to R 336.1216(3).

Description of Changes to the ROP

The Company applied for and received a determination from the MDEQ AQD that the landfill gas engine generators (internal combustion engines) operated by Sumpter Energy Associates, which control landfill gas emissions from the Pine Tree Acres Landfill are exempt from federal Standards of Performance for New Stationary Sources (NSPS) for Municipal Solid Waste Landfills, due to the gas treatment processes operated by Pine Tree Acres Landfill. The Company submitted an application for an ROP Significant Modification, which was received on June 8, 2004.

The Company submitted a letter dated September 13, 2004, requesting an ROP modification for EGOPENFLARE to remove an NSPS requirement not applicable to the source. The Company demonstrated that the EGOPENFLARE control equipment is not equipped with a bypass of the flare. Therefore, AQD reviewed the request and determined that based on US EPA guidance documents the

NSPS requirement to install a device that records flow to or bypass of the flare was intended for flares with control bypass stacks. The AQD agreed to remove the requirement.

On June 13, 2005, Sumpter Energy Associates submitted a New Source Review Air Use Permit to Install modification application. The Company requested the removal of a FGICENGINES monitoring condition with applicable requirement of R 336.1201(3). The monitoring requirement involves the use of the landfill gas flow meter owned and operated by the Pine Tree Acres Landfill Section of the ROP. The ROP incorporated the original PTI condition that requires Sumpter to continuously monitor and record the total flow rate of landfill gas to the ICEs (for HCl compliance). Sumpter's modification application proposed an alternative method of calculating the Hydrogen Chloride emission rate.

At the same time as the Significant Modification request, the ROP underwent a Reopening pursuant to R 336.1217 (2). The format of the ROP was also modified at this time in order to incorporate the new ROP Landfill Template. Therefore all references to Tables in this Staff Report Addendum (below) are from the existing ROP format and have since been modified (see February 28, 2005 Staff Report Addendum above).

Modifications to Section 1: EGOPENFLARE

Table E-1.3 was revised to remove a portion of Condition 2, specifically Condition 2. (b) (i-ii), with underlying applicable requirement of 40 CFR 60.756(c) (2), was removed. The AQD determined this requirement is no longer applicable since the EGOPENFLARE control does not have a bypass stack. The applicable requirement of 40 CFR 60.756(c) and (c) (1) remain in the ROP.

Modifications to Section 1: FGCONTROLS

Table F-1.2 was revised to remove NSPS requirements for internal combustion engines (ICE) compressors and to add the Treatment System requirements. Removed requirements pursuant to 60.752(b) (2) (iii) (A) (B) and added requirements pursuant to 60.752(b) (2) (iii) (C).

Modifications to Section 2: FGICENGINES

Table F-2.1 was revised to remove the NSPS requirements for ICE compressors as they are no longer applicable.

Table F-2.1 Condition III.A.2.1 (c) was removed due to the Company's requested modification resulting in approval of Permit to Install No. 160-05. Additional monitoring requirements were added due to proposed alternative monitoring, in the final ROP these are Condition VI. 2. and 3. as follows:

2. Permittee shall measure and record the heating value of the landfill gas used as fuel in the ICEs on a weekly basis (for HCl compliance). **(R336.1201(3))**
3. The permittee shall keep a written record of the chlorinated compound composition of the LFG as determined in the most recent sampling and analysis. **(R 336.1213(3))**

Modifications to Section 2: Appendix 2-7

Appendix 2-7 (II) was revised accordingly to address changes in the Hydrogen Chloride emission calculation based on the alternative monitoring.

II. Hydrogen Chloride

Total HCl emitted per hour:

(Removed) $\text{lb HCl /Hr} = (5.1\text{lb HCl/MMft}^3) * (\text{ft}^3 \text{ landfill gas burned/Hr})$

(Replaced with) $\text{lb HCl /Hr} = (5.1\text{lb HCl/MMft}^3) * (\text{Total LFG flow})$

Modifications to Section 2: FGCONTROLS

The entire Table F-2.2 was removed as the NSPS requirements are no longer applicable to these emission units.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the significant modification to the ROP.

Action Taken by the Department

The AQD proposes to approve a significant modification to ROP No. 199600384, as requested by the stationary source. A final decision on the significant modification to the ROP will not be made until the public and any affected states have had an opportunity to comment on the proposed changes to the ROP and the United States Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the Southeast Michigan District Supervisor. The final determination for approval of the significant modification will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by the public, any affected states or the USEPA.



State Registration Number

N5984

Michigan Department of Environmental Quality
Air Quality Division

RENEWABLE OPERATING PERMIT

**December 13, 2005, STAFF REPORT
ADDENDUM FOR RULE 217(2) REOPENING
AND RULE 216 (3) SIGNIFICANT
MODIFICATION**

ROP Number

199600384

Purpose

A Staff Report dated August 24, 2001, was developed in order to set forth the applicable requirements and factual basis for the draft reopening to Renewable Operating Permit's (ROP) terms and conditions as required by R 336.1214(3). The purpose of this Staff Report Addendum is to summarize any significant comments received on the draft ROP reopening and significant modification during the 30-day public and affected state(s) comment period as described in R 336.1214(3) and (4). In addition, this addendum describes any changes to the proposed ROP reopening resulting from these pertinent comments.

General Information

Responsible Official:	1. Section No. 1 - Pine Tree Acres, Inc. Mr. James Logsdon, District Manager Phone Number: 586-749-9698 2. Section No. 2 - Sumpter Energy Associates Mr. Scott Salisbury, President Phone Number: 248-380-3920
AQD Contact:	Diane Kavanaugh Vetort, Senior Environmental Quality Analyst 586-753-3740

Summary of Pertinent Comments

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

Changes to the October 31, 2005, Draft ROP Reopening / Significant Modification

No changes were made to the draft ROP reopening.



State Registration Number

N5984

Michigan Department of Environmental Quality
Air Quality Division

RENEWABLE OPERATING PERMIT

ROP Number

199600384

**December 13, 2005 STAFF REPORT FOR RULE
216(2) MINOR MODIFICATION**

Purpose

On December 12, 2002, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), approved and issued Renewable Operating Permit (ROP) No. 199600384 to Pine Tree Acres Inc. (Landfill) and Sumpter Energy Associates (Landfill Gas Control) pursuant to R 336.1214. Once issued, a company is required to submit an application for changes to the ROP as described in R 336.1216. The purpose of this Staff Report is to describe the changes that were made to the ROP pursuant to R 336.1216(2).

General Information

Responsible Official:	1. Section No. 1 - Pine Tree Acres, Inc. Mr. James Logsdon, District Manager Phone Number: 586-749-9698 2. Section No. 2 - Sumpter Energy Associates Mr. Scott Salisbury, President Phone Number: 248-380-3920
AQD Contact:	Diane Kavanaugh Vetort, Senior Environmental Quality Analyst 586-753-3740
Application Number:	199600384
Date Application For Minor Modification Was Submitted:	January 26, 2006

Regulatory Analysis

The AQD has determined that the change requested by the stationary source meets the qualifications for a Minor Modification pursuant to R 336.1216(2).

Pine Tree Acres Inc. (PTA) submitted the requested modifications of the Draft RO permit in a letter dated January 26, 2006, during the EPA 45-day review period.

Description of Changes to the ROP

PTA submitted a letter dated September 13, 2004, requesting an ROP modification for EGOPENFLARE to remove an NSPS requirement not applicable to the source. The Company demonstrated that the EGOPENFLARE control equipment is not equipped with a bypass of the flare. Therefore, AQD reviewed the request and determined that based on US EPA guidance documents the NSPS requirement to install a device that records flow to or bypass of the flare was intended for flares with control bypass stacks. The AQD agreed to remove the requirement.

During technical review, PTA apparently submitted a letter dated April 18, 2005 with comments. It appears that the April letter was never received (letter was not located in AQD files) or the requested changes were inadvertently not made and the letter misplaced. In it they commented that an additional

NSPS requirement related to the NSPS determination above should be removed from the EGOPENFLARE Table. The AQD did not remove the requirement at that time.

The Company submitted a letter dated January 26, 2006, again requesting the modifications in the April 18, 2005 letter, and the additional modifications addressed in this addendum. The AQD agrees with the requested changes in the January 26, 2006 letter.

Modifications to Section 1: C-1 Emission Unit Summary Table

PTA installed a small skid mounted utility flare in 2005 to provide additional gas control capabilities at the landfill. The Table was changed to include a total of three utility flares instead of two.

Modifications to Section 1: Table E-1.1 Pollution Control Equipment description

Table E-1.1 was revised to remove the reference to the seven (7) internal combustion engines. The engines were determined to be exempt from Subpart WWW of the NSPS and from Subpart AAAA of the NESHAP. The description for the Skid-mounted two utility flare was revised to add the third utility flare.

Modifications to Section 1: Table E-1.2, VII.5

Table E-1.2 was revised to remove an obsolete submittal deadline.

Modifications to Section 1: Table E-1.3, VII.5

Table E-1.3 was revised to remove an obsolete submittal deadline.

Modifications to Section 1: Table E-1.4, VI.4.a

Table E-1.4 was revised to remove the Condition VI.4.a., with underlying applicable requirement of 40 CFR 60.758(c) (2). The AQD determined this requirement is no longer applicable since the EGOPENFLARE control does not have a bypass stack.

Compliance Status

The AQD finds that the stationary source is expected to be in compliance with all applicable requirements associated with the emission unit(s) involved with the change as of the date of approval of the Minor Modification to the ROP.

Action Taken by the DEQ

The AQD proposes to approve a Minor Modification to ROP No. 199600384, as requested by the stationary source. A final decision on the Minor Modification to the ROP will not be made until any affected states and the U.S. Environmental Protection Agency (USEPA) has been allowed 45 days to review the proposed changes to the ROP. The delegated decision maker for the AQD is the Permit Section Supervisor. The final determination for approval of the Minor Modification will be based on the contents of the permit application, a judgment that the stationary source will be able to comply with applicable emission limits and other requirements, and resolution of any objections by any affected states or the USEPA.

Derenzo and Associates, Inc.

ATTACHMENT E

**Sumpter Energy Associates - Pine Tree Landfill
LFG Chlorinated Compound Measurements
and
Fuel Combustion HCl Emission Factor Development**

Derenzo and Associates, Inc.

Environmental Consultants

January 20, 2005

Mr. Michael Laframboise
Manager of Operations
LANDFILL ENERGY SYSTEMS
29261 Wall Street
Wixom, MI 48393

Subject: Sumpter Energy Associates at Pine Tree Acres
Proposal to perform 2005 HCl LFG Tests
DAI Proposal No. P-05027

Dear Mr. Laframboise:

Derenzo and Associates, Inc. (Derenzo and Associates) is pleased to provide Sumpter Energy Associates with this proposal to perform sampling and analyses to measure the total chlorinated compound content of the gas use to fuel reciprocating internal combustion (IC) engine operations at the Pine Tree Acres landfill. The contents of this proposal are based on:

1. The experience of Derenzo and Associates with previous landfill gas (LFG) sampling and analyses provided Sumpter Energy Associates;
2. Results of hydrogen chloride (HCl) testing that was performed on the exhaust of IC engine nos. 6 and 7 in May 2004 and indicate the HCl emission rate of the engines is greater than 75% of the permitted emission limit; and
3. LFG testing requirements presented in Renewable Operating Permit No. 199600384 that was issued Sumpter Energy Associates that specifies:

Permittee shall sample the LFG prior to the ICEs and analyze the sample for chlorine compounds concurrent with the initial HCl performance stack test required under Condition III.B.7-9. This data will be used to verify the HCl emission limit as determined during most recent stack test or by alternate method approved by the District Supervisor, Air Quality Division. If the measured HCl emission rate is less than 75% of the applicable limit, no additional sampling is required for the term of the RO permit. If the measured HCl emission rate is at or greater than 75% of the emission limit, the Permittee shall calculate a HCl emission factor based on the concentration of chlorinated compounds in the LFG and the measured HCl emission rate and demonstrate compliance with the HCl emission limit on an annual basis by sampling and analysis of LFG.

SCOPE OF SERVICES

Derenzo and Associates will perform the following activities to complete the annual LFG total chlorinated compound and HCl sampling/measurement-testing project:

- Travel to Lenox Township, Michigan to obtain LFG samples using approved U.S. Environmental Protection Agency (USEPA) and Michigan Department of Environmental Quality, Air Quality Division (MDEQ-AQD) procedures.
- Collect LFG samples from the appropriate LFG fuel supply line of the Sumpter Energy Associates electricity generation facility. Stainless steel canisters will be used to collect duplicate LFG samples.
- Analyze the collected samples to determine concentrations of the LFG components listed in the attached document. The canister samples will be analyzed for volatile organics (EPA Method TO-15A).
- Present all LFG component concentrations and HCl emission factor calculations in a summary report. Field data sheet recordings, sampling and analytical procedures, certified laboratory results and quality assurance data will be provided in the report.

MATERIAL TO BE PROVIDED BY SUMPTER ENERGY ASSOCIATES

Derenzo and Associates requires that Sumpter Energy Associates provide:

- Appropriate operating conditions to obtain representative samples of the LFG fuel.
- Safe access to the LFG sampling site.

SCHEDULE

Derenzo and Associates will perform the LFG sampling portion of the project at a mutually acceptable time. A Sumpter Energy Associates representative will be contacted to schedule and confirm specific LFG sampling dates.

FEES

The estimated cost of the LFG total chlorinated compound sampling, analyses and HCl emission factor reporting project including travel, materials, and out-of-pocket expenses is \$xxx.

Derenzo and Associates, Inc.

Mr. Michael Laframboise
Sumpter Energy Associates

Page 3
January 20, 2005

Derenzo and Associates, Inc. looks forward to being of continued service to Sumpter Energy Associates.

Please contact me if you have any questions.

Sincerely,

DERENZO AND ASSOCIATES, INC.

David R. Derenzo
Services Director

Disk 4\SEA PTA May 2005 LFG HCl tests

AIR TOXICS LTD.

Method : Modified TO-15

Compound	Rpt. Limit (ppbv)
Freon 12	0.50
Freon 114	0.50
Chloromethane	2.0
Vinyl Chloride	0.50
1,3-Butadiene	0.50
Bromomethane	0.50
Chloroethane	0.50
Freon 11	0.50
Ethanol	2.0
Freon 113	0.50
1,1-Dichloroethene	0.50
Acetone	2.0
2-Propanol	2.0
Carbon Disulfide	0.50
3-Chloropropene	2.0
Methylene Chloride	0.50
Methyl tert-butyl ether	0.50
trans-1,2-Dichloroethene	0.50
Hexane	0.50
1,1-Dichloroethane	0.50
2-Butanone (Methyl Ethyl Ketone)	0.50
cis-1,2-Dichloroethene	0.50
Tetrahydrofuran	0.50
Chloroform	0.50
1,1,1-Trichloroethane	0.50
Cyclohexane	0.50
Carbon Tetrachloride	0.50
2,2,4-Trimethylpentane	0.50
Benzene	0.50
1,2-Dichloroethane	0.50
Heptane	0.50
Trichloroethene	0.50
1,2-Dichloropropane	0.50
1,4-Dioxane	2.0
Bromodichloromethane	0.50
cis-1,3-Dichloropropene	0.50
4-Methyl-2-pentanone	0.50
Toluene	0.50
trans-1,3-Dichloropropene	0.50
1,1,2-Trichloroethane	0.50
Tetrachloroethene	0.50
2-Hexanone	2.0
Dibromochloromethane	0.50

Reporting Limits cited do not take into account sample dilution due to canister pressurization.

AIR TOXICS LTD.

Method : Modified TO-15

Compound	Rpt. Limit (ppbv)
1,2-Dibromoethane (EDB)	0.50
Chlorobenzene	0.50
Ethyl Benzene	0.50
m,p-Xylene	0.50
o-Xylene	0.50
Styrene	0.50
Bromoform	0.50
Cumene	0.50
1,1,2,2-Tetrachloroethane	0.50
Propylbenzene	0.50
4-Ethyltoluene	0.50
1,3,5-Trimethylbenzene	0.50
1,2,4-Trimethylbenzene	0.50
1,3-Dichlorobenzene	0.50
1,4-Dichlorobenzene	0.50
alpha-Chlorotoluene	0.50
1,2-Dichlorobenzene	0.50
1,2,4-Trichlorobenzene	2.0
Hexachlorobutadiene	2.0

Surrogate	Method Limits
Toluene-d8	70-130
1,2-Dichloroethane-d4	70-130
4-Bromofluorobenzene	70-130

Reporting Limits cited do not take into account sample dilution due to canister pressurization.

Derenzo and Associates, Inc.

ATTACHMENT F

CAT 3616 Gas IC Engine Oil Use Records

Average Daily Oil Usage for 2001

The following is the average amount of oil consumed per day for each month beginning January 2001 based on the recorded monthly consumption

Kiefer Landfill internal combustion engines

	UNIT 1	UNIT 2	UNIT 3
JAN - 01	4.4	3.8	4
FEB - 01	3.8	3.9	5.1
MAR - 01	5.3	3.8	5.2
APR - 01	4.1	3.5	4.7
MAY - 01	5	1.2	5.8
JUN - 01	1.2	2.1	3.2
JUL - 01	5.4	5.7	4.8
AUG - 01	5.7	4.4	6.1
SEPT - 01	8.9	9.3	9.7
OCT - 01	10.3	10.4	13.1
NOV - 01	8.6	11	13.8
DEC - 01	12.6	11.1	12.1
JAN - 02	11.9	12.2	14.5
FEB - 02	18.6	17.4	16.3
MAR - 02	16	18.6	16.3
APR - 02	16.2	19.8	16.4