



John R. Kasich, Governor
Mary Taylor, Lt. Governor
Craig W. Butler, Director

10/25/2016

Danny Fannin
Franklin County Sanitary Landfill
4239 London-Groveport Road
Grove City, OH 43123

RE: FINALAIR POLLUTION PERMIT-TO-INSTALL
Facility ID: 0125001972
Permit Number: P0121147
Permit Type: OAC Chapter 3745-31 Modification
County: Franklin

Certified Mail

No	TOXIC REVIEW
No	PSD
No	SYNTHETIC MINOR TO AVOID MAJOR NSR
No	CEMS
No	MACT/GACT
No	NSPS
No	NESHAPS
No	NETTING
No	MAJOR NON-ATTAINMENT
No	MODELING SUBMITTED
No	MAJOR GHG
No	SYNTHETIC MINOR TO AVOID MAJOR GHG

Dear Permit Holder:

Enclosed please find a final Ohio Environmental Protection Agency (EPA) Air Pollution Permit-to-Install (PTI) which will allow you to install or modify the described emissions unit(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, we urge you to read it carefully. Because this permit contains conditions and restrictions, please read it very carefully. In this letter you will find the information on the following topics:

- **How to appeal this permit**
- **How to save money, reduce pollution and reduce energy consumption**
- **How to give us feedback on your permitting experience**
- **How to get an electronic copy of your permit**
- **What should you do if you notice a spill or environmental emergency?**

How to appeal this permit

The issuance of this PTI is a final action of the Director and may be appealed to the Environmental Review Appeals Commission pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. The appeal must be filed with the Commission within thirty (30) days after notice of the Director's action. The appeal must be accompanied by a filing fee of \$70.00, made payable to "Ohio Treasurer Josh Mandel," which the Commission, in its discretion, may reduce if by affidavit you demonstrate that payment of the full amount of the fee would cause extreme hardship. Notice of the filing of the appeal shall be filed with the Director within three (3) days of filing with the Commission. Ohio EPA requests that a copy of the appeal be served upon the Ohio Attorney General's Office, Environmental Enforcement Section. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
77 South High Street, 17th Floor
Columbus, OH 43215

How to save money, reduce pollution and reduce energy consumption

The Ohio EPA is encouraging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Compliance Assistance and Pollution Prevention at (614) 644-3469. Additionally, all or a portion of the capital expenditures related to installing air pollution control equipment under this permit may be eligible for financing and State tax exemptions through the Ohio Air Quality Development Authority (OAQDA) under Ohio Revised Code Section 3706. For more information, see the OAQDA website: www.ohioairquality.org/clean_air

How to give us feedback on your permitting experience

Please complete a survey at www.epa.ohio.gov/survey.aspx and give us feedback on your permitting experience. We value your opinion.

How to get an electronic copy of your permit

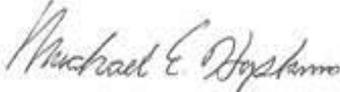
This permit can be accessed electronically via the eBusiness Center: Air Services in Microsoft Word format or in Adobe PDF on the Division of Air Pollution Control (DAPC) Web page, www.epa.ohio.gov/dapc by clicking the "Search for Permits" link under the Permitting topic on the Programs tab.

What should you do if you notice a spill or environmental emergency?

Any spill or environmental emergency which may endanger human health or the environment should be reported to the Emergency Response 24-HOUR EMERGENCY SPILL HOTLINE toll-free at (800) 282-9378. Report non-emergency complaints to the appropriate district office or local air agency.

If you have any questions regarding your permit, please contact Ohio EPA DAPC, Central District Office at (614)728-3778 or the Office of Compliance Assistance and Pollution Prevention at (614) 644-3469.

Sincerely,



Michael E. Hopkins, P.E.
Assistant Chief, Permitting Section, DAPC

Cc: U.S. EPA
Ohio EPA-CDO



FINAL

**Division of Air Pollution Control
Permit-to-Install
for
Franklin County Sanitary Landfill**

Facility ID: 0125001972
Permit Number: P0121147
Permit Type: OAC Chapter 3745-31 Modification
Issued: 10/25/2016
Effective: 10/25/2016



Division of Air Pollution Control
Permit-to-Install
for
Franklin County Sanitary Landfill

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Final Permit-to-Install
Franklin County Sanitary Landfill
Permit Number: P0121147
Facility ID: 0125001972
Effective Date: 10/25/2016

Authorization

Facility ID: 0125001972
Facility Description: Municipal landfill
Application Number(s): A0056182
Permit Number: P0121147
Permit Description: Chapter 31 modification to reflect the changes in operation including the decommissioning of the 4,500 cu.ft/min flare, the routing/treatment of LFG accomplished at the neighboring beneficial use facility and updating emission factors and short term emission limitations reflecting usage of the smaller, less efficient combustor.
Permit Type: OAC Chapter 3745-31 Modification
Permit Fee: \$1,250.00
Issue Date: 10/25/2016
Effective Date: 10/25/2016

This document constitutes issuance to:

Franklin County Sanitary Landfill
3851 London Groveport Road
Grove City, OH 43123

of a Permit-to-Install for the emissions unit(s) identified on the following page.

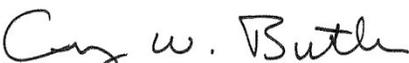
Ohio Environmental Protection Agency (EPA) District Office or local air agency responsible for processing and administering your permit:

Ohio EPA DAPC, Central District Office
50 West Town Street, 6th Floor
P.O. Box 1049
Columbus, OH 43216-1049
(614)728-3778

The above named entity is hereby granted a Permit-to-Install for the emissions unit(s) listed in this section pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the emissions unit(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency


Craig W. Butler
Director



Final Permit-to-Install
Franklin County Sanitary Landfill
Permit Number: P0121147
Facility ID: 0125001972
Effective Date: 10/25/2016

Authorization (continued)

Permit Number: P0121147

Permit Description: Chapter 31 modification to reflect the changes in operation including the decommissioning of the 4,500 cu.ft/min flare, the routing/treatment of LFG accomplished at the neighboring beneficial use facility and updating emission factors and short term emission limitations reflecting usage of the smaller, less efficient combustor.

Permits for the following Emissions Unit(s) or groups of Emissions Units are in this document as indicated below:

Emissions Unit ID:	P901
Company Equipment ID:	P901
Superseded Permit Number:	P0104010
General Permit Category and Type:	Not Applicable



Final Permit-to-Install
Franklin County Sanitary Landfill
Permit Number: P0121147
Facility ID: 0125001972
Effective Date: 10/25/2016

A. Standard Terms and Conditions

1. Federally Enforceable Standard Terms and Conditions

- a) All Standard Terms and Conditions are federally enforceable, with the exception of those listed below which are enforceable under State law only:
 - (1) Standard Term and Condition A.2.a), Severability Clause
 - (2) Standard Term and Condition A.3.c) through A. 3.e) General Requirements
 - (3) Standard Term and Condition A.6.c) and A. 6.d), Compliance Requirements
 - (4) Standard Term and Condition A.9., Reporting Requirements
 - (5) Standard Term and Condition A.10., Applicability
 - (6) Standard Term and Condition A.11.b) through A.11.e), Construction of New Source(s) and Authorization to Install
 - (7) Standard Term and Condition A.14., Public Disclosure
 - (8) Standard Term and Condition A.15., Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations
 - (9) Standard Term and Condition A.16., Fees
 - (10) Standard Term and Condition A.17., Permit Transfers

2. Severability Clause

- a) A determination that any term or condition of this permit is invalid shall not invalidate the force or effect of any other term or condition thereof, except to the extent that any other term or condition depends in whole or in part for its operation or implementation upon the term or condition declared invalid.
- b) All terms and conditions designated in parts B and C of this permit are federally enforceable as a practical matter, if they are required under the Act, or any of its applicable requirements, including relevant provisions designed to limit the potential to emit of a source, are enforceable by the Administrator of the U.S. EPA and the State and by citizens (to the extent allowed by section 304 of the Act) under the Act. Terms and conditions in parts B and C of this permit shall not be federally enforceable and shall be enforceable under State law only, only if specifically identified in this permit as such.

3. General Requirements

- a) Any noncompliance with the federally enforceable terms and conditions of this permit constitutes a violation of the Act, and is grounds for enforcement action or for permit revocation, revocation and re-issuance, or modification.
- b) 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

federally enforceable terms and conditions of this permit.

- c) This permit may be modified, revoked, or revoked and reissued, for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or revocation, or of a notification of planned changes or anticipated noncompliance does not stay any term and condition of this permit.
- d) This permit does not convey any property rights of any sort, or any exclusive privilege.
- e) The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying or revoking this permit or to determine compliance with this permit. Upon request, the permittee shall also furnish to the Director or an authorized representative of the Director, copies of records required to be kept by this permit. For information claimed to be confidential in the submittal to the Director, if the Administrator of the U.S. EPA requests such information, the permittee may furnish such records directly to the Administrator along with a claim of confidentiality.

4. Monitoring and Related Record Keeping and Reporting Requirements

- a) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall maintain records that include the following, where applicable, for any required monitoring under this permit:
 - (1) The date, place (as defined in the permit), and time of sampling or measurements.
 - (2) The date(s) analyses were performed.
 - (3) The company or entity that performed the analyses.
 - (4) The analytical techniques or methods used.
 - (5) The results of such analyses.
 - (6) The operating conditions existing at the time of sampling or measurement.
- b) Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.
- c) Except as may otherwise be provided in the terms and conditions for a specific emissions unit, the permittee shall submit required reports in the following manner:
 - (1) Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the Ohio EPA DAPC, Central District Office.
 - (2) Quarterly written reports of (i) any deviations from federally enforceable emission limitations, operational restrictions, and control device operating parameter limitations, excluding deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, that have been detected

by the testing, monitoring and recordkeeping requirements specified in this permit, (ii) the probable cause of such deviations, and (iii) any corrective actions or preventive measures taken, shall be made to the Ohio EPA DAPC, Central District Office. The written reports shall be submitted (i.e., postmarked) quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. See A.15. below if no deviations occurred during the quarter.

- (3) Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the Ohio EPA DAPC, Central District Office every six months, by January 31 and July 31 of each year for the previous six calendar months. If no deviations occurred during a six-month period, the permittee shall submit a semi-annual report, which states that no deviations occurred during that period.
 - (4) This permit is for an emissions unit located at a Title V facility. Each written report shall be signed by a responsible official certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.
- d) The permittee shall report actual emissions pursuant to OAC Chapter 3745-78 for the purpose of collecting Air Pollution Control Fees.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction, i.e., upset, of any emissions units or any associated air pollution control system(s) shall be reported to the Ohio EPA DAPC, Central District Office in accordance with paragraph (B) of OAC rule 3745-15-06. (The definition of an upset condition shall be the same as that used in OAC rule 3745-15-06(B)(1) for a malfunction.) The verbal and written reports shall be submitted pursuant to OAC rule 3745-15-06.

Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emission unit(s) that is (are) served by such control system(s).

6. Compliance Requirements

- a) All applications, notifications or reports required by terms and conditions in this permit to be submitted or "reported in writing" are to be submitted to Ohio EPA through the Ohio EPA's eBusiness Center: Air Services web service ("Air Services"). Ohio EPA will accept hard copy submittals on an as-needed basis if the permittee cannot submit the required documents through the Ohio EPA eBusiness Center. In the event of an alternative hard copy submission in lieu of the eBusiness Center, the post-marked date or the date the document is delivered in person will be recognized as the date submitted. Electronic submission of applications, notifications or reports required to be submitted to Ohio EPA fulfills the requirement to submit the required information to the Director, the appropriate Ohio EPA District Office or contracted local air agency, and/or any other individual or organization specifically identified as an additional recipient identified in this permit unless otherwise specified. Consistent with OAC rule 3745-15-03, the electronic signature date shall constitute the date that the required application, notification or report is considered to be "submitted". Any document requiring signature may be represented by entry of the personal identification number (PIN) by responsible official as part of

the electronic submission process or by the scanned attestation document signed by the Authorized Representative that is attached to the electronically submitted written report.

Any document (including reports) required to be submitted and required by a federally applicable requirement in this permit shall include a certification by a Responsible Official that, based on information and belief formed after reasonable inquiry, the statements in the document are true, accurate, and complete.

- b) Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Director of the Ohio EPA or an authorized representative of the Director to:
- (1) At reasonable times, enter upon the permittee's premises where a source is located or the emissions-related activity is conducted, or where records must be kept under the conditions of this permit.
 - (2) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit, subject to the protection from disclosure to the public of confidential information consistent with ORC section 3704.08.
 - (3) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
 - (4) As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit and applicable requirements.
- c) The permittee shall submit progress reports to the Ohio EPA DAPC, Central District Office concerning any schedule of compliance for meeting an applicable requirement. Progress reports shall be submitted semiannually or more frequently if specified in the applicable requirement or by the Director of the Ohio EPA. Progress reports shall contain the following:
- (1) Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
 - (2) An explanation of why any dates in any schedule of compliance were not or will not be met, and any preventive or corrective measures adopted.

7. Best Available Technology

As specified in OAC Rule 3745-31-05, new sources that must employ Best Available Technology (BAT) shall comply with the Applicable Emission Limitations/Control Measures identified as BAT for each subject emissions unit.

8. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

9. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a) Reports of any required monitoring and/or recordkeeping of state-only enforceable information shall be submitted to the Ohio EPA DAPC, Central District Office.
- b) Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from state-only required emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the Ohio EPA DAPC, Central District Office. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

10. Applicability

This Permit-to-Install is applicable only to the emissions unit(s) identified in the Permit-to-Install. Separate application must be made to the Director for the installation or modification of any other emissions unit(s) not exempt from the requirement to obtain a Permit-to-Install.

11. Construction of New Sources(s) and Authorization to Install

- a) This permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. This permit does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the application and terms and conditions of this permit. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of this permit does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Issuance of this permit is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.
- b) If applicable, authorization to install any new emissions unit included in this permit shall terminate within eighteen months of the effective date of the permit if the owner or operator has not undertaken a continuing program of installation or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the permittee shows good cause for any such extension.
- c) The permittee may notify Ohio EPA of any emissions unit that is permanently shut down (i.e., the emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31) by submitting a certification from the authorized official that identifies the date on which the emissions unit was permanently shut down. Authorization to operate the affected emissions unit shall cease upon the date certified by the authorized official that the emissions unit was permanently shut down. At a minimum, notification of permanent shut down

shall be made or confirmed by marking the affected emissions unit(s) as "permanently shut down" in "Air Services" along with the date the emissions unit(s) was permanently removed and/or disabled. Submitting the facility profile update electronically will constitute notifying the Director of the permanent shutdown of the affected emissions unit(s).

- d) The provisions of this permit shall cease to be enforceable for each affected emissions unit after the date on which an emissions unit is permanently shut down (i.e., emissions unit has been physically removed from service or has been altered in such a way that it can no longer operate without a subsequent "modification" or "installation" as defined in OAC Chapter 3745-31). All records relating to any permanently shutdown emissions unit, generated while the emissions unit was in operation, must be maintained in accordance with law. All reports required by this permit must be submitted for any period an affected emissions unit operated prior to permanent shut down. At a minimum, the permit requirements must be evaluated as part of the reporting requirements identified in this permit covering the last period the emissions unit operated.

Unless otherwise exempted, no emissions unit certified by the responsible official as being permanently shut down may resume operation without first applying for and obtaining a permit pursuant to OAC Chapter 3745-31 and OAC Chapter 3745-77 if the restarted operation is subject to one or more applicable requirements.

- e) The permittee shall comply with any residual requirements related to this permit, such as the requirement to submit a deviation report, air fee emission report, or other any reporting required by this permit for the period the operating provisions of this permit were enforceable, or as required by regulation or law. All reports shall be submitted in a form and manner prescribed by the Director. All records relating to this permit must be maintained in accordance with law.

12. Permit-To-Operate Application

The permittee is required to apply for a Title V permit pursuant to OAC Chapter 3745-77. The permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if operation of the proposed new or modified source(s) as authorized by this permit would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d) must be obtained before operating the source in a manner that would violate the existing Title V permit requirements.

13. Construction Compliance Certification

The applicant shall identify the following dates in the "Air Services" facility profile for each new emissions unit identified in this permit.

- a) Completion of initial installation date shall be entered upon completion of construction and prior to start-up.
- b) Commence operation after installation or latest modification date shall be entered within 90 days after commencing operation of the applicable emissions unit.

14. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

15. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations

If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

16. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable permit-to-install fees within 30 days after the issuance of any permit-to-install. The permittee shall pay all applicable permit-to-operate fees within thirty days of the issuance of the invoice.

17. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The new owner must update and submit the ownership information via the "Owner/Contact Change" functionality in "Air Services" once the transfer is legally completed. The change must be submitted through "Air Services" within thirty days of the ownership transfer date.

18. Risk Management Plans

If the permittee is required to develop and register a risk management plan pursuant to section 112(r) of the Clean Air Act, as amended, 42 U.S.C. 7401 et seq. ("Act"), the permittee shall comply with the requirement to register such a plan.

19. Title IV Provisions

If the permittee is subject to the requirements of 40 CFR Part 72 concerning acid rain, the permittee shall ensure that any affected emissions unit complies with those requirements. Emissions exceeding any allowances that are lawfully held under Title IV of the Act, or any regulations adopted thereunder, are prohibited.



Final Permit-to-Install
Franklin County Sanitary Landfill
Permit Number: P0121147
Facility ID: 0125001972
Effective Date: 10/25/2016

B. Facility-Wide Terms and Conditions

1. All the following facility-wide terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only:
 - a) None.
2. The following emissions unit contained in this permit is subject to New Source Performance Standards (NSPS) 40 CFR Part 60, Subpart WWW, and the National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR Part 63, Subpart AAAA, Maximum Achievable Control Technology (MACT): P901 (Landfill Operations).

The complete NSPS and NESHAP/MACT requirements, including the NSPS and NESHAP/MACT General Provisions may be accessed from the Electronic Code of Federal Regulations (e-CFR) website www.ecfr.gov by contacting the Ohio EPA, Division of Air Pollution Control.

3. National Emission Standards for Hazardous Air Pollutants (NESHAP) for existing and new municipal solid waste (MSW) landfills are established within 40 CFR Part 63, Subpart AAAA (§63.1930). This subpart requires all landfill described in §63.1935 to meet the requirements of 40 CFR Part 60, Subpart Cc or 40 CFR Part 60, Subpart WWW and requires timely control of bioreactors. This subpart also requires such landfills to meet the Startup, Shutdown, and Malfunction (SSM) requirements contained in the general provisions of this subpart and provides that compliance with operating conditions is demonstrated by parameter monitoring results within specified ranges as well as additional reporting requirements.
4. Pursuant to §63.1940, an affected source is defined as follows:
 - a) The affected source of this subpart is a MSW landfill as defined in §63.1990, and meeting the criteria contained in §63.1935 (a) or (b). The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor.
 - b) A new affected source of this subpart is an affected source that commenced construction or reconstruction (as defined in 40 CFR Part 63, Subpart A) after November 7, 2000.
5. Franklin County Sanitary Landfill (FCSL) is an existing source per §63.1940. §63.1945(d) states "If your landfill is an existing affected source and is a major source, or is co-located with a major source, you must comply with the requirements contained in §63.1955 (b) and §63.1960 through §63.1980 by the date your landfill is required to install a gas collection and control system specified in §60.752(b)(2), the Federal Plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 13, 2004, whichever occurs later." As such, compliance with this subpart was required by January 13, 2004.
6. Pursuant to §63.1950, the permittee is no longer required to comply with the requirements of this subpart when they are no longer required to apply controls as specified in §60.752(b)(2)(v).
7. Pursuant to §63.1955, the permittee is required to comply with the requirements of 40 CFR Part 60, Subpart WWW. If the permittee is required by §60.752(b)(2) to install a gas collection and control system, the permittee must comply with §63.1960 through §63.1985 as well as the general provisions specified in Table 1 of Subpart WWW. For approval of collection and control systems, including alternatives to operational standards, test methods, procedures, compliance measures, monitoring, record keeping or reporting provisions, the permittee must follow the procedures contained in §60.753(b)(2). If alternatives have already been approved through 40 CFR Part 60, Subpart WWW,

then these alternatives can be used to comply with this subpart, except that all affected sources must comply with the SSM requirements contained in 40 CFR Part 63, Subpart A, specified in Table 1, and all affected sources must submit compliance reports every 6 (six) months as specified in §63.1980 (a) and (b). These reports include information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors are determined by using a 3 (three) hour monitoring block average.

8. Pursuant to §63.1960, compliance is determined through the same means as applicable for 40 CFR Part 60, Subpart WWW. This includes performance testing, monitoring the gas collection and control system, continuous parameter monitoring and other credible evidence. Additionally, continuous parameter monitoring data, collected as described in §60.756(b)(1), (c)(1) and (d), are used to demonstrate compliance with the operating conditions for the gas collection and control system. If a deviation occurs, the permittee has failed to meet the control device operating conditions described in this subpart and have deviated from the requirements of this subpart. The permittee is responsible for developing and implementing a SSM plan according to §63.6(e)(3). A copy of the SSM plan shall be maintained on site. Failure to develop, implement and/or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.
9. Pursuant to §63.1965, “deviation” is defined in §63.1990. Deviations regarding the landfill monitoring and SSM plan requirements include the scenarios described in (a) through (c), below;
 - a) A deviation occurs when the control device operating parameters described in §60.758(c)(1) are exceeded;
 - b) A deviation occurs when 1 (one) or more of the hours during the 3 (three) hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least 3 (three) 15-minute monitoring periods within said hour; and
 - c) A deviation occurs when a SSM plan is not developed, implemented and/or maintained on site.
10. Pursuant to §63.1975, averages are calculated in the same way as they are calculated for 40 CFR Part 60, Subpart WWW, except for the scenarios listed in (a) through (d), below, which are not to be included in the averaging for this subpart;
 - a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level)/high level adjustments;
 - b) Startups;
 - c) Shutdowns; and
 - d) Malfunctions
11. Pursuant to §63.1980(a), the permittee shall keep records and reports as specified in 40 CFR Part 60, Subpart WWW, with the exception of the semi-annual report described in §60.757(f).
12. Pursuant to §63.1980(b), the permittee shall also keep records and submit reports as specified in §60.1 through §60.19 (General Provisions) and this subpart, as shown in Table 1. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.
13. Pursuant to §63.1985(a), this subpart can be implemented and enforced by the U.S. EPA or Ohio EPA.

14. Pursuant to §63.1990, terms used in this subpart are defined in the Clean Air Act, 40 CFR Part 60, Subpart A, Subpart Cc, and Subpart WWW; 40 CFR Part 62, Subpart GGG, and Subpart A of this part, and this section that follows:
- a) Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:
 - (1) fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;
 - (2) fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
 - (3) fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM, regardless of whether or not such failure is permitted by this subpart.
 - b) Emissions limitation means any emission limit, opacity limit, operating limit, or visible emissions limit.
 - c) EPA approved State plan means a State plan that EPA has approved based on the requirements in 40 CFR Part 60, Subpart B to implement and enforce 40 CFR Part 60, Subpart Cc. An approved State plan becomes effective on the date specified in the notice published in the Federal Register announcing EPA's approval.
 - d) Federal plan means the EPA plan to implement 40 CFR Part 60, Subpart Cc for existing MSW landfills located in States and Indian country where State plans or tribal plans are not currently in effect. On the effective date of an EPA approved State or tribal plan, the Federal plan no longer applies. The Federal plan is found at 40 CFR Part 62, Subpart GGG.
 - e) Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion.
 - f) Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

15. Pursuant to §63.1955 and §63.1980, the permittee must meet the applicable requirements contained in the following table:

Table 1 of Subpart AAAA of Part 63: Applicability of NESHAP General Provisions to Subpart AAAA		
Part 63 Citation	Description	Explanation
63.1(a)	Applicability: general applicability of NESHAP in this part.	Affected sources are already subject to the provisions of paragraphs (a)(10)-(12) through the same provisions under 40 CFR, Part 60 Subpart A.
63.1(b)	Applicability determination for stationary sources.	
63.1(e)	Title V permitting.	
63.2	Definitions.	
63.4	Prohibited activities and circumvention	Affected sources are already subject to the provisions of paragraph (b) through the same provisions under 40 CFR Part 60, Subpart A.
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources.	
63.6(e)	Operation and maintenance requirements, startup, shutdown and malfunction plan provisions.	
63.6(f)	Compliance with nonopacity emission standards.	Affected sources are already subject to the provisions of paragraphs (f)(1) and (2)(i) through the same provisions Under 40 CFR Part 60, Subpart A.
63.10(b)(2)(i)-(b)(2)(v)	General record keeping requirements.	
63.10(d)(5)	If actions taken during a startup, shutdown and malfunction plan are consistent with the procedures in the startup, shutdown and malfunction plan, this information shall be included in a semi-annual startup, shutdown and malfunction plan report. Any time an action taken during a startup, shutdown and malfunction plan is not consistent with the startup, shutdown and malfunction plan, the source shall report actions taken within 2 working days after commencing such actions, followed by a letter 7 days after the event.	

Part 63 Citation	Description	Explanation
63.12(a)	These provisions do not preclude the State from adopting and enforcing any standard, limitation, etc., requiring permits or requiring emissions reductions in excess of those specified.	
63.15	Availability of information and confidentiality.	

16. The following insignificant emission units are located at this facility:

EU ID	Operations, Property and/or Equipment Description
P002	Posi shell silo (PTI P0104010)
P003	Scalehouse generator - distillate oil - low sulfur (PBR06070)

Each insignificant emissions unit at this facility must comply with all applicable State and Federal regulations, as well as any emission limitations and/or control requirements contained within the identified permit to install for the emission unit.

17. The Ohio EPA has determined that this facility may be/become subject to the requirements of 40 CFR Part 60, Subpart XXX, the Standards of Performance for Municipal Solid Waste Landfills. The requirements of this rule, applicable to municipal solid waste landfills that commence construction, reconstruction, or modification after July 17, 2014 can be accessed via the Internet from the Electronic code of Federal Regulations (e-CFR) website <http://www.ecfr.gov/> or by contacting Ohio EPA, CDO, DAPC.



Final Permit-to-Install
Franklin County Sanitary Landfill
Permit Number: P0121147
Facility ID: 0125001972
Effective Date: 10/25/2016

C. Emissions Unit Terms and Conditions

1. P901, P901

Operations, Property and/or Equipment Description:

Landfill

- a) The following emissions unit terms and conditions are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (1) b)(1)h., d)(17), d)(18), d)(19), d)(20) and e)(5)
- b) Applicable Emissions Limitations and/or Control Requirements
 - (1) The specific operation(s), property, and/or equipment that constitute each emissions unit along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures are identified below. Emissions from each unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
a.	OAC rule 3745-31-05(A)(3) (PTI P0121147)	Emissions from the landfill operation shall not exceed: 157.40 tons per year of fugitive non-methane organic compounds (NMOC) 11,124.00 tons per year of fugitive methane (CH ₄) 15.00 tons per year of fugitive Hazardous Air Pollutant (HAP) 1.00 ton per year of fugitive particulate emissions (PE) 61.4 tons per year of fugitive volatile organic compounds (VOC) Visible emissions of fugitive dust from landfill operations shall not exceed twenty percent opacity as a three-minute average Best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust [See b)(2)p. through b)(2)t.] Emissions from the two open flares and all other control devices (including

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		<p>emergency use of the decommissioned 4,500 ft³/min enclosed combustor) shall not exceed:</p> <p>21.40 pounds per hour (lbs/hr) nitrogen oxide (NO_x)</p> <p>90.80 lbs/hr carbon monoxide (CO)</p> <p>5.80 lbs/hr and 15.44 tons per year of sulfur dioxide (SO₂)</p> <p>3.00 lbs/hr and 7.90 tons per year of NMOC</p> <p>1.20 lbs/hr and 3.10 tons per year of VOC</p> <p>2.80 lbs/hr and 7.45 tons per year of hydrogen chloride (HCl)</p> <p>5.90 lbs/hr and 15.87 tons per year of particulate emissions less than 10 microns in diameter (PM₁₀)</p> <p>There shall be no visible emissions from any open flare, except for periods not to exceed a total of 5 (five) minutes, during any 2 (two) consecutive hours of observation.</p> <p>Visible emissions from any control device, other than an open flare, shall not exceed 10% opacity as a 6-minute average.</p> <p>Emissions from the decommissioned 4,500 ft³/min Enclosed Combustor shall not exceed:</p> <p>8.90 lbs/hr NO_x</p> <p>29.70 lbs/hr CO</p> <p>2.26 lbs/hr and 9.90 tons per year SO₂</p> <p>1.20 lbs/hr and 5.10 tons per year NMOC</p> <p>0.50 lbs/hr and 2.00 tons per year VOC</p>

	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
		1.09 lbs/hr and 4.77 tons per year HCl 2.32 lbs/hr and 10.17 tons per year PM ₁₀ Note: All particulate emissions from the enclosed combustor are PM ₁₀ Visible emissions from the Enclosed Combustor shall not exceed 10% opacity as a 6-minute average See b)(2)a.
b.	OAC rule 3745-31-05(D)	NO _x emissions from all emission units located at this facility shall not exceed 99.00 tons per rolling 12-month period CO emissions from all emission units located at this facility shall not exceed 249.00 tons per rolling 12-month period See c)(1), c)(9), d)(11) and e)(6)
c.	40 CFR Part 60, Subpart WWW 40 CFR 60.750 – 60.759	See b)(2)b. – b)(2)o.
d.	40 CFR Part 63, Subpart AAAA 40 CFR 63.1930 – 63.1990	Startup, Shutdown and Malfunction requirements (63.1955) and records/reports (63.1980)
e.	40 CFR Part 63, Subpart A 40 CFR 63.6(e)(3)	Table 1 to 40 CFR Part 63, Subpart AAAA designates which sections of 40 CFR part 63, Subpart A (General Provisions) apply.
f.	OAC rule 3745-17-08(B)	This facility is not located within an "Appendix A" area as identified in OAC rule 3745-17-08. Therefore, pursuant to OAC rule 3745-17-08(A), this emissions unit is exempt from the requirements of OAC rule 3745-17-08(B).
g.	OAC rule 3745-17-07(B)(1)	Exempt from requirements pursuant to OAC rule 3745-17-11(B)(11)(e)
h.	ORC 3704.03 F(4)(C) and OAC rule 3745-114	See d)(17), d)(18), d)(19), d)(20) and e)(5)

(2) Additional Terms and Conditions

a. This PTI reflects the following changes:

- i. reflect the operational changes from flaring LFG to sending the LFG off-site to a third party for treatment/beneficial use;

- ii. as the facility flares less LFG, use of the enclosed, 4,500ft³/min combustor has decreased to the point of decommissioning. However, the enclosed combustor will remain on-site in the event of a large scale failure resulting in the need to flare LFG for an extended period of time; and
 - iii. update emission factors, operational status and increase the short term allowables as the facility flares less gas, but does so less efficiently in the open flares when compared to the larger, decommissioned (physically disconnected from GCCS), enclosed combustor.
- b. The calculated NMOC emission rate for this facility is greater than 50 megagrams per year (Mg/yr), obligating the permittee to install and operate a gas collection and control system (GCCS) that captures the gas generated within the landfill as described below. The GCCS shall satisfy the following:
- i. the GCCS shall be designed to handle the maximum expected gas flow from the entire area of the landfill that warrants control over the intended use period of the GCCS;
 - ii. the GCCS shall collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for 5 (five) years or more if active, or 2 (two) years or more if closed or at final grade; and
 - iii. the GCCS shall be designed and operated sufficiently to minimize off-site migration of subsurface LFG.
- c. If the permittee seeks to demonstrate compliance utilizing a non-conforming active collection system, the permittee shall include a demonstration that satisfactorily shows off-site migration of LFG is being controlled.
- d. The most recent design plan update was submitted on August 19, 2010. The amended design plan includes appropriate alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping and/or reporting requirements/provisions of Sections 60.753 through 60.758, as proposed by the permittee. The GCCS design plan meets the specifications for an "active collections system" as specified in Section 60.759.

An amended GCCS design plan must be provided pursuant to a change in the permitted capacity of the landfill or any substantive modification to the final grade of waste that would impact the GCCS design, prior to each new area becoming subject to control requirements.

Alternative systems may be necessary due to the site-specific features that must be considered with a GCCS. The permittee must notify the Ohio EPA, CDO, DAPC when an alternative design is determined to be necessary for compliance.

- e. In order to comply with the operational standards for a GCCS [60.753(a)], the permittee shall place each well or design component as specified in the approved design plan. 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 (five) years or more if active, or 2 (two) years or more if closed or at final grade.

- f. In order to comply with the emission standards and design plan requirements [60.752(b)(2)(i)], the permittee shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at sufficient density throughout all gas producing areas using the following procedures (i, ii and iii, below) unless alternative procedures have been approved by the Director;
- i. The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. 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;
 - ii. The sufficient density of gas collection devices determined above shall address landfill gas migration issues and augmentation of the GCCS through the use of active or passive systems at the landfill perimeter or exterior; and
 - iii. The placement of gas collection devices shall control all gas producing areas except as follows:
 - (a) Any segregated areas of non-degradable material may be excluded from the GCCS requirements if up-to-date plot maps showing each uniquely identified existing and planned collector in the system, their location, and the type of waste deposited in each area [60.758(d)]. The documentation shall provide the nature of the waste, date of deposition, location and amount of non-degradable material deposited in the area and be provided to the Director upon request; and
 - (b) Any non-productive areas of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1% (one) of the total amount of NMOC emissions from the landfill. The amount, location and age of the waste material shall be documented and provided to Ohio EPA, CDO, DAPC upon request. A separate NMOC emission estimate shall be made for each section proposed for exclusion, and the sum of those sections shall be compared to the NMOC emission estimate for the entire facility. Emissions for each section shall be calculated using the following equation:

$$Q_i = 2 * k * L_o * M_i * (e^{-k t_i} * (C_{nmoc}) * (3.6 \times 10^{-9}))$$

where:

Q_i = NMOC emission rate from the i^{th} section, in megagrams per year

k = methane generation rate constant, in year⁻¹

L_o = methane generation potential, in cubic meters per megagram solid waste

M_i = mass of the degradable solid waste in the i^{th} section, in megagram

t_i = age of the solid waste in the i^{th} section, in years

C_{nmoc} = concentration of nonmethane organic compounds, in parts per million by volume
 3.6×10^{-9} = conversion factor

- g. The values for “ k ”, “ L_o ” and “ C_{nmoc} ”, used above, are determined through field testing, if field testing has been performed to determine NMOC emission rate or the radii of influence. If field testing has not been performed, values for “ k ”, “ L_o ” and “ C_{nmoc} ” are as follows:

$k^* = 0.05$ per year

$L_o = 170$ cubic meters per megagram

$C_{nmoc} = 4,000$ ppm (by volume as hexane)

*For landfills located in geographical areas with a thirty-year annual average precipitation of less than 25 inches, as measured at the nearest representative official meteorological site, the “ k ” value shall be replaced with 0.02 per year.

- h. In order to comply with the design plan and construction requirements for the GCCS [60.752(b)(2)(i)(A)], the permittee shall construct the GCCS using the following practices (i, ii, and iii below):

i. The LFG 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 GCCS 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;

ii. 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 GCCS, or gas into the air. Any gravel used around the pipe perforations should be of a dimension so as not to penetrate or block perforations; and

iii. Collection devices may be connected to the GCCS 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 1 (one) sampling port. The collection devices shall be constructed of PVE, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.

- i. The GCCS may be capped or removed provided that all of the following conditions are met (i, ii and iii, below):
 - i. The landfill is a closed landfill as defined in 40 CFR 60.751, and a closure report submitted to Ohio EPA, CDO, DAPC as provided in 60.757(d);
 - ii. The GCCS has been in operation for a minimum of 15 (fifteen) years; and
 - iii. The calculated [per 40 CFR 60.754(b)] NMOC gas produced by the landfill is less than 50 megagrams per year (MG/yr) on 3 (three) successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.
- j. When the landfill is permanently closed [40 CFR 60.751], a closure notification shall be submitted to Ohio EPA, CDO, DAPC, as provided in 40 CFR 60.757(d).
- k. The GCCS shall be routed to a control system that complies with one of the following options (i, ii, or iii, below):
 - i. An open flare designed and operated in accordance with 40 CFR 60.18 as follows:
 - (a) The flare shall be designed for and operated with no visible emissions except for periods not to exceed a total of 5 (five) minutes during any 120-minute (2 hour) observation period;
 - (b) The flare shall be operated with a flame present at all times, as specified by 40 CFR 60.18(f); and
 - (c) The permittee shall comply with either (c)(i) and (c)(ii) or c(iii), below:
 - (i) Flares shall attain a net heating value 11.2MJ/scm (300 BTU/scf) or greater for the gas being combusted if steam or air-assisted, or a net heating value of 7.45 MJ/scm (200 BTU/scf) or greater if the flare is not assisted. The net heating value of the gas being combusted shall be determined as specified in 40 CFR 60.18(f)(3) or by utilizing other methods approved by Ohio EPA, CDO, DAPC in accordance with 40 CFR Part 60, Subpart WWW [see f)(16) for current net heating value equation];
 - (ii) Steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity of less than 18.3 m/sec (60 ft/sec), except for the following (A and B, below)

- a) Steam-assisted and non-assisted flares shall be designed for and operated with an exit velocity of less than or equal to 18.3 m/sec but less than 122 m/sec are allowed if the net heating value of the gas being combusted is greater than 37.3 MJ/scm (1,000 BTU/scf); and
- b) Steam-assisted and non-assisted flares shall be designed for an operated with an exit velocity of less than the velocity (V_{max}) and less than 122 m/sec are allowed, as determined by 60.18(f)(5) using the heating value (H_t) from 60.18(f)(3) [see f)(17) for exit velocity equation].
- (iii) Flares shall be used that have a diameter of 3 (three) inches or greater, are non-assisted, have a hydrogen (H) content of 8.0% (eight) by volume, or greater, and are designed for and operated with an exit velocity less than 37.3 m/sec (122 ft/sec) and less than the velocity (V_{max}) as determined by 60.18(c)(3)(i)(A) and as referenced in f)(18).
- l. Air-assisted flares shall be designed for an operated with an exit velocity of less than the velocity (V_{max}), determined using the equation in f)(19).
- m. A GCCS, 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 (ppm), by volume, dry basis as hexane at 3 (three) percent oxygen. The reduction efficiency (ppm) shall be established by an initial performance test to be completed no later than 180 days after the initial startup, or restart of a decommissioned control device, of the approved control system using the test methods specified in 60.754(d) and Section f) of this permit (Testing Requirements).
 - i. If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.
 - ii. The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are established in 40 CFR 60.756.
- n. Route the collected LFG to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the GCCS shall be subject to the requirements of 40 CFR 60.752(b)(2)(iii)(A) or 60.752(b)(2)(iii)(B).

The neighboring beneficial use facility that receives the collected LFG meets the requirements for "treatment", including filtering, compression and chilling in accordance with 40 CFR 60.752(b)(2)(iii)(A) or 60.752(b)(2)(iii)(B). There are 0 (zero) atmospheric vents prior to the treatment system.

- o. The emission limitations for the control device(s) has/have been established based upon the landfills potential to emit as predicted by US EPA's landfill gas estimation program (LANDGEM), AP-42 emission factors, and accepted industry assumptions. These maximum, worst-case emissions are expected to occur after 2028 and only if the facility were to accept its specified maximum daily waste each day. The facility has committed to installing a larger capacity control device within 180 days of triggering both i and ii below:
- i. sustained average total flow rate (scf/min) which is greater than 95% of the total capacity of the commissioned control devices; and
 - ii. the collection system shall be expanded in accordance with 40 CFR 60.753(a) within 180 days, when the newly collected LFG volume exceeds/is anticipated to exceed the control device capacity.
- p. The permittee shall ensure that solid wastes are deposited, spread, and compacted in such a manner as to minimize or prevent visible emissions of fugitive dust. All truckloads of solid waste shall be unloaded in a manner which will minimize the drop height of the solid wastes. Any dusty construction materials, soils, or wastes likely to become airborne shall be watered as necessary, prior to or during dumping operations, in order to minimize or eliminate the emissions of fugitive dust. Watering shall be conducted in such a manner as to avoid the pooling of liquids and runoff. No dusty material shall be dumped during periods of high wind speed, unless the material has been treated to minimize or prevent the emissions of fugitive dust.
- q. The following material handling activities are covered by this permit and subject to the above-mentioned PE limitation and the visible emission limitations specified in b)(1)a., above:
- Waste handling (deposit, spread and compact)
 - Daily and intermediate cover handling
 - Wind erosion from landfill and storage piles
 - General earthmoving, soil handling and aggregate handling during landfill construction activities
- r. The permittee shall employ best available control measures on all activities listed in (i), above, for the purpose of ensuring compliance with applicable particulate emission limitations. In accordance with the permittee's permit application, the permittee has committed to covering the active storage piles or spraying them with water or a surfactant solution as necessary to control fugitive dust emissions. Also, in accordance with the permittee's permit application, the permittee has committed to covering the inactive storage piles with vegetation or another type of cover, or spraying them with water or a surfactant solution as necessary to control fugitive dust emissions. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.
- s. The needed frequencies of implementation of control measures are determined by the permittee's inspections pursuant to the monitoring sections of this permit. Implementation of the control measures shall not be necessary if there is snow

and/or ice cover, or if precipitation has occurred that is sufficient for that day to ensure compliance with the applicable particulate emission limitations. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.

t. Implementation of the above-mentioned control measures in accordance with the terms and conditions of this permit is appropriate and sufficient to satisfy the best available technology requirements for OAC rule 37-45-31-05.

i. The air contaminants emitted by this emission unit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

ii. The permittee shall employ control measures, including the application of best available technology (BAT), for the purpose of complying with OAC rule 3745-15-07.

c) **Operational Restrictions**

(1) The permittee shall not accept for disposal, more than 1,712,402 tons of waste material per rolling 12-month period. This emission unit has been in operation for more than 12 months and, as such, the permittee has existing records to generate the rolling, 12-month summation of the total waste disposal rate.

(2) The permittee shall operate the GCCS such that gas is collected from each area, cell, or group of cells in the landfill in which solid waste has been in place for:

a. 5 years or more if active; or

b. 2 years or more if closed or at final grade.

(3) The permittee shall operate the GCCS with negative pressure at each wellhead except for the following conditions:

a. A fire or increased well temperatures. The owner or operator shall record instances when positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as required in 40 CFR 60.757(f)(1);

b. Use of a geomembrane or synthetic cover. The permittee shall develop acceptable pressure limits in the design plan; and

c. A decommissioned well. A well may experience a static positive pressure after the shutdown to accommodate for declining flows. All design changes shall be submitted to, and approved by Ohio EPA, CDO, DAPC.

(4) The permittee shall operate each interior wellhead in the GCCS with a LFG temperature less than 55 degrees C, and, with either a nitrogen level less than 20% or an oxygen level less than 5%. The owner or operator may establish a higher operating temperature, nitrogen value, or oxygen value at a particular well. A higher operating value (HOV) demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

- a. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established in accordance with 40 CFR 60.572(b)(2)(i).
 - b. Unless an alternative test method is established as allowed by 40 CFR 60.572(b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A, with the following exceptions:
 - i. The spall shall be set so that the regulatory limit is between 20 and 50 percent of the span;
 - ii. A data recorder is not required;
 - iii. Only two (2) calibration gases are required, a zero (0) and a span (ambient air may be used as the span); and
 - iv. A calibration error check is not required. The allowable sample bias, zero drift and calibration drift are +/- 10%.
- (5) The permittee shall operate the GCCS so that the methane concentration is less than 500 parts per million (ppm) above background at the surface of the landfill. To determine if this level is exceeded, the owner or operator 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 observation indicate elevated concentrations of landfill gas, such as distressed vegetation and cracks or seeps in the cover. The owner or operator 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 surface testing.
- (6) The permittee shall operate the GCCS such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(iii) unless the collected gas is routed to a treatment system that processes the collected gas for subsequent sale. In the event the GCCS is inoperable, the gas mover system shall be shut down and all valves in the GCCS venting to or contributing to venting of the gas to the atmosphere shall be closed within 1 (one) hour.
- (7) The permittee shall operate the GCCS or treatment system at all times when the collected gas is routed to the GCCS.
- (8) If monitoring demonstrates that the operational requirements established pursuant to this permit are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3) through (a)(5), or 40 CFR 60.755(c). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements in this section.
- (9) The facilities combined control devices shall be limited to inputting less than or equal to 6,055 million standard cubic feet of LFG per year.
- (10) The provisions contained in 40 CFR Part 60, Subpart WWW 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 (five) days for GCCS systems and shall not exceed 1 (one) hour (release of untreated/raw LFG into the atmosphere) for treatment or control devices.

(11) The facility cannot accept for disposal any regulated asbestos-containing material as defined in the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Asbestos, 40 CFR Part 61, Subpart M, Section 141 and OAC rule 3745-20, or any subsequent revisions to either rule. Regulated asbestos-containing material is defined to include:

- a. Friable asbestos material;
- b. Category I nonfriable asbestos-containing material that has become friable;
- c. Category I nonfriable asbestos-containing material that will be or has been subject to sanding, grinding, cutting, or abrading; or
- d. Category II nonfriable asbestos-containing material that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

(12) There shall be no open burning in violation of OAC rule 3745-19 at this facility.

d) Monitoring and/or Recordkeeping Requirements

(1) Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of 40 CFR 60.752(b) shall keep for at least 5 (five) years, up-to-date, readily accessible, on-site records of the design capacity report that triggered 40 CFR 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 (four) hours. Either paper copy or electronic formats are acceptable.

(2) Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(ii)(A) for an active GCCS shall install a sampling port and thermometer, other temperature measuring device, or an access port for temperature measurements at each wellhead and;

- a. Measure the gauge pressure in the GCCS collection header (at each wellhead) on a monthly basis as provided in 40 CFR 60.755(a)(3);
- b. Monitor nitrogen or oxygen concentrations in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and
- c. Monitor temperature of the LFG on a monthly basis as provided in 40 CFR 60.756(a)(5).

(3) Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) using an enclosed combustor shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

- a. A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of +/- 1%(one percent) of the temperature being measured in degrees C or +/- 0.5 degree C, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity equal to or greater than 44 megawatts; and
 - b. A device that records flow to (including bypass) the flare. The owner or operator shall comply with either (3)b.i. or (3)b.ii. below:
 - i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
 - ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- (4) Each owner or operator seeking to comply with 40 CFR 60.752(b)(2)(iii) using an open flare 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; and
 - b. A device that records flow to (including bypass) the flare. The owner or operator shall comply with either (4)b.i. or (4)b.ii., below:
 - i. Install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes; or
 - ii. Secure the bypass line valve in the closed position with a car-seal or a lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
- (5) Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator seeking to demonstrate compliance with 40 CFR 60.755(c) shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in 40 CFR 60.755(d). Any closed landfill that has no monitored exceedances of the operational standards in 3 (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.
- (6) Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records, for the life of the control equipment, or the data listed below as measured during the initial performance test or compliance demonstration. Records of subsequent testing or monitoring shall be

maintained for a minimum of 5 (five) years. Records of the control device vendor specifications shall be maintained until removal of said device.

Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(ii):

- a. The maximum expected gas generation flow rate as calculated in 40 CFR 60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been accepted and approved by Ohio EPA, CDO, DAPC.

The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR 60.759(a)(1).

Where an owner or operator subject to the provisions of this subpart seeks to demonstrate compliance with CFR 60.752(b)(2)(iii)(A), through use of an open flare, the flare type (steam-assisted, air-assisted or non-assisted), all visible emission readings, heat content determinations, flow rate and bypass flow rate measurements, and exit velocity determinations made during the performance test as specified in CFR 60.18 and CFR 60.754(e); continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame or the flare flame is absent.

- (7) Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 (five) years, up-to-date, readily accessible, continuous records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 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.

The following scenarios constitute exceedances that shall be recorded and reported under 40 CFR 60.757(f):

- a. For enclosed combustors, except for boilers and process heaters with design heat input capacity for 44 megawatts (150MMBtu/hr) or greater, all 3 (three) hour periods of operation during which the average combustion temperature was more than 28 degrees C below the average combustion temperature during the most recent performance test when compliance with 40 CFR 60.752(b)(2)(iii) was demonstrated.
 - i. For boilers or process heaters, whenever there is a change in the location at which the vent stream is introduced into the flame zone as required by 40 CFR 60.752(b)(3).
- b. Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible, continuous records of the indication of the flow to the control device (including bypass), or records of monthly inspections of car-seals or lock-and-key configurations used to seal bypass lines, as specified in 40 CFR 60.756.

- c. Each owner or operator subject to the provisions of this subpart who uses a boiler or process heater with a design heat input capacity of 44 megawatts or greater to comply with 40 CFR 60.752(b)(2)(iii) shall keep and up-to-date, readily accessible records of all periods of operation of the boiler or process heater. (Examples include records of steam use, fuel use, and/or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements).
 - d. Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible, continuous records of the flame or flare pilot flame monitoring specified under 40 CFR 60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.
- (8) Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep for the life of the GCCS 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.
- a. Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under 40 CFR 60.755(b).
 - b. Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of non-degradable waste excluded from collection as provided in 40 CFR 60.759(a)(3)(i), as well as any nonproductive areas excluded from collection as provided in 40 CFR 60.759(a)(3)(ii).
- (9) Except as provided in 40 CFR 60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart shall keep, for at least 5 (five) years, up-to-date, readily accessible records of all GCCS exceedances of the operational standards in 40 CFR 60.753, the reading in the subsequent month (whether the subsequent reading is an exceedance or not), and the location of each exceedance.
- (10) The permittee shall conduct annual sampling of LFG at a point prior to entering the control device(s). These samples should be analyzed for natural gas properties in accordance with ASTM D 1946 (or equivalent) to determine methane content, and heat content in accordance with ASTM 3588 (or equivalent) and Method 3C/25C to determine NMOC. The annual sampling will be recorded for use in determining actual emissions.
- (11) The permittee shall maintain monthly records of the following:
- a. amount of LFG, in scf, collected from the landfill;
 - b. amount of LFG, in scf, input to each of the individual control devices (excluding decommissioned units);
 - c. the number of hours that the individual control devices were operated (excluding decommissioned units);

- d. the amount of LFG, in scf, input to the neighboring treatment facility for processing and subsequent sale/use;
 - e. the amount, in scf, of process return gas provided from the treatment gas treatment system, if any; and
 - f. the rolling, 12-month summation of the combined emissions from all in-service control devices.
- (12) The permittee shall perform daily inspections to observe the following material handling activities when the activity(ies) is(are) being conducted:
- a. waste handling (deposition, spreading, and compacting)
 - b. landfill daily and intermediate cover handling
 - c. wind erosion from landfill surfaces
 - d. general earthmoving and soil handling during landfill construction
 - e. landfill aggregate handling during landfill construction
- (13) The inspections shall be documented and recorded as described below:
- a. No inspection shall be necessary when the material handling activity(ies) is(are) not being conducted, when there is snow and/or ice cover, and/or if precipitation has occurred that is sufficient for that day to ensure compliance with the applicable visible fugitive particulate emission limitation. Any required inspection that is not performed due to any of the above identified events shall be performed during the next inspection pursuant to the minimum inspection frequency.
- (14) The purpose of the material handling activity inspection is to determine the need for implementing control measures necessary to minimize and/or eliminate visible emissions of fugitive dust from the associated activity(ies). The inspection shall be performed during representative, normal landfill operating conditions.
- (15) A daily operations log shall be maintained regarding the landfill activities contained in d)(12) and shall indicate/contain the following information:
- a. the date and whether an inspection was performed and, if not, the reason why the inspection was not performed, including those inspections that were not performed due to snow/ice/precipitation;
 - b. the activities in operation during the inspection;
 - c. each activity that required the implementation of control measures to ensure compliance with the visible fugitive particulate emissions limitation;
 - d. whether controls were implemented to minimize/eliminate visible emissions of fugitive dust; and

- e. with regard to the waste handling activity, the amount, in tons, of waste material accepted for disposal.
- (16) The permittee shall maintain an annual cumulative (calendar year) record to be updated quarterly that shall contain:
- a. a record of all days when visible emission inspections were not performed as required; and
 - b. a record of all days in which control measures were determined necessary through inspection, but controls were not implemented.
- (17) The PTI application for this emissions unit was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee. The Toxic Air Contaminant Statute, ORC 3704.03(F), was applied to this emissions unit for each toxic air contaminant listed in OAC rule 3745-114-01, using data from the permit application; and modeling was performed for each toxic air contaminants emitted at over one ton per year using an air dispersion model such as SCREEN3, AERMOD, or ISCST3, or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration results from the approved air dispersion model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as described in the Ohio EPA guidance document entitled review of New Sources of Air Toxic Emissions, Option A, as follows:
- a. the exposure limit, expressed as a time-weighted average concentration for a conventional 8-hour workday and a 40-hour workweek, for each toxic compound(s) emitted from the emissions unit(s), (as determined from the raw materials processed and/or coatings or other materials applied) has been documented from one of the following sources and in the following order of preference (TLV was and shall be used, if the chemical is listed):
 - i. threshold limit value (TLV) from the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices; or
 - ii. STEL (short term exposure limit) or the ceiling value from the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values for Chemical Substances and Physical Agents Biological Exposure Indices; the STEL or ceiling value is multiplied by 0.737 to convert the 15-minute exposure limit to an equivalent 8-hour TLV.
 - b. The TLV is divided by ten to adjust the standard from the working population to the general public (TLV/10).

- c. This standard is then adjusted to account for the duration of the exposure or the operating hours of the emissions unit, i.e., 24 hours per day and 7 days per week, from that of 8 hours per day and 5 days per week. The resulting calculation was (and shall be) used to determine the Maximum Acceptable Ground-Level Concentration (MAGLC):

$$TLV/10 \times 8/24 \times 5/7 = 4 \text{ TLV}/8760 = \text{MAGLC}$$

- d. The following summarizes the results of dispersion modeling for the significant toxic contaminants (emitted at 1 or more tons/year) or worst case toxic contaminant(s):

For worst-case control device scenario

SCREEN3 Modeling	Ethane	Hydrogen Chloride
Pollutant Emission Rate (lb/hr)	3.18	3.89
Pollutant Emission Rate (gram/sec)	0.40	0.49
Distance from Exhaust Stack to Property Line (m)	155	155
Distance from Exhaust Stack to Maximum Concentration (m)	1174	1174
Max 1-hr Concentration @ 1 gram/sec Emission Rate (ug/m ³)	0.7698	0.7698
Max 1-hr Concentration @ Above Emission Rate (ug/m ³)	0.308	0.377
TLV (ppmv)	1000	2
MAGLIC (TLV/42) (ug/m ³)	29,282	71.1
Result	0.308 < 29282 - OK	0.377 < 71.1 - OK

The permittee, has demonstrated that emissions of Hydrogen chloride and ethane from the landfill operations are calculated to be less than eighty percent of the maximum acceptable ground level concentration (MAGLC); any new raw material or processing agent shall not be applied without evaluating each component toxic air contaminant in accordance with the Toxic Air Contaminant Statute, ORC 3704.03(F).

- (18) Prior to making any physical changes to or changes in the method of operation of the emissions unit, that could impact the parameters or values that were used in the predicted 1-hour maximum ground-level concentration, the permittee shall re-model the change(s) to demonstrate that the MAGLC has not been exceeded. Changes that can affect the parameters/values used in determining the 1-hour maximum ground-level concentration include, but are not limited to, the following:

- a. changes in the composition of the materials used or the use of new materials, that would result in the emission of a new toxic air contaminant with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any toxic air contaminant listed in OAC rule 3745-114-01, that was modeled from the initial (or last) application; and
- c. physical changes to the emissions unit(s) or its/their exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.)

If the permittee determines that the Toxic Air Contaminant Statute will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to a non-restrictive change to a parameter or process operation, where compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), has been documented. If the change(s) meet(s) the definition of a "modification", the permittee shall apply for and obtain a final PTI, PTIO, or FEPTIO (as applicable) prior to the change. The Director may consider any significant departure from the operations of the emissions unit, described in the permit application, as a modification that results in greater emissions than the emissions rate modeled to determine the ground level concentration; and he/she may require the permittee to submit a permit application for the increased emissions.

- (19) The permittee shall collect, record, and retain the following information for each toxic evaluation conducted to determine compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F):
 - a. description of the parameters/values used in each compliance demonstration and the parameters or values changed for any re-evaluation of the toxic(s) modeled (the composition of materials, new toxic contaminants emitted, change in stack/exhaust parameters, etc.);
 - b. the Maximum Acceptable Ground-Level Concentration (MAGLC) for each significant toxic contaminant or worst-case contaminant, calculated in accordance with the Toxic Air Contaminant Statute, ORC 3704.03(F);
 - c. a copy of the computer model run(s), that established the predicted 1-hour maximum ground-level concentration that demonstrated the emissions unit(s) to be in compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), initially and for each change that requires re-evaluation of the toxic air contaminant emissions; and
 - d. the documentation of the initial evaluation of compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), and documentation of any determination that was conducted to re-evaluate compliance due to a change made to the emissions unit(s) or the materials applied.

- (20) The permittee shall maintain a record of any change(s) made to a parameter or value used in the dispersion model, used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), though the predicted 1-hour maximum ground-level concentration. The record shall include the date and reason(s) for the change and if the change would increase the ground-level concentration.
- (21) The permittee shall maintain monthly records of the following information:
- a. the total waste disposal rate for each month; and
 - b. the rolling, 12-month summation of total waste disposal rates
- e) Reporting Requirements
- (1) The permittee shall submit a report to Ohio EPA, CDO, DAPC within 30 days of an exceedance of the rolling, 12-month waste disposal limitation.
 - (2) The permittee shall submit any and all reports in accordance with the Standards of Performance for Municipal Solid Waste Landfills (40 CFR 60.757), except as indicated in the following term and condition. The reports shall be submitted to Ohio EPA, CDO, DAPC.
 - a. Each owner or operator subject to the requirements of this subpart shall submit an initial design capacity report to Ohio EPA, CDO, DAPC ninety days after the date of commenced construction, modification, or reconstruction for landfills that commence construction, modification or reconstruction on or after March 12, 1996 (3/12/96). The initial design capacity report shall contain the following information:
 - i. a map or plot of the landfill, providing size and location of the landfill, and identifying all areas where solid waste may be accepted/placed according to the permit issued by the State, local or tribal agency responsible for regulating the landfill; and
 - ii. the maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the responsible State, local or tribal agency, a copy of said permit, stating the maximum design capacity may be submitted as part of the report. If the maximum design capacity is not stated in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided along with applicable parameters as part of the report. The State, local or tribal agency may request other reasonable information as may be required to verify the maximum design capacity.
 - b. This facility has fulfilled the requirement to submit the initial GCCS design plan. Therefore, the permittee is not subject to submitting the GCCS design plan required by 40 CFR 60.752(b)(2)(i) and 40 CFR 60.757(c), except that the facility shall submit an amended GCCS design plan prior to a new area becoming subject to the control requirements of 40 CFR 60.752(b)(2)(i).

- c. Each owner or operator of a controlled landfill shall submit a closure report to Ohio EPA, CDO, DAPC within 30 days of halting waste acceptance. Ohio EPA, CDO, DAPC may request additional information required to verify permanent closure in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted, no additional wastes may be placed into/onto the landfill without filing a notification of modification as described in 40 CFR 60.7(a)(4).

- d. Each owner or operator of a controlled landfill shall submit an equipment removal report to Ohio EPA, CDO, DAPC 30 days prior to removal of or stoppage of control equipment. The equipment removal report shall contain all the following information:
 - i. a copy of the closure report submitted in accordance with 40 CFR 60.757(d);
 - ii. a copy of the initial performance test report demonstrating that the 15 (fifteen) year minimum control period has expired; and
 - iii. dated copies of 3 (three) successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.

- e. By January 31st and July 31st of each year, owners and operators seeking to comply with 40 CFR 60.752(b)(2) using an active GCCS designed in accordance with 40 CFR 60.752(b)(2)(ii), shall submit semi-annual reports to Ohio EPA, CDO, DAPC. The semi-annual reports shall contain the following information [exceedances for enclosed combustors defined under 40 CFR 60.758(c)]:
 - i. value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a), (b), (c), and (d);
 - ii. description and duration of all periods when the gas and stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under 40 CFR 60.756;
 - iii. description and during 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 40 CFR 60.756;
 - iv. all periods when the GCCS was not operating in excess of 5 (five) days;
 - v. the location of each exceedance of the 500 ppm methane concentration as provided in 40 CFR 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month; and
 - vi. the date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.755(a)(3), (b) and (c)(4).

- f. The permittee shall submit the following information with the initial performance test report required pursuant to 40 CFR 60.8, if not already submitted/completed:
 - i. a diagram of the GCCS showing collection system positioning, including wells, horizontal collectors, surface collectors, or other gas extraction devices, including the location of any areas excluded from collection, and the proposed sites for future collection system expansion;
 - ii. the data demonstrating the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices, and the basis for the gas mover equipment sizing;
 - iii. the documentation of the presence of nondegradable material for each area from which collection wells have been excluded based on the presence of nondegradable material;
 - iv. the sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area;
 - v. the provisions used to determine/establish criteria for increasing gas mover equipment capacity if the present gas mover equipment is not adequate to accommodate the anticipated maximum LFG flow rate over the life of the landfill; and
 - vi. the provisions for the control of off-site LFG migration.
- (3) By April 15 of each year the permittee shall submit an annual report covering the previous calendar year detailing the amount of LFG, in scf, collected from the landfill, amount of LFG, in scf, input to each individual control device, the number of hours that each individual control device operated and the amount of LFG, in scf, input to the treatment system that processes the LFG for subsequent sale or use. These reporting requirements may be satisfied by including and identifying this information in the annual Fee Emission Report.
- (4) By January 31 of each year the permittee shall submit an annual report that identifies any of the following occurrences relating to inspections of landfill activities during the previous year:
 - a. each day when visible emission inspections were not performed as required; and
 - b. each instance in which control measures were determined necessary through inspection, but controls were not implemented.
- (5) The permittee shall submit annual reports to Ohio EPA, CDO, DAPC documenting any changes made to a parameter or value used in the dispersion model that was used to demonstrate compliance with the Toxic Air Contaminant Statute, ORC 3704.03(F), through the predicted 1-hour maximum ground-level concentration. If no changes to the emissions unit(s) or the exhaust stack have been made, then the report shall include a statement to this effect. This report shall be postmarked or delivered no later than January 31 following the end of each calendar year.

- (6) The permittee shall submit quarterly deviation (excursion) reports that identify:
- a. all deviations (excursions) of the rolling, 12-month summation of total NO_x and CO emissions;
 - b. any corrective actions taken to remedy the deviations (excursions) or to prevent future deviations; and
 - c. the magnitude and duration of each deviation (excursion).

If no deviations (excursions) occurred during the calendar quarter, the permittee shall submit a report that states that no deviations occurred during the quarter.

The quarterly reports shall be submitted each year by January 31 (covering October – December), April 30 (covering January - March), July 31 (covering April – June), and October 31 (covering July – September), unless an alternative schedule has been established and approved by Ohio EPA, CDO, DAPC.

- (7) The permittee shall submit a report to Ohio EPA, CDO, DAPC within 30 days of recommissioning the shuttered, enclosed flare. The report shall contain a description of the reasoning for recommissioning the enclosed flare and establish the schedule for performing the subsequent testing required for reactivation/activation of a control device as established in 40 CFR 60.752(b)(2)(iii)(B).

f) Testing Requirements

- (1) Compliance with the Emissions Limitations and/or Control Requirements specified in section b) of these terms and conditions shall be determined in accordance with the following methods:
- (2) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the specified methods in f)(2)a. through f)(2)f. shall be used to determine whether the GCCS is in compliance with 40 CFR 60.752(b)(2)(ii).

For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The “k” and “Lo kinetic” factors should be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42) or other site specific values demonstrated to be appropriate and approved by Ohio EPA, CDO, DAPC. If “k” has been determined as specified in 40 CFR 60.754(a)(4), the value of “k” determined from the test shall be utilized. A value of no more than 15 years shall be used for the intended use period of the gas mover equipment. The active life of the landfill is the age of the landfill plus the estimated number of years until closure.

- a. For sites with unknown year-to-year acceptance rates:

$$Q_m = 2Lo R (e^{-kc} - e^{-kt}), \text{ where}$$

Q_m = maximum expected gas generation flow rate, in cubic meters per year;
Lo = methane generation potential, in cubic meters per megagram of solid waste;
R = average annual acceptance rate, in megagrams per year;
k = methane generation rate constant, year⁻¹;

t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, "t" is the age of the landfill at installation, in years; and

c = time since closure, in years (for an active landfill c=0 and $e^{-kc} = 1$)

- b. For sites with known year-to-year solid waste acceptance rates:

$Q_m =$ the summation of $2 * k * L_o * M_i(e^{-kt} * i)$ for $i=1$ through $i=n$ where:

Q_m = maximum expected gas generation flow rate, in cubic meters per year;

K = methane generation rate constant, year⁻¹;

L_o = methane generation potential, in cubic meters per megagram of solid waste;

M_i = mass of solid waste in the section, in megagrams; and

t_i = age of the section, in years.

- c. If a GCCS has been installed, actual flow data may be used to project the maximum expected gas generation flow rate instead of, or in conjunction with, the equations in "a." and "b." of this section. If the landfill is still accepting waste for disposal, the actual measured flow data will not equal the maximum expected gas generation rate. The calculations derived from the equations in "a." and "b.", or other methods, shall be used to predict the maximum expected gas generation rate over the intended period of use of the GCCS equipment.
- d. For the purposes of determining sufficient density of gas collectors to demonstrate compliance with 40 CFR 60.752(b)(2)(ii)(AA)(2), the owner or operator shall design a system of vertical wells, horizontal collectors, or other control devices, satisfactory to Ohio EPA, CDO, DAPC, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.
- e. To demonstrate whether the GCCS flow rate is sufficient to comply with 40 CFR 60.752(b)(2)(ii)(A)(3), the owner or operator shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be taken to correct the exceedance within 5 (five) calendar days, except for the 3 (three) conditions allowed under 40 CFR 60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 (fifteen) calendar days of the first measurement, the GCCS 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 Ohio EPA, CDO, DAPC for approval.
- f. The permittee is not required to expand the GCCS as required in "e." of this section during the first 180 days after GCCS startup.
- g. For the purpose of identifying whether excess air infiltration into the landfill is occurring, the owner or operator shall monitor each well monthly for temperature, and oxygen or nitrogen, as provided in 40 CFR 60.753(c). If a well exceeds 1 (one) of these operating parameters, action shall be initiated to correct the exceedance within 5 (five) calendar days. If correction of the exceedance cannot

be achieved within 15 calendar days of the initial exceedance, the GCCS shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measures shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to Ohio EPA, CDO, DAPC for approval.

- h. An owner or operator seeking to demonstrate compliance with 40 CFR 60.752(b)(2)(ii)(A)(4) through use of a GCCS not conforming to the specifications provided in 40 CFR 60.759 shall provide information satisfactory to Ohio EPA, CDO, DAPC as specified in 40 CFR 60.752(b)(2)(i)(C) demonstrating that off-site migration of LFG is being controlled.
- i. The procedures outlined below in f)(2)i.i. through f)(2)i.iv. shall be used to demonstrate compliance with the surface methane operational standard as provided in 40 CFR 60.753(d):
 - i. after installation of the GCCS, the owner or operator 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) for each collection area on a quarterly basis using an organic vapor analyzer, flame ionization detector, or other portable monitor meeting the specifications below:
 - (a) The portable analyzer shall meet the instrument specifications provided in Method 21, Section 3 of Appendix A of this subpart, except that “methane” shall replace all “VOC” references.
 - (b) The calibration gas shall be methane, diluted to a nominal concentration of 500 ppm.
 - (c) To meet the performance evaluation requirements of Method 21, Section 3.1.3 of Appendix A of this subpart, the instrument evaluation procedures of Method 21, Section 4.4 of Appendix A of this subpart shall be used.
 - (d) The calibration procedures provided in Method 21, Section 4.2 of Appendix A of this subpart shall be followed immediately before commencing a surface monitoring survey.
 - ii. The background concentrations 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.
 - iii. Surface emission monitoring shall be performed in accordance with Method 21, Section 4.3.1 of Appendix A of this subpart, except that the probe inlet shall be placed within 5 (five) to 10 (ten) centimeters of the ground. Surface emission monitoring shall be conducted during typical meteorological conditions.
 - iv. Any reading of 500 ppm or more above background concentrations, at any location on the landfill, shall be recorded as a monitored exceedance.



So long as the following actions are taken, the monitored exceedance is not a violation of the operational requirements of 40 CFR 60.753(d):

- (a) The location of each monitored exceedance shall be marked and the location recorded;
 - (b) 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 locations re-monitored within 10 (ten) calendar days of the initial exceedance;
 - (c) If the re-monitoring reveals a second exceedance, additional corrective actions shall be taken and the location shall be monitored a third time within 10 (ten) calendar days of the second exceedance. If the tertiary monitoring reveals a third exceedance no further monitoring is required until the following action has been taken:
 - (i) For any location where monitored methane concentrations equal or exceed 500 ppm above background three times in 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 blower, header pipe or control device upgrades/improvements, and a corresponding timeline for their installation shall be submitted to Ohio EPA, CDO, DAPC for approval.
 - (d) Any location that initially exceeded, but upon re-monitoring has a concentration less than 500 ppm above background, shall be re-monitored 30 days from the initial exceedance. If the 30 day re-monitoring reveals a methane concentration of less than 500 ppm, no further monitoring of that location is required until the next quarterly monitoring is conducted. If the 30 day re-monitoring reveals an exceedance, the procedures in (c)(i), above, shall be followed.
 - j. The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.
- (3) Emission Limitation: 157.40 tons per year of fugitive non-methane organic compounds (NMOC), 11,124.00 tons per year of fugitive methane (CH₄), 15.00 tons per year of fugitive Hazardous Air Pollutant (HAP), 61.4 tons per year of fugitive volatile organic compounds (VOC)

Applicable Compliance Method: Fugitive LFG emissions resulting from the biological breakdown of organic wastes shall not exceed these values which are based upon calculations performed using US EPA's landfill gas estimation program (LANDGEM). These calculations represent the highest emission rate attainable based upon LFG emission rates predicted by a maximum annual rate of waste material accepted for disposal (1,712,402 TPY) US EPA's LANDGEM, AP-42 and other emission factors, an

85% capture efficiency for the GCCS, an assumption that 0% of the wastes disposed are inert and not broken down to create LFG, and other assumptions contained in the application.

- (4) Emission Limitation: 1.00 ton per year of fugitive particulate emissions (PE) from landfill operations

Applicable Compliance Method: Compliance is demonstrated through use of AP-42 [Compilation of Air Pollution Emission Factors, Chapter 13.2.4 (November 2006)], for material handling and storage piles, and information provided in the PTI application (November 2008). Maximum potential uncontrolled emission rates for material handling and storage piles were calculated by using worst case scenarios and calculations based upon the maximum allowable waste acceptance rate (6,000 tons per day).

- (5) Emission Limitation: Visible emissions of fugitive dust from landfill operations shall not exceed twenty percent opacity as a three-minute average

Applicable Compliance Method: If required, compliance with the visible emission limitation identified above shall be determined in accordance with Test Method 9 as set forth in "Appendix on Test Methods" in 40 CFR, Part 60 ("Standards of Performance for New Stationary Sources"), as such Appendix existed on July 1, 2002, and the modifications listed in paragraphs (B)(3)(a) and (B)(3)(b) of OAC rule 3745-17-03.

- (6) Emission Limitation: Visible emissions from any control device other than an open flare, shall not exceed 10% opacity as a six-minute average.

Applicable Compliance Method: If required, compliance shall be determined through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9 and the procedures specified in OAC rule 3745-17-03(B)(1).

- (7) Emission Limitation: Emissions from the two open flares and all other control devices (including emergency use of the decommissioned 4,500 ft³/min enclosed combustor) shall not exceed 21.40 pounds per hour (lbs/hr) nitrogen oxide (NO_x), 90.80 lbs/hr carbon monoxide (CO), 5.80 lbs/hr of sulfur dioxide (SO₂), 3.00 lbs/hr of NMOC, 1.20 lbs/hr of VOC, 2.80 lbs/hr of hydrogen chloride (HCl), 5.90 lbs/hr of particulate emissions less than 10 microns in diameter (PM₁₀)

- a. Applicable Compliance Method for CO: Compliance with the hourly CO emission limitation shall be determined using the recordkeeping required in d) along with the following calculation:

$$\frac{\text{Flow Rate } \text{ft}^3}{\text{minute}} \mid \frac{0.XX \text{ ft}^3 \text{ CH}_4}{\text{ft}^3 \text{ LFG}} \mid \frac{1000 \text{ BTU}}{\text{ft}^3 \text{ CH}_4} \mid \frac{\text{EF lbs CO}^*}{1,000,000 \text{ BTU}} \mid \frac{60 \text{ minutes}}{\text{hour}} \mid \leq 90.8 \text{ lbs} / \text{hour}$$

*This value has been established based upon a manufacturer's performance guarantees for each individual control device.

Actual flow rate and methane content is determined from monitoring and recordkeeping in d) and the emission factor based upon manufacturer's guarantee or the most recent testing results, if applicable.

For demonstration purposes, compliance was determined using a flow rate of 8,750 scf/min and a CO emission factor of 0.31 lbs/MMBtu [AP-42, 5th Edition, Table 13.5-1 (April, 2015)] and assuming 0.55 ft³ of methane per cubic foot of LFG.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10 (except for open flares).

- b. Applicable Compliance Method for NO_x: Compliance with the hourly NO_x emission limitation shall be determined using the recordkeeping required in d) along with the following calculation:

$\frac{\text{Flow Rate ft}^3}{\text{minute}}$	$0.XX \text{ ft}^3 \text{ CH}_4$	1000 BTU	EF lbs NO _x *	60 minutes	<= 21.4lbs
	ft ³ LFG	ft ³ CH ₄	1,000,000 BTU	hour	hour

*This value has been established based upon a manufacturer's performance guarantees for each individual control device.

Actual flow rate and methane content is determined from monitoring and recordkeeping in d) and the emission factor based upon manufacturer's guarantee or the most recent testing results, if applicable.

For demonstration purposes, compliance was determined using a flow rate of 7,019 scf/min and a NO_x emission factor of 0.068 lbs/MMBtu [AP-42, 5th Edition, Table 13.5-1 (April, 2015)] and assuming 0.55 ft³ of methane per cubic foot of LFG.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E (except for open flares).

- c. Applicable Compliance Method for SO₂: Compliance with the hourly SO₂ emission limitation shall be determined using the following calculation:

$\frac{\text{Flow Rate ft}^3}{\text{minute}}$	49.6 ppmv*	64.066 ¹	60 minutes	<=5.8 lbs
	1,000,000 MMscf/scf	(0.7302 ² x 520 ³)	Hour	hour

*Sulfur concentration in the exhaust gas is based on AP-42 emission factor of 49.6 ppmv, based upon 99.7% LFG control efficiency (worst case emissions for SO₂)

- ¹ – molecular weight of SO₂
- ² – universal gas constant
- ³ – temperature

Actual flow rate is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 7,019 scf/min.



If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C (except open flares).

- d. Applicable Compliance Method for NMOC: Compliance with the hourly NMOC emission limitation shall be determined using the following calculation:

<i>Flow Rate ft³</i>	946 ppmv*	86.18 ¹	60 minutes	(1-0.98) ²	<=3.0lbs
<i>minute</i>	1,000,000 MMscf/scf	(0.7302 ² x 520 ³)	Hour		hour

*NMOC concentration in inlet gas based on historic site data (946 ppmv)

¹ – molecular weight of NMOC (as hexane)

² – control efficiency of the control device

³ – universal gas constant

⁴ – temperature

Actual flow rate and NMOC content is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 7,019 scf/min.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 (except open flares).

- e. Applicable Compliance Method for VOC: Compliance with the hourly VOC emission limitation shall be determined using the following calculation:

<i>Flow Rate ft³</i>	946 ppmv*	86.18 ¹	60 mins	(1-0.98) ²	0.39 ⁵	<=1.2lbs
<i>minute</i>	1,000,000 MMscf/scf	(0.7302 ² x 520 ³)	hour			hour

*NMOC concentration of inlet gas from historic site data (946 ppmv)

¹ – molecular weight of NMOC (as hexane)

² – control efficiency of the control device

³ – universal gas constant

⁴ – temperature

⁵ – percentage of VOC in LFG

Actual flow rate and VOC content is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 7,019 scf/min.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18 (except open flares).



- f. Applicable Compliance Method for HCl: Compliance with the hourly HCl emission limitation shall be determined using the following calculation:

<i>Flow Rate ft³ minute</i>	<u>42 ppmv*</u> 1,000,000 MMscf/scf	<u>36.5¹</u> (0.7302 ² x 520 ³)	<u>60 minutes</u> hour	<u><= 2.8 lbs</u> hour
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*HCl concentration in the exhaust gas is based on an AP-42 emission factor of 42.0 ppmv based upon 99.7% LFG control efficiency (worst case emissions for HCl)

¹ – molecular weight of HCl

² – universal gas constant

³ – temperature

Actual flow rate is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 11,519 scf/min (future max potential per LANDGEM).

If require, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Methods 1-4 and 265 or 26A (except open flares).

- g. Applicable Compliance Method for PM₁₀: Compliance with the hourly PM₁₀ limitation shall be determined using the following calculation:

<i>Flow Rate dry ft³ minute</i>	<u>0.XX ft³ CH₄</u> ft ³ LFG	<u>17 lbs PM*</u> 1,000,000 ft ³ CH ₄	<u>60 minutes</u> hour	<u><= 5.9 lbs</u> hour
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*AP-42, Section 2.4, Municipal Solid Waste Landfills (November 1998)
All PM is assumed to be PM₁₀

Actual flow rate and methane content is determined from monitoring and recordkeeping and emission factors based upon the manufacturer's guarantee, or the most recent testing results, if applicable.

For demonstration purposes, compliance was determined using a flow rate of 10,597 dscf/min and assuming 0.55 ft³ of methane per cubic foot of LFG.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-5 (except for open flares).

- (8) Emission Limitation: Emissions from the two open flares and all other control devices (including emergency use of the decommissioned 4,500 ft³/min enclosed combustor) shall not exceed 15.44 tons per year of sulfur dioxide (SO₂), 7.90 tons per year of NMOC, 3.10 tons per year of VOC, 7.45 tons per year of hydrogen chloride (HCl), and 15.87 tons per year of particulate emissions less than 10 microns in diameter (PM₁₀)

Applicable Compliance Method: Compliance with the annual emission limitations for all control devices is demonstrated by summing the hourly emissions for each pollutant as calculated in f)(5)a. – f)(5)g., for the calendar year, and then dividing by 2,000 lbs/ton.

- (9) Emission Limitation: There shall be no visible emissions from any open flare, except for periods not to exceed a total of 5 (five) minutes, during any 2 (two) consecutive hours of observation.

Applicable Compliance Method: If required, compliance shall be demonstrated through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in 40 CFR 60.18.

- (10) Emission Limitation: Emissions from the decommissioned 4,500 ft³/min enclosed combustor shall not exceed 8.90 lbs/hr NO_x, 29.70 lbs/hr CO, 2.26 lbs/hr SO₂, 1.20 lbs/hr NMOC, 0.50 lbs/hr VOC, 1.09 lbs/hr HCl, and 2.32 lbs/hr PM₁₀

- a. Applicable Compliance Method for NO_x: Compliance with the hourly NO_x emission limitation shall be determined using the recordkeeping required in d) and the following calculation:

$\frac{\text{Flow Rate } \text{ft}^3}{\text{minute}}$	$0.XX \text{ ft}^3 \text{ CH}_4$	1000 BTU	EF lbs NO _x *	60 minutes	$\leq 8.9 \text{ lbs}$
	ft ³ LFG	ft ³ CH ₄	1,000,000 BTU	hour	hour

*This value has been established based upon a manufacturer's performance guarantee.

Actual flow rate and methane content is determined from monitoring and recordkeeping required in d) and the emission factors shall be based upon manufacturer's guarantee or the most recent state testing results, if applicable.

For demonstration purposes, compliance was determined using a flow rate of 4,500 scf/min and a NO_x emission factor of 0.06 lbs NO_x/MMBtu and assuming 0.55 ft³ of methane per cubic foot of LFG.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 7E.

- b. Applicable Compliance Method for CO: Compliance with the hourly CO emission limitation shall be determined using the recordkeeping required in d) and the following calculation:

$\frac{\text{Flow Rate } \text{ft}^3}{\text{minute}}$	$0.XX \text{ ft}^3 \text{ CH}_4$	1000 BTU	EF lbs CO*	60 minutes	$\leq 29.7 \text{ lbs}$
	ft ³ LFG	ft ³ CH ₄	1,000,000 BTU	hour	hour

*This value has been established based upon a manufacturer's performance guarantee.

Actual flow rate and methane content is determined from monitoring and recordkeeping in d) and the emission factors shall be based upon manufacturer's guarantee or most recent stack testing results, if applicable.



For demonstration purposes, compliance was determined using a flow rate of 4,500 scf/min and a CO emission factor of 0.20 lbs CO/MMBtu and assuming 0.55 ft³ of methane per cubic foot of LFG.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 10.

- c. Applicable Compliance Method for SO₂: Compliance with the hourly SO₂ emission limitation shall be determined using the following calculation:

<i>Flow Rate ft³ minute</i>	49.6 ppmv*	64.066 ¹	60 minutes	<=2.26lbs
	1,000,000 MMscf/scf	(0.7302 ² x 520 ³)	hour	hour

*Sulfur concentration in the exhaust gas is based on an AP-42 emission factor of 49.6 ppmv based upon 99.7% LFG control efficiency (worst case emissions for SO₂)

- ¹ – molecular weight of SO₂
- ² – universal gas constant
- ³ – temperature

Actual flow rate is determined from monitoring and recordkeeping in d).

For demonstration purposes compliance was determined using a flow rate of 4,500 scf/min.

If require, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 6C.

- d. Applicable Compliance Method for NMOC: Compliance with the hourly NMOC emission limitation shall be determined using the following calculation:

<i>Flow Rate ft³ minute</i>	946 ppmv*	86.18 ¹	60 minutes	(1-0.98) ²	<=1.2 lbs
	1,000,000 MMscf/scf	(0.7302 ² x 520 ³)	hour		hour

*NMOC concentration in inlet gas based on historic site data (946 ppmv)

- ¹ – molecular weight of NMOC (as hexane)
- ² – control efficiency of the control device
- ³ – universal gas constant
- ⁴ – temperature

Actual flow rate and NMOC content is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 4,500 scf/min.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18.

- e. Applicable Compliance Method for VOC: Compliance with the hourly VOC emission limitation shall be determined using the following calculation:

<i>Flow Rate ft³</i>	946 ppmv*	86.18 ¹	60 mins	(1-0.98) ²	0.39 ⁵	<= 0.5lbs
<i>minute</i>	1,000,000 MMscf/scf	(0.7302 ² x 520 ³)	hour			hour

*NMOC concentration of inlet gas from historic site data (946 ppmv)

¹ – molecular weight of NMOC (as hexane)

² – control efficiency of the control device

³ – universal gas constant

⁴ – temperature

⁵ – percentage of VOC in LFG

Actual flow rate and VOC content is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 4,500 scf/min.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-4 and 18.

- f. Applicable Compliance Method for HCl: Compliance with the hourly HCl emission limitation shall be determined using the following calculation:

<i>Flow Rate ft³</i>	42ppmv*	36.5 ¹	60 minutes	<= 1.09lbs
<i>minute</i>	1,000,000 MMscf/scf	(0.7302 ² x 520 ³)	hour	hour

*HCl concentration in the exhaust gas is based on an AP-42 emission factor of 42.0 ppmv based upon 99.7% LFG control efficiency (worst case emissions for HCl)

¹ – molecular weight of HCl

² – universal gas constant

³ – temperature

Actual flow rate is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 4,500 scf/min.

If require, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Methods 1-4 and 265 or 26A.

- g. Applicable Compliance Method for PM₁₀: Compliance with the hourly PM₁₀ limitation shall be determined using the following calculation:

<i>Flow Rate dry ft³</i>	0.XX ft ³ CH ₄	17 lbs PM*	60 minutes	<= 2.32lbs
<i>minute</i>	ft ³ LFG	1,000,000 ft ³ CH ₄	hour	hour

*AP-42, Section 2.4, Municipal Solid Waste Landfills (November 1998)



All PM is assumed to be PM₁₀

Actual flow rate and methane content is determined from monitoring and recordkeeping in d).

For demonstration purposes, compliance was determined using a flow rate of 4,140 dscf/min and assuming 0.55 ft³ of methane per cubic foot of LFG.

If required, the permittee shall demonstrate compliance with this emission limitation in accordance with 40 CFR Part 60, Appendix A, Methods 1-5.

- (11) Emission Limitation: Emissions from the decommissioned 4,500 ft³/min enclosed combustor shall not exceed 9.90 tons per year SO₂, 5.10 tons per year NMOC, 2.00 tons per year VOC, 4.77 tons per year HCl, and 10.17 tons per year PM₁₀.

Applicable Compliance Method: Compliance with the annual emission limitations are assumed so long as compliance with the corresponding allowable hourly emission limitations are maintained (annual limitation is calculated by multiplying the hourly limitation by 8,760 hrs/yr and dividing by 2,000 lbs/ton).

- (12) Emission Limitation: Visible emissions from the enclosed combustor shall not exceed 10% opacity as a 6-minute average

Applicable Compliance Method: If required, compliance shall be demonstrated through visible emission observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

- (13) Emission Limitation: NO_x emissions from all emission units located at this facility shall not exceed 99.00 tons per rolling 12-month period and CO emissions from all emission units located at this facility shall not exceed 249.00 tons per rolling 12-month period

Applicable Compliance Method: Compliance with the rolling, 12-month limitations for NO_x and CO are based upon the recordkeeping required in d).

The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:

- a. Emission testing shall be conducted to demonstrate compliance with the allowable emissions limitations for NO_x, CO, and NMOC in the exhaust stream, or for overall control of NMOC (control efficiency). The testing shall be conducted within 2.5 years of the issuance of the current TV permit.
- b. The following test method(s) shall be employed to demonstrate compliance with the allowable mass emission rate(s):
 - i. Methods 1-4 of 40 CFR Part 60; and
 - ii. Methods 7, 10, 25, 25A, 25C or 18, as applicable, of 40 CFR Part 60

Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.

The control efficiency (percent reduction in mass emissions between the inlet and outlet of the GCCS) shall be determined in accordance with the test methods and procedures specified in OAC 3745-21-10, or an alternative test protocol approved by the Ohio EPA. The test methods and procedures selected shall be based upon consideration of the diversity of the organic species present and their total concentration, and upon consideration of the potential presence of interfering gas(es).

- c. The test(s) shall be conducted under those representative conditions that challenge to the fullest extent possible, a facility's ability to meet the applicable emission limits and/or control requirements, unless otherwise specified or approved by Ohio EPA, CDO, DAPC. Although this generally consists of operating the emission unit at its maximum material input/production rate, resulting in the highest emission rate of the tested pollutant, there may be circumstances where a lower emission loading is deemed the most challenging control scenario. Failure to test under these conditions is justification for not accepting the test results as a demonstration of compliance.
- d. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" (ITT) notification to Ohio EPA, CDO, DAPC. The ITT notification shall describe, in detail, the proposed test methods and procedures, the emission unit operating parameters, the time(s) and date(s) of the test(s). Failure to submit such notification (ITT) for review and approval prior to the test(s) may result in Ohio EPA, CDO, DAPC's refusal to accept the results of the emission test(s).
- e. Personnel from Ohio EPA, CDO, DAPC shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emission unit and/or the performance of the control equipment.
- f. A comprehensive written report on the results of the emission test(s) shall be signed by the person or persons responsible for the tests and submitted to Ohio EPA, CDO, DAPC within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the Ohio EPA, CDO, DAPC.

[Authority for Term: OAC rule 3745-77-07(C)(1)]

- (14) If subsequently required, in the instance that the decommissioned 4,500 ft³/min enclosed combustor is recommissioned, or if the permittee installs a/an additional control device(s), conduct, or have conducted emission testing to demonstrate the flare(s)/enclosed combustor(s) can operate in compliance with applicable requirements as follows:
 - a. Emissions testing shall be conducted within 180 days of the date the enclosed combustor being recommissioned.
 - b. The following test methods shall be employed to demonstrate compliance with the allowable emission rates:

- i. For an open flare, a performance test shall be conducted to demonstrate compliance with the requirements specified in 40 CFR 60.18. The net heating value of the gas being combusted in the flare and the actual exit velocity of the flare shall be determined in accordance with the procedures and methods specified in 40 CFR 60.754(e).
- ii. For the performance test required in 60.752(b)(2)(iii)(B), Method 25, 25A, 25C or Method 18 of 40 CFR 60 Appendix A shall be used to determine compliance with 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by 60.752(b)(2)(i)(B). If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

$$\text{Control Efficiency} = (\text{NMOC}_{\text{in}} - \text{NMOC}_{\text{out}}) / (\text{NMOC}_{\text{in}})$$

where,

NMOC_{in} = mass of NMOC entering control device

NMOC_{out} = mass of NMOC exiting control device

[Authority for Term: OAC rule 3745-77-07(C)(1)]

- (15) After the installation of a GCCS, in compliance with 40 CFR Part 60.755, the permittee shall calculate the NMOC emission rate for the purpose of determining when the GCCS can be removed as provided in 40 CFR Part 60.752(b)(2)(v), in accordance with the equation and procedures specified in 40 CFR Part 60.754(b), (b)(1), and (b)(2). The permittee may use another method to determine LFG flow rate and NMOC concentration if the method has been approved by Ohio EPA, CDO, DAPC as provided in 40 CFR Part 60.752(b)(2)(i)(B).
- (16) The following equation shall be used to determine the net heating value of the gas being combusted in the flares [from 40 CFR 60.754(e)]:

$$H_t = k * (\text{the summation of } C_i H_i \text{ for } i=1 \text{ through } i=n)$$

where:

H_t = net heating value of the sample, MJ/scm; where the net enthalpy per mole of off gas is based on combustion at 25 C and 760 mm Hg, but the standard temperature for determining the volume corresponding to one mole is 20 C;

k = constant, $1.740 * 10^{-7}$, (1/ppm)(g mole/scm)(MJ/kcal) where the standard temperature for (g mole/scm) is 20 C;

C_i = concentration of sample component "i" (ppm) on a wet basis, as measured for organics by Reference Method 18 and measured for hydrogen and carbon monoxide by ASTM D1946-77; and

H_i = net heat of combustion of sample component "i" (kcal/g mole at 25 C and 760 mm Hg), the net heating value of the combusted LFG as determined in 40 CFR 60.18(f)(3) is calculated from the concentration of methane in the LFG as measured by Method 3C. A minimum of three (3x) 30-minute Method 3C samples are determined. The measurements of other organic components are not applicable. Method 3C may be

used to determine the LFG molecular weight for calculating the flare gas exit velocity under 40 CFR 60.18(f)(4).

- (17) The following equation, taken from 40 CFR 60.18, shall be used to determine the exit velocity of steam assisted and non-assisted flares in conjunction with the net heating value derived from f)(17):

$$V_{max} = (H_t + 28.8) / 31.7$$

Where:

V_{max} = maximum permitted velocity (m/sec);
 28.8 = constant;
 31.7 = constant;
 H_t = net heating value [determined according to f)(17)]

- (18) The following equation shall be used to determine the V_{max} exit velocity as described in 40 CFR 60.18 (unassisted, hydrogen content of at least 8% and flow rate of 122 ft/sec):

$$V_{max} = (X_{h2} - K_1) * K_2$$

Where:

V_{max} = maximum predicted velocity (m/sec);
 K_1 = constant, 6.0 volume % hydrogen;
 K_2 = constant, 3.9 volume % hydrogen (m/sec); and
 X_{h2} = the volume % of hydrogen, on a wet basis, as calculated by using ASTM Method D1946-77, or utilizing methods approved by US EPA in accordance with 40 CFR Part 60, Subpart WWW.

- (19) The following equation shall be used to determine the V_{max} exit velocity of an air assisted flare as described in 40 CFR 60.18 and utilizing the net heating value derived from f)(17):

$$V_{max} = 8.706 + 0.7084(H_t)$$

Where:

V_{max} = maximum permitted velocity (m/sec)
 8.706 is constant
 0.7084 is constant
 H_t = net heating value as determined in 60.18(f)(3)

g) Miscellaneous Requirements

- (1) None.