



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL  
DEFIANCE COUNTY**

**CERTIFIED MAIL**

Street Address:

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:

Lazarus Gov.  
Center

**Application No: 03-13251**

**DATE: 5/24/00**

Defiance County Sanitary Landfill  
Timothy Houck  
500 Court Street Suite E  
Defiance, OH 43512

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging 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 Pollution Prevention at (614) 644-3469.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 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. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission  
236 East Town Street, Room 300  
Columbus, Ohio 43215

Very truly yours,

Thomas G. Rigo  
Field Operations and Permit Section  
Division of Air Pollution Control

CC: USEPA

NWDO



**Permit To Install**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

**FINAL PERMIT TO INSTALL 03-13251**

Application Number: 03-13251  
APS Premise Number: 0320010042  
Permit Fee: **\$400**  
Name of Facility: Defiance County Sanitary Landfill  
Person to Contact: Timothy Houck  
Address: 500 Court Street Suite E  
Defiance, OH 43512

Location of proposed air contaminant source(s) [emissions unit(s)]:

**13207 Canal Road**  
**Defiance Ohio, Ohio**

Description of proposed emissions unit(s):

**Paved and Unpaved Roadways.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) 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 above described 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



Director

## **Part I - GENERAL TERMS AND CONDITIONS**

### **A. State and Federally Enforceable Permit To Install General Terms and Conditions**

#### **1. Monitoring and Related Recordkeeping 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:
  - i. The date, place (as defined in the permit), and time of sampling or measurements.
  - ii. The date(s) analyses were performed.
  - iii. The company or entity that performed the analyses.
  - iv. The analytical techniques or methods used.
  - v. The results of such analyses.
  - vi. 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:
  - i. Reports of any required monitoring and/or recordkeeping of federally enforceable information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
  - ii. 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 appropriate Ohio EPA District Office or local air agency. The written reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous

calendar quarters. See B.11 below if no deviations occurred during the quarter.

- iii. Written reports, which identify any deviations from the federally enforceable monitoring, recordkeeping, and reporting requirements contained in this permit shall be submitted to the appropriate Ohio EPA District Office or local air agency every six months, i.e., 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.
- iv. 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.

## **2. 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 appropriate Ohio EPA District Office or local air agency 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).

## **3. 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.

## **4. 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.

## **5. Severability Clause**

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.

## **6. General Requirements**

- a. The permittee must comply with all terms and conditions of this permit. 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 reissuance, or modification, or for denial of a permit renewal application.
- 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, reopened, 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, reopening 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.

## **7. 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 this Permit To Install.

## **8. Federal and State Enforceability**

Only those terms and conditions designated in this permit as federally enforceable, that 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, the State, and citizens under the Act. All other terms and conditions of this permit shall not be federally enforceable and shall be enforceable under State law only.

## 9. Compliance Requirements

- a. 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:
  - i. 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.
  - ii. 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.
  - iii. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit.
  - iv. 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 appropriate Ohio EPA District Office or local air agency 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:
  - i. Dates for achieving the activities, milestones, or compliance required in any schedule of compliance, and dates when such activities, milestones, or compliance were achieved.
  - ii. 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.

## **10. Permit To Operate Application**

- a. If 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 the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).
- b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. Permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within thirty (30) days after commencing operation of the source(s) covered by this permit.

**B. State Only Enforceable Permit To Install General Terms and Conditions**

**1. Compliance Requirements**

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

**2. Reporting Requirements Related to Monitoring and Recordkeeping 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 appropriate Ohio EPA District Office or local air agency.
- 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 appropriate Ohio EPA District Office or local air agency. 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, i.e., 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.)

**3. Permit Transfers**

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

**4. 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.

#### **5. Termination of Permit To Install**

This permit to install shall terminate within eighteen months of the effective date of the permit to install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. 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 party shows good cause for any such extension.

#### **6. Construction of New Sources(s)**

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources are inadequate or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. 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 the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install 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 prove to be inadequate or cannot meet applicable standards.

#### **7. 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.

**8. 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).

**9. Best Available Technology**

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

**10. Construction Compliance Certification**

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit To Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

**11. Additional Reporting Requirements When There Are No Deviations of Federally Enforceable Emission Limitations, Operational Restrictions, or Control Device Operating Parameter Limitations (See Section A of This Permit)**

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, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

**C. Permit To Install Summary of Allowable Emissions**

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

<b>SUMMARY (for informational purposes only)</b>	
<b>TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS</b>	
<b><u>Pollutant</u></b>	<b><u>Tons Per Year</u></b>
NMOC (non-methane organic compounds)	20.0
Methane	3119
PM10	0.61
PE	9.42

**Part II - FACILITY SPECIFIC TERMS AND CONDITIONS**

**A. State and Federally Enforceable Permit To Install Facility Specific Terms and Conditions**

None

**B. State Only Enforceable Permit To Install Facility Specific Terms and Conditions**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
F001 - Paved and Unpaved Roadways.	OAC rule 3745-31-05	0.84 TPY PE* 0.19 TPY PM <sub>10</sub>  No visible particulate emissions from any paved roadway except for a period of time not to exceed 1 minute during any 60-minute observation period and no visible particulate emissions from any unpaved roadway except for a period of time not to exceed 3 minutes during any 60-minute observation period  Best available control measures that are sufficient to minimize or eliminate visible emissions of fugitive dust (see B.2.b through B.2.g)
	OAC rule 3745-17-08(B)	None (see A.I.2.h)
	OAC rule 3745-17-07(B)(1)	None (see A.I.2.i)

\*The fugitive PE is the total particulate emissions for this emissions unit. PM<sub>10</sub> is included in the total PE.

**2. Additional Terms and Conditions**

- 2.a Implementation of the control measures in accordance with the terms and conditions specified in Section B.I.2 of this permit is appropriate and sufficient to satisfy the best available technology requirements of OAC rule 3745-31-05.
- 2.b The paved and unpaved roadways that are covered by this permit and subject to the above-mentioned requirements are listed below:
- unpaved roadway  
The 0.26-mile main access ramp, 0.18-mile service road north, 1.16-mile perimeter service road, 0.03-mile south exit, and 0.97-mile borrow area roads, as specified in the PTI application.
- paved roadway  
The 0.29-mile main entrance paved road segment , as specified in the PTI application
- 2.c The permittee shall employ reasonably available control measures on all paved and unpaved roadways for the purpose of ensuring compliance with the abovementioned applicable requirements. In accordance with the permittee's permit application, the permittee has committed to treat the roadways with water and/or any other suitable dust suppression chemicals at sufficient treatment frequencies to ensure compliance. Nothing in this paragraph shall prohibit the permittee from employing other control measures to ensure compliance.
- 2.d The needed frequencies of implementation of the control measures shall be determined by the permittee's inspections pursuant to the monitoring section of this permit. Implementation of the control measures shall not be necessary for a roadway that is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Implementation of any control measure may be suspended if unsafe or hazardous driving conditions would be created by its use.
- 2.e Any unpaved roadway, which during the term of this permit is paved or takes the characteristics of a paved surface due to the application of certain types of dust suppressants, may be controlled using any combination of flushing, sweeping, and/or watering. Any unpaved roadway that takes the characteristics of a paved roadway due to the application of certain types of dust suppressants shall remain subject to the visible emission limitation for unpaved roadways. Any unpaved roadway that is paved shall be subject to a visible emission limitation of no visible particulate emissions except for one minute during any 60-minute period.

- 2.f The permittee shall promptly remove, in such a manner as to minimize or prevent resuspension, earth and/or other material from paved streets onto which such material has been deposited by trucking or earth moving equipment or erosion by water or other means.
- 2.g Open-bodied vehicles transporting materials likely to become airborne shall have such materials covered at all times if the control measure is necessary for the materials being transported.
- 2.h The Defiance County Sanitary Landfill 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 emission unit is exempt from the requirements of OAC rule 3745-17-08(B).
- 2.i This emissions unit is exempt from the visible particulate emission limitations specified in OAC rule 3745-17-07(B) pursuant to OAC rule 3745-17-07(B)(11)(e).

## II. Operational Restrictions

- 1. The permittee shall comply with the operational restrictions specified in Section A.II of this permit for purposes of complying with state enforceable emission limitations and control requirements.
- 2. The permittee shall apply dust suppressants to the unpaved roadways to minimize or eliminate, at all times, visible emissions of fugitive dust generated by vehicular traffic. Water and/or any other suitable dust suppression chemicals shall be used as the dust suppressant. The dust suppressant shall be applied to the unpaved surfaces as needed to ensure compliance with this permit. This term and condition shall be waived during wet conditions when there is sufficient moisture to prevent visible emissions of fugitive dust.
- 3. Any material carried off the permittee's property and deposited onto public streets by vehicular traffic or by erosion by water, etc., shall be promptly removed and disposed of properly to minimize or prevent resuspension.
- 4. A maximum speed of fifteen miles per hour shall be posted and enforced on the property.
- 5. Open bodied vehicles transporting materials likely to become airborne shall be covered at all times.

## III. Monitoring and/or Recordkeeping Requirements

- 1. Except as otherwise provided in this section, the permittee shall perform inspections of the roadways in accordance with the following frequencies:

roadways      minimum inspection frequency  
 All roadways    Once during each day of operation

2. The purpose of the inspections is to determine the need for implementation of the above-mentioned control measures. The inspections shall be performed during representative, normal traffic conditions. No inspection shall be necessary for a roadway this is covered with snow and/or ice or if precipitation has occurred that is sufficient for that day to ensure compliance with the above-mentioned applicable requirements. Any required inspection that is not performed due to any of the above identified events shall be performed as soon as such event(s) has (have) ended, except if the next required inspection is within one week.
3. The permittee may, upon receipt of written approval from the appropriate Ohio EPA District Office or local air agency, modify the above-mentioned inspection frequencies if operating experiences indicates that less frequent inspections would be sufficient to ensure compliance with the above-mentioned applicable requirements
4. The permittee shall maintain records of the following information:
  - a. the date and reason any required inspection was not performed, including those inspections that were not performed due to snow and/or ice cover precipitation;
  - b. the date of each inspection where it was determined by te permittee that it was necessary to implement the control measures;
  - c. the dates the control measures were implemented; and
  - d. on a calendar quarter basis, the total number of days the control measures were implemented and the total number of days where snow and/or ice cover or precipitation were sufficient to not require the control measures.

The information required in 4.d shall be updated on a calendar quarter basis within 30 days after the end of each calendar quarter.

#### **IV. Reporting Requirements**

1. The permittee shall submit deviation reports that identify any of the following occurrences:
  - a. each day during which an inspection was not performed by the required frequency, excluding an inspection which was not performed due to an exemption for snow and/or ice cover or precipitation; and
  - b. each instance when a control measure, that was to be implemented as a result of an inspection, was not implemented.

Emissions Unit ID: F001

2. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of the permit.

## V. Testing Requirements

1. Emission Limitation: 0.84 TPY PE, and 0.19 TPY PM<sub>10</sub>

Applicable Compliance Method:

Emission limitations were developed by applying a 90% control efficiency for dust suppression to a maximum potential uncontrolled emission rate of 1.9 TPY PM<sub>10</sub> and 6.4 TPY PE. Compliance shall be demonstrated through the monitoring and recordkeeping requirements in Section B.III of this permit.

2. Emission Limitation Method: There shall be no visible particulate emissions from any paved roadway except for a period of time not to exceed 1 minute during any 60-minute observation period and visible particulate emissions from any unpaved roadway except for a period of time not to exceed 3 minutes during any 60-minute observation period.

Applicable Compliance Method:

Method 22 of 40 CFR Part 60, Appendix A.

3. Emission Limitation: Best available control measures to minimize or eliminate visible particulate emissions of fugitive dust.

Applicable Compliance Method:

The permittee shall demonstrate compliance through monitoring and recordkeeping requirements specified in Section B.III.

## VI. Miscellaneous Requirements

None

**B. State Only Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
F001 - Paved and Unpaved Roadways.	None	None

**2. Additional Terms and Conditions**

2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None

**Part III - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)**

**A. State and Federally Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P901 - Existing Sanitary Waste Landfill.	OAC rule 3745-31-05	Fugitive Landfill Gas 20.0 TPY NMOC 3119 TPY Methane  Fugitive Landfill Particulate Emissions 8.58 TPY PE* 0.49 TPY PM <sub>10</sub>
	OAC rule 3745-17-08(B)	none (see A.I.2.a)
	OAC rule 3745-17-07(B)(1)	none (see A.I.2.b)
	40 CFR 60 Subpart WWW	
	40 CFR 60.752	see A.I.2.c through A.I.2.j
	40 CFR 60.753	see A.II.1 through A.II.7
	40 CFR 60.755	see A.I.2.k through A.I.2.aa
	40 CFR 60.759	see A.I.2.bb through A.I.2.ee

\* The fugitive PE is the total particulate emissions for this emissions unit. PM10 is included in the total PE

Defiance Cou  
PTI Applicati  
**Issued: 5/24/00**

Emissions Unit ID: P901

## 2. Additional Terms and Conditions

- 2.a The Defiance County Sanitary Landfill 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 emission unit is exempt from the requirements of OAC rule 3745-17-08(B).
- 2.b This emissions unit is exempt from the visible particulate emission limitations specified in OAC rule 3745-17-08(B) pursuant to OAC rule 3745-17-07(B)(11)(e).
- 2.c Each owner or operator of an MSW landfill having a design capacity equal to or greater than 2.5 million megagrams and 2.5 million cubic meters, shall either comply with A.I.2.e through A.I.2.i or calculate an NMOC emission rate for the landfill using the procedures specified in A.V.3 through A.V.11. The NMOC emission rate shall be recalculated annually, except as provided in A.IV.2.a.ii.
- 2.d If the calculated NMOC emission rate is less than 50 megagrams per year, the owner or operator shall:
- i. Submit an annual emission report to the Administrator, except as provided for in A.IV.2.a.ii; and
  - ii. Recalculate the NMOC emission rate annually using the procedures specified in A.V.3 until such time as the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, or the landfill is closed.
    - (a) If the NMOC emission rate, upon recalculation required in A.I.2.d.ii, is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system in compliance with A.I.2.e through A.I.2.i.
    - (b) If the landfill is permanently closed, all closure notification shall be submitted to the Administrator as provided for in A.IV.4.
- 2.e If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:
- i. The collection and control system as described in the plan shall meet the design requirements of A.I.2.f.

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- ii. The collection and control system design plan shall include any alternatives to the operation standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of A.I.2.k through A.I.2.aa, A.II.1 through A.II.7, A.III.1 through A.III.12, A.IV.1 through A.IV.7, and A.V.3 through A.V.11 proposed by the owner or operator.
  - iii. The collection and control system design plan shall either conform with specifications for active collection systems in A.I.2.bb through A.I.2.ee or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to A.I.2.bb through A.I.2.ee.
  - iv. The Administrator shall review the information submitted under A.I.2.e.i through A.I.2.e.iii section and either approve it, disapprove it, or request that additional information be submitted. Because of the many site-specific factors involved with landfill gas system design, alternative systems may be necessary. A wide variety of system designs are possible, such as vertical wells, combination horizontal and vertical collection systems, or horizontal trenches only, leachate collection components, and passive systems.
- 2.f If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall install a collection and control system that captures the gas generated within the landfill as required by A.I.2.f.i or A.I.2.f.ii and A.I.2.g within 30 months after the first annual report in which the emission demonstrates that the emission rate is less than 50 megagrams per year, as specified in A.IV.3.b.
- i. An active collection system shall:
    - (a) Be designed to handle the maximum expected gas flow rate from the entire area of the landfill that warrants control over the intended use period of the gas control or treatment system equipment;
    - (b) Collect gas from each area, cell, or group of cells in the landfill in which the initial solid waste has been placed for a period of 5 years or more if active; or 2 years or more if closed or at final grade;
    - (c) Collect gas at a sufficient extraction rate;
    - (d) Be designed to minimize off-site migration of subsurface gas.
  - ii. A passive collection system shall:
    - (a) Comply with the provisions specified in A.I.2.f.i.
    - (b) Be installed with liners on the bottom and all sides in all areas in which gas

is to be collected. The liners shall be installed as required under Sec. 258.40 of 40 CFR.

- 2.g If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall route all the collected gas to a control system that complies with the requirements in either A.I.2.g.ii, or A.I.2.g.iii.
- i. An open flare designed and operated in accordance with the general control device requirements in 40 CFR 60.18;
  - ii. A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight-percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in A.V.8.
  - iii. Route the collected gas to a treatment system that processes the collected gas for subsequent sale or use. All emissions from any atmospheric vent from the gas treatment system shall be subject to the requirements of A.I.2.g.i or A.I.2.g.ii.
- 2.h If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall operate the collection and control device in accordance with the provision of A.II.1 through A.II.7, A.I.2.k through A.I.2.aa, and A.III.6.
- 2.i If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the collection and control system may be capped or removed provided that all the conditions of A.I.2.i.i, A.I.2.i.ii, and A.I.2.i.iii are met;
- i. The landfill shall be a closed landfill as defined in the following:  
  
closed landfill means a landfill in which solid waste is no longer being placed, and in which no additional solid wastes will be placed without first filing a notification of modification as prescribed under 40 CFR 60.7(a)(4). Once a notification of modification has been filed, and additional solid waste is placed in the landfill, the landfill is no longer closed.  
  
A closure report shall be submitted to the Administrator as provided in A.IV.4;

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- ii. The collection and control system shall have been in operation a minimum of 15 years; and
  - iii. Following the procedures specified in A.V.8, the calculated NMOC gas produced by the landfill shall be less than 50 megagrams per year on three successive test dates. The test dates shall be no less than 90 days apart, and no more than 180 days apart.
- 2.j When a MSW landfill is closed, the owner or operator is no longer subject to the requirement to maintain a Title V operating permit for the landfill if the landfill is not otherwise subject to the requirements of Title V and if either of the following conditions are met:
- i. The landfill was never subject to the requirement for a control system under A.I.2.e through A.I.2.i; or
  - ii. The owner or operator meets the conditions for control system removal specified in A.I.2.i.
- 2.k For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with A.I.2.f.i.(a), 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 the Administrator. If k has been determined as specified in A.V.4, the value of k determined from the test shall be used. 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.
- 2.l For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2 L_o R (e^{(-kc)} - e^{(-kt)})$$

where,

Q<sub>m</sub> = maximum expected gas generation flow rate, cubic meters per year

L<sub>o</sub> = methane generation potential, cubic meters per megagrams solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year<sup>(-1)</sup>

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), years

c = time since closure, years (for an active landfill c = 0 and e<sup>(-kc)</sup> = 1)

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- 2.m For sites with known year-to-year solid waste acceptance rate:

$$Q_m = \sum_{i=1}^n k L_o M_i (e^{-kt_i})$$

where,

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

$k$  = methane generation rate constant, year<sup>-1</sup>

$L_o$  = methane generation potential, cubic meters per megagrams solid waste

$M_i$  = mass of solid waste in the  $i$  th section, megagrams

$t_i$  = age of the  $i$  th section, years

- 2.n If a collection and control system 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.I.2.1. If the landfill is still accepting waste, the actual measured flow data will not equal the maximum expected gas generation rate, so calculations using the equations in A.I.2.1 or A.I.2.m or other methods shall be used to predict the maximum expected gas generation rate over the intended period of use of the gas control system equipment.
- 2.o For the purposes of determining sufficient density of gas collectors for compliance with A.I.2.f.i.(b), the owner or operator shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Administrator, capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operation and performance standards.
- 2.p For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with A.I.2.f.i.(c), 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 initiated to correct the exceedance within 5 calendar days, except for the three conditions allowed under A.II.2. If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative time line for correcting the exceedance may be submitted to the Administrator for approval.
- 2.q Owners or operators are not required to expand the system as required in A.I.2.p during the first 180 days after gas collection system startup.
- 2.r 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 nitrogen or oxygen as provided in A.II.3. If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the

exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative time line for correcting the exceedance may be submitted to the Administrator for approval.

- 2.s An owner or operator seeking to demonstrate compliance with A.I.2.f.i.(d) through the use of a collection system not conforming to the specifications provided in A.I.2.bb through A.I.2.ee shall provide information satisfactory to the Administrator as specified in A.I.2.e.iii demonstrating that off-site migration is being controlled.
- 2.t For purposes of compliance with A.II.1, each owner or operator of a controlled landfill shall place each well or design component as specified in the approved design plan as provided in A.I.2.e. Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of 5 years or more if active; or 2 years or more if closed or at final grade.
- 2.u For compliance with the surface methane operational standard as provided in A.II.4, after installation of the collection system, 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 provided in A.I.2.z.
- 2.v For compliance with the surface methane operational standard as provided in A.II.4, the background concentration shall be determined by moving the probe inlet upwind and downwind outside the boundary of the landfill at a distance of at least 30 meters from the perimeter wells.
- 2.w For compliance with the surface methane operational standard as provided in A.II.4, surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of 40 CFR Part 60, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.
- 2.x For compliance with the surface methane operational standard as provided in A.II.4, any reading of 500 ppm or more above background at any location shall be recorded as a monitored exceedance and the actions specified in A.I.2.x.i through A.I.2.x.v shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the

operational requirements of A.II.4.

- i. The location of each monitored exceedance shall be marked and the location recorded.
  - ii. Cover maintenance or adjustments to the vacuum of the adjacent wells to increase the gas collection in the vicinity of each exceedance shall be made and the location shall be re-monitored within 10 calendar days of detecting the exceedance.
  - iii. If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in A.I.2.x.v shall be taken, and no further monitoring of that location is required until the action specified in A.I.2.x.v has been taken.
  - iv. Any location that initially showed an exceedance but has a methane concentration less than 500 ppm methane above background at the 10-day re-monitoring specified in A.I.2.x.ii or A.I.2.x.iii shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 ppm above background, no further monitoring of that location is required until the next quarterly monitoring period. If the 1-month re-monitoring shows an exceedance, the actions specified in A.I.2.x.iii or A.I.2.x.v shall be taken.
  - v. For any location where monitored methane concentration equals or exceeds 500 ppm above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar days of the initial exceedance.
- 2.y For compliance with the surface methane operational standard as provided in A.II.4, the owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.
- 2.z Each owner or operator seeking to comply with the provisions in A.I.2.u through A.I.2.y shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:
- i. The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of 40 CFR Part 60, except that "methane" shall replace all references to VOC.
  - ii. The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.
  - iii. To meet the performance evaluation requirements in section 3.1.3 of Method 21 of

appendix A of 40 CFR Part 60, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of 40 CFR Part 60 shall be used.

- iv. The calibration procedures provided in section 4.2 of Method 21 of appendix A of 40 CFR Part 60 shall be followed immediately before commencing a surface monitoring survey.
- 2.aa The provisions of this subpart apply at all times, except during periods of start-up, shutdown, or malfunction, provided that the duration of start-up, shutdown, or malfunction shall not exceed 5 days for collection systems and shall not exceed 1 hour for treatment or control devices.
- 2.bb Each owner or operator seeking to comply with A.I.2.e shall site active collection wells, horizontal collectors, surface collectors, or other extraction devices at a sufficient density throughout all gas producing areas using the following procedures unless alternative procedures have been approved by the Administrator as provided in A.I.2.e.iii and A.I.2.e.iv:
- 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 expandibility, 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 in A.I.2.bb.i shall address landfill gas migration issues and augmentation of the collection system through the use of active or passive systems at the landfill perimeter or exterior.
- 2.cc The placement of gas collection devices determined in A.I.2.bb.i shall control all gas producing areas, except as provided by A.I.2.cc.i and A.I.2.cc.ii.
- i. Any segregated area of asbestos or non-degradable material may be excluded from collection if documented as provided under A.III.10. The documentation shall provide the nature, date of deposition, location and amount of asbestos or non-degradable material deposited in the area, and shall be provided to the Administrator upon re-request.

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- ii. Any nonproductive area of the landfill may be excluded from control, provided that the total of all excluded areas can be shown to contribute less than 1 percent of the total amount of NMOC emissions from the landfill. The amount, location, and age of the material shall be documented and provided to the Administrator upon request. A separate NMOC emissions estimate shall be made for each section proposed for exclusion, and the sum of all such sections shall be compared to the NMOC emissions estimate for the entire landfill.

Emissions from each section shall be computed using the following equation:

$$Q_i = 2 k L_o M_i (e^{(-kt) i} (C_{nmoc}) (3.6 \times 10^{-9}) ) \text{ where,}$$

$Q_i$  = NMOC emission rate from the  $i$  th section, megagrams per year

$k$  = methane generation rate constant, year<sup>(-1)</sup>

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

$M_i$  = mass of the degradable solid waste in the  $i$  th section, megagram

$t_i$  = age of the solid waste in the  $i$  th section, years

$C_{nmoc}$  = concentration of non-methane organic compounds, parts per million by volume

$3.6 \times 10^{-9}$  = conversion factor

- iii. The values for  $k$ ,  $L_o$ , and  $C_{nmoc}$  determined in field testing shall be used, if field testing has been performed in determining the NMOC emission rate or the radii of influence. If field testing has not been performed, the default values for  $k$ ,  $L_o$  and  $C_{nmoc}$  provided in A.V.1 shall be used.
- 2.dd Each owner or operator seeking to comply with A.I.2.e.i shall construct the gas collection devices using the following equipment or procedures:
- i. The landfill gas extraction components shall be constructed of polyvinyl chloride (PVC), high density polyethylene (HDPE) pipe, fiberglass, stainless steel, or other nonporous corrosion resistant material of suitable dimensions to: convey projected amounts of gases; withstand installation, static, and settlement forces; and withstand planned overburden or traffic loads. The collection system shall extend as necessary to comply with emission and migration standards. Collection devices such as wells and horizontal collectors shall be perforated to allow gas entry without head loss sufficient to impair performance across the intended extent of control. Perforations shall be situated with regard to the need to prevent excessive air infiltration.
- 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,

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centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

- iii. Collection devices may be connected to the collection header pipes below or above the landfill surface. The connector assembly shall include a positive closing throttle valve, any necessary seals and couplings, access couplings and at least one sampling port. The collection devices shall be constructed of PVC, HDPE, fiberglass, stainless steel, or other nonporous material of suitable thickness.
- 2.ee Each owner or operator seeking to comply with A.I.2.e.i shall convey the landfill gas to a control system in compliance with A.I.2.g through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:
- i. For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in A.I.2.ee.ii shall be used.
  - ii. For new collection systems, the maximum flow rate shall be in accordance with A.I.2.k.
- 2.ff Best Available Technology (BAT) for this emissions unit has been determined to be compliance with the terms and conditions of this permit. The permittee will be required to submit a Permit to Install application for the installation of any type of control required by this permit.

## II. Operational Restrictions

1. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of A.I.2.f shall operate the collection system such that gas is collected from each area, cell, or group of cells in the MSW landfill in which solid waste has been in place for:
  - a. 5 years or more if active; or
  - b. 2 years or more if closed or at final grade.
2. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of A.I.2.f shall operate the collection system with negative pressure at each wellhead except under the following conditions:
  - a. A fire or increased well temperature. The owner or operator shall record instances when

- positive pressure occurs in efforts to avoid a fire. These records shall be submitted with the annual reports as provided in A.IV.6.a;
- b. Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;
  - c. A decommissioned well. A well may experience a static positive pressure after shut down to accommodate for declining flows. All design changes shall be approved by the Administrator.
3. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of A.I.2.f shall operate each interior wellhead in the collection system with a landfill gas temperature less than 55 degrees Celsius and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.
- a. The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by A.I.2.e.
  - b. Unless an alternative test method is established as allowed by A.I.2.e, the oxygen shall be determined by an oxygen meter using Method 3A except that:
    - i. The span 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 calibration gases are required, a zero and span, and ambient air may be used as the span;
    - iv. A calibration error check is not required;
    - v. The allowable sample bias, zero drift, and calibration drift are plus or minus 10 percent.
4. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of A.I.2.f shall operate the collection system so that the methane concentration is less than 500 parts per million above background at the surface of the landfill. To

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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 observations 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 the surface testing.

5. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of A.I.2.f shall operate the system such that all collected gases are vented to a control system designed and operated in compliance with A.I.2.g. In the event the collection or control system is inoperable, the gas mover system shall be shut down and all valves in the collection and control system contributing to venting of the gas to the atmosphere shall be closed within 1 hour.
6. Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of A.I.2.f shall operate the control or treatment system at all times when the collected gas is routed to the system.
7. If monitoring demonstrates that the operational requirements in A.II.2 through A.II.4 are not met, corrective action shall be taken as specified in A.I.2.p through A.I.2.r or A.I.2.u through A.I.2.y. If corrective actions are taken as specified in A.I.2.k through A.I.2.aa, the monitored exceedance is not a violation of the operational requirements.

### III. Monitoring and/or Recordkeeping Requirements

1. Except as provided in A.I.2.e.ii, each owner or operator seeking to comply with A.I.2.f.i for an active gas collection system shall install a sampling port and a thermometer other temperature measuring device, or an access port for temperature measurements at each wellhead and:
  - a. Measure the gauge pressure in the gas collection header on a monthly basis as provided in A.I.2.p; and
  - b. Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in A.I.2.r; and
  - c. Monitor temperature of the landfill gas on a monthly basis as provided in A.I.2.r.
2. Except as provided in A.I.2.e.ii, each owner or operator seeking to comply with A.I.2.g using an enclosed combustor shall 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 <plus-minus>1 percent of the temperature being measured expressed in degrees Celsius or plus or minus 0.5 degrees Celsius, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity greater than 44 megawatts.

- b. A device that records flow to or bypass of the control device. The owner or operator shall either:
  - 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 insure that the valve is maintained in the closed position and that the gas flow is not diverted through the bypass line.
  
3. Except as provided in A.I.2.e.ii, each owner or operator seeking to comply with A.I.2.g 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.
  - b. A device that records flow to or bypass of the flare. The owner or operator shall either:
    - 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. Except as provided in A.I.2.e.ii, each owner or operator seeking to demonstrate compliance with A.I.2.g using a device other than an open flare or an enclosed combustor shall provide information satisfactory to the Administrator as provided in A.I.2.e.ii describing the operation of the control device, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator shall review the information and either approve it, or request that additional information be submitted. The Administrator may specify

additional appropriate monitoring procedures.

5. Except as provided in A.I.2.e.ii, each owner or operator seeking to install a collection system that does not meet the specifications in A.I.2.bb through A.I.2.ee or seeking to monitor alternative parameters to those required by A.II.1 through A.II.7, A.V.1 through A.V.8, A.I.2.k through A.I.2.aa, and A.III.3 through A.III.6 shall provide information satisfactory to the Administrator as provided in A.I.2.e.ii and A.I.2.e.iii describing the design and operation of the collection system, the operating parameters that would indicate proper performance, and appropriate monitoring procedures. The Administrator may specify additional appropriate monitoring procedures.
6. Except as provided in A.I.2.e.ii, each owner or operator seeking to demonstrate compliance with A.I.2.u through A.I.2.y, shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in A.I.2.z. Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.
7. Except as provided in A.I.2.e.ii, each owner or operator of an MSW landfill subject to the provisions of A.I.2.c through A.I.2.i shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered A.I.2.c through A.I.2.i, the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.
8. Except as provided in A.I.2.e.ii, each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in A.III.8.a through A.III.8.d as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of 5 years. Records of the control device vendor specifications shall be maintained until removal.
  - a. Where an owner or operator seeks to demonstrate compliance with A.I.2.f:
    - i. The maximum expected gas generation flow rate as calculated in A.I.2.k. The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.
    - ii. The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in A.I.2.bb.i.
  - b. Where an owner or operator seeks to demonstrate compliance with A.I.2.g through use of an enclosed combustion device other than a boiler or process heater with a design heat input capacity greater than 44 megawatts:



readily accessible record of all periods of operation of the boiler or process heater. (Examples of such records could include records of steam use, fuel use, or monitoring data collected pursuant to other State, local, Tribal, or Federal regulatory requirements.)

- d. Each owner or operator seeking to comply 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 A.III.3, and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.
10. Except as provided in A.I.2.e.ii, each owner or operator shall keep for the life of the collection system an up-to-date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.
    - a. Each owner or operator shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under A.I.2.t.
    - b. Each owner or operator shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or non-degradable waste excluded from collection as provided in A.I.2.cc.i as well as any nonproductive areas excluded from collection as provided in A.I.2.cc.ii.
  11. Except as provided in A.I.2.e.ii, each owner or operator shall keep for at least 5 years up-to-date, readily accessible records of all collection and control system exceedances of the operational standards in A.II.1 through A.II.7, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.
  12. Landfill owners or operators who convert design capacity from volume to mass or mass to volume to demonstrate that landfill design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, as provided in the definition of "design capacity", shall keep readily accessible, on-site records of the annual recalculation of site-specific density, design capacity, and the supporting documentation. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

#### **IV. Reporting Requirements**

1. Except as provided in A.I.2.e.ii, each owner or operator shall submit an initial design capacity report to the Administrator.
  - a. The initial design capacity report shall fulfill the requirements of the notification of the date construction is commenced, postmarked no later than 30 days after such date, and

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shall be submitted no later than:

- i. June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991 but before March 12, 1996 or
  - ii. 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.
- b. The initial design capacity report shall contain the following information:
- i. A map or plot of the landfill, providing the size and location of the landfill, and identifying all areas where solid waste may be landfilled according to the permit issued by the State, local, or tribal agency responsible for regulating the landfill.
  - ii. The maximum design capacity of the landfill. Where the maximum design capacity is specified in the permit issued by the State, local, or tribal agency responsible for regulating the landfill, a copy of the permit specifying the maximum design capacity may be submitted as part of the report. If the maximum design capacity of the landfill is not specified in the permit, the maximum design capacity shall be calculated using good engineering practices. The calculations shall be provided, along with the relevant parameters as part of the report. The State, Tribal, local agency or Administrator may request other reasonable information as may be necessary to verify the maximum design capacity of the landfill.
- c. An amended design capacity report shall be submitted to the Administrator providing notification of an increase in the design capacity of the landfill, within 90 days of an increase in the maximum design capacity of the landfill to or above 2.5 million megagrams and 2.5 million cubic meters. This increase in design capacity may result from an increase in the permitted volume of the landfill or an increase in the density as documented in the annual recalculation required in A.III.12.
2. Except as provided in A.I.2.e.ii, each owner or operator shall submit an NMOC emission rate report to the Administrator initially and annually thereafter, except as provided for in A.IV.2.a.ii or A.IV.2.c. The Administrator may request such additional information as may be necessary to verify the reported NMOC emission rate.
- a. The NMOC emission rate report shall contain an annual or 5-year estimate of the NMOC emission rate calculated using the formula and procedures provided in A.V.1 through A.V.6, as applicable.
    - i. The initial NMOC emission rate report may be combined with the initial design capacity report required in A.IV.1 and shall be submitted no later than indicated in A.IV.2.a.i.(a) and A.IV.2.a.i.(b). Subsequent NMOC emission rate reports shall be

submitted annually thereafter, except as provided for in A.IV.2.a.ii and A.IV.2.c.

- (a) June 10, 1996, for landfills that commenced construction, modification, or reconstruction on or after May 30, 1991, but before March 12, 1996, or
      - (b) 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.
    - ii. If the estimated NMOC emission rate as reported in the annual report to the Administrator is less than 50 megagrams per year in each of the next 5 consecutive years, the owner or operator may elect to submit an estimate of the NMOC emission rate for the next 5-year period in lieu of the annual report. This estimate shall include the current amount of solid waste-in-place and the estimated waste acceptance rate for each year of the 5 years for which an NMOC emission rate is estimated. All data and calculations upon which this estimate is based shall be provided to the Administrator. This estimate shall be revised at least once every 5 years. If the actual waste acceptance rate exceeds the estimated waste acceptance rate in any year reported in the 5-year estimate, a revised 5-year estimate shall be submitted to the Administrator. The revised estimate shall cover the 5-year period beginning with the year in which the actual waste acceptance rate exceeded the estimated waste acceptance rate.
  - b. The NMOC emission rate report shall include all the data, calculations, sample reports and measurements used to estimate the annual or 5-year emissions.
  - c. Each owner or operator is exempted from the requirements of A.IV.2.a and A.IV.2.b, after the installation of a collection and control system in compliance with A.I.2.e, during such time as the collection and control system is in operation and in compliance with A.II.1 through A.II.7 and A.I.2.k through A.I.2.aa.
3. Except as provided in A.I.2.e.ii, each owner or operator subject to the provisions of A.I.2.e shall submit a collection and control system design plan to the Administrator within 1 year of the first report, required under A.IV.2, in which the emission rate exceeds 50 megagrams per year, except as follows:
- a. If the owner or operator elects to recalculate the NMOC emission rate after Tier 2 NMOC sampling and analysis as provided in A.V.3 and the resulting rate is less than 50 megagrams per year, annual periodic reporting shall be resumed, using the Tier 2 determined site-specific NMOC concentration, until the calculated emission rate is equal

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to or greater than 50 megagrams per year or the landfill is closed. The revised NMOC emission rate report, with the recalculated emission rate based on NMOC sampling and analysis, shall be submitted within 180 days of the first calculated exceedance of 50 megagrams per year.

- b. If the owner or operator elects to recalculate the NMOC emission rate after determining a site-specific methane generation rate constant (k), as provided in Tier 3 in A.V.4, and the resulting NMOC emission rate is less than 50 Mg/yr, annual periodic reporting shall be resumed. The resulting site-specific methane generation rate constant (k) shall be used in the emission rate calculation until such time as the emissions rate calculation results in an exceedance. The revised NMOC emission rate report based on the provisions of A.V.4 and the resulting site-specific methane generation rate constant (k) shall be submitted to the Administrator within 1 year of the first calculated emission rate exceeding 50 megagrams per year.
4. Except as provided in A.I.2.e.ii, each owner or operator of a controlled landfill shall submit a closure report to the Administrator within 30 days of waste acceptance cessation. The Administrator may request additional information as may be necessary to verify that permanent closure has taken place in accordance with the requirements of 40 CFR 258.60. If a closure report has been submitted to the Administrator, no additional wastes may be placed into the landfill without filing a notification of modification. A notification of any physical or operational change to an existing facility which may increase the emission rate of any air pollutant to which a standard applies, unless that change is specifically exempted. This notice shall be postmarked 60 days or as soon as practicable before the change is commenced and shall include information describing the precise nature of the change, present and proposed emission control systems, productive capacity of the facility before and after the change, and the expected completion date of the change. The Administrator may request additional relevant information subsequent to this notice.
5. Except as provided in A.I.2.e.ii, each owner or operator of a controlled landfill shall submit an equipment removal report to the Administrator 30 days prior to removal or cessation of operation of the control equipment.
  - a. The equipment removal report shall contain all of the following items:
    - i. A copy of the closure report submitted in accordance with A.IV.4;
    - ii. A copy of the initial performance test report demonstrating that the 15 year minimum control period has expired; and
    - iii. Dated copies of three successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year.
  - b. The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in A.I.2.e have been met.

6. Except as provided in A.I.2.e.ii, each owner or operator of a landfill seeking to comply with A.I.2.e using an active collection system designed in accordance with A.I.2.f shall submit to the Administrator annual reports of the recorded information in A.IV.6.a through A.IV.6.f. The initial annual report shall be submitted within 180 days of installation and start-up of the collection and control system, and shall include the initial performance test report required under 40 CFR 60.8. For enclosed combustion devices and flares, reportable exceedances are defined under A.III.9.
  - a. Value and length of time for exceedance of applicable parameters monitored under A.III.1 through A.III.4.
  - b. Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under A.III.1 through A.III.6.
  - c. Description and duration of all periods when the control device was not operating for a period exceeding 1 hour and length of time the control device was not operating.
  - d. All periods when the collection system was not operating in excess of 5 days.
  - e. The location of each exceedance of the 500 parts per million methane concentration as provided in A.II.4 and the concentration recorded at each location for which an exceedance was recorded in the previous month.
  - f. The date of installation and the location of each well or collection system expansion added pursuant to A.I.2.p, A.I.2.t, and A.I.2.x.
  
7. Except as provided in A.I.2.e.ii, each owner or operator seeking to comply with A.I.2.g shall include the following information with the initial performance test report required under 40 CFR 60.8:
  - a. A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for the future collection system expansion;
  - b. The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based;
  - c. The documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material;

- d. The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area;
- e. The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill; and
- f. The provisions for the control of off-site migration.

## V. Testing Requirements

1. Emission Limitation: Fugitive Landfill Gas - 20.0 TPY NMOC and 3119 TPY Methane

### Applicable Compliance Method:

The annual emission limitations represent the maximum potential to emit based on AP-42 chapter 2.4 (11/98) landfill gas generation equations. Maximum potential emissions will occur in the year 2012 and are based on the following:

- a. maximum daily landfill waste acceptance of 500 tons;
- b. biodegradable waste in place at end of 1998 of  $6.995 \times 10^5$  Mg;
- c. maximum landfill capacity of biodegradable waste of  $1.450 \times 10^6$  Mg; and
- d. no controls for landfill gas.

Since the annual limitations represent the emissions unit's maximum potential to emit, no recordkeeping, deviation reporting, or compliance method calculations are required to demonstrate compliance with the above limitations.

2. Emission Limitation: Fugitive Landfill Particulate Emissions - 8.58 TPY PE and 0.49 TPY PM<sub>10</sub>

### Applicable Compliance Method:

Fugitive particulate emissions represents the maximum potential to emit based on AP-42 chapter 11.9-4 (10/98) emission factors for overburden removal, overburden replacement, batch drop, and wind erosion. Compliance shall be demonstrated through the fugitive dust monitoring and recordkeeping requirements in Section A.III.

3. The landfill owner or operator shall calculate the NMOC emission rate using either the equation

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provided in A.V.1.a or the equation provided in A.V.1.b. Both equations may be used if the actual year-to-year solid waste acceptance rate is known, as specified in A.V.1.a, for part of the life of the landfill and the actual year-to-year solid waste acceptance rate is unknown, as specified in A.V.1.b, for part of the life of the landfill. The values to be used in both equations are 0.05 per year for k, 170 cubic meters per megagram for  $L_o$ , and 4,000 parts per million by volume as hexane for the  $C_{nmoc}$ . 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 meteorologic site, the k value to be used is 0.02 per year.

- a. The following equation shall be used if the actual year-to-year solid waste acceptance rate is known.

$$M_{nmoc} = \text{SUM } (i = 1 \text{ to } n) \text{ of } 2(k)(L_o)(M_i)(e^{(-kti)})(C_{nmoc})(3.6 \times 10^{-9})$$

where,

$M_{nmoc}$  = Total NMOC emission rate from the landfill, megagrams per year

k = methane generation rate constant, year<sup>(-1)</sup>

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

$M_i$  = mass of solid waste in the i th section, megagrams

$t_i$  = age of the i th section, years

$C_{nmoc}$  = concentration of NMOC, parts per million by volume as hexane

$3.6 \times 10^{-9}$  = conversion factor

The mass of non-degradable solid waste may be subtracted from the total mass of solid waste in a particular section of the landfill when calculating the value for  $M_i$  if documentation of the nature and amount of such wastes is maintained.

- b. The following equation shall be used if the actual year-to-year solid waste acceptance rate is unknown.

$$M_{nmoc} = 2(L_o)(R)(e^{(-kc)} - e^{(-k)t})(C_{nmoc})(3.6 \times 10^{-9})$$

where,

$M_{nmoc}$  = mass emission rate of NMOC, megagrams per year

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

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year<sup>(-1)</sup>

t = age of landfill, years

$C_{nmoc}$  = concentration of NMOC, parts per million by volume as hexane

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

$3.6 \times 10^{-9}$  = conversion factor

The mass of non-degradable solid waste may be subtracted from the average annual acceptance rate when calculating a value for R, if documentation of the nature and amount of such wastes is maintained.

4. Tier 1. The owner or operator shall compare the calculated NMOC mass emission rate to the standard of 50 megagrams per year.
  - a. If the NMOC emission rate calculated in A.V.1 is less than 50 megagrams per year, then the landfill owner shall submit an emission rate report as provided in A.IV.2.a, and shall recalculate the NMOC mass emission rate annually as required under A.I.2.d.
  - b. If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, then the landfill owner shall either comply with A.I.2.e, or determine a site-specific NMOC concentration and recalculate the NMOC emission rate using the procedures provided in A.V.3.
5. Tier 2. The landfill owner or operator shall determine the NMOC concentration using the following sampling procedure. The landfill owner or operator shall install at least two sample probes per hectare of landfill surface that has retained waste for at least 2 years. If the landfill is larger than 25 hectares in area, only 50 samples are required. The sample probes should be located to avoid known areas of non-degradable solid waste. The owner or operator shall collect and analyze one sample of landfill gas from each probe to determine the NMOC concentration using Method 25C of appendix A of 40 CFR Part 60 or Method 18 of appendix A of 40 CFR Part 60. If using Method 18 of appendix A of 40 CFR Part 60, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). If composite sampling is used, equal volumes shall be taken from each sample probe. If more than the required number of samples are taken, all samples shall be used in the analysis. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of 40 CFR Part 60 by six to convert from C<sub>nmoc</sub> as carbon to C<sub>nmoc</sub> as hexane.
  - a. The landfill owner or operator shall recalculate the NMOC mass emission rate using the equations provided in A.V.1.a or A.V.1.b and using the average NMOC concentration from the collected samples instead of the default value in the equation provided in A.V.1.
  - b. If the resulting mass emission rate calculated using the site-specific NMOC concentration is equal to or greater than 50 megagrams per year, then the landfill owner or operator shall either comply with A.I.2.e, or determine the site-specific methane generation rate constant and recalculate the NMOC emission rate using the site-specific methane generation rate using the procedure specified in A.V.4.

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- c. If the resulting NMOC mass emission rate is less than 50 megagrams per year, the owner or operator shall submit a periodic estimate of the emission rate report as provided in A.IV.2.a and retest the site-specific NMOC concentration every 5 years using the methods specified in this section.
6. Tier 3. The site-specific methane generation rate constant shall be determined using the procedures provided in Method 2E of appendix A of 40 CFR Part 60. The landfill owner or operator shall estimate the NMOC mass emission rate using equations in A.V.1.a or A.V.1.b and using a site-specific methane generation rate constant  $k$ , and the site-specific NMOC concentration as determined in A.V.3 instead of the default values provided in A.V.1. The landfill owner or operator shall compare the resulting NMOC mass emission rate to the standard of 50 megagrams per year.
- a. If the NMOC mass emission rate as calculated using the site-specific methane generation rate and concentration of NMOC is equal to or greater than 50 megagrams per year, the owner or operator shall comply with A.I.2.e.
- b. If the NMOC mass emission rate is less than 50 megagrams per year, then the owner or operator shall submit a periodic emission rate report as provided in A.IV.2.a and shall recalculate the NMOC mass emission rate annually, as provided in A.IV.2.a using the equations in A.V.1 and using the site-specific methane generation rate constant and NMOC concentration obtained in A.V.3. The calculation of the methane generation rate constant is performed only once, and the value obtained from this test shall be used in all subsequent annual NMOC emission rate calculations.
7. The owner or operator may use other methods to determine the NMOC concentration or a site-specific  $k$  as an alternative to the methods required in A.V.3 and A.V.4 if the method has been approved by the Administrator.
8. After the installation of a collection and control system in compliance with A.I.2.k through A.I.2.aa, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in A.I.2.i, using the following equation:

$$M_{nmoc} = 1.89 \times 10^{-3} (Q_{lfg})(C_{nmoc})$$

where,

$M_{nmoc}$  = mass emission rate of NMOC, megagrams per year

$Q_{lfg}$  = flow rate of landfill gas, cubic meters per minute

$C_{nmoc}$  = NMOC concentration, parts per million by volume as hexane

- a. The flow rate of landfill gas,  $Q_{lfg}$ , shall be determined by measuring the total landfill gas flow rate at the common header pipe that leads to the control device using a gas flow measuring device calibrated according to the provisions of section 4 of Method 2E of

appendix A of 40 CFR Part 60.

- b. The average NMOC concentration,  $C_{nmoc}$ , shall be determined by collecting and analyzing landfill gas sampled from the common header pipe before the gas moving or condensate removal equipment using the procedures in Method 25C or Method 18 of appendix A of 40 CFR Part 60. If using Method 18 of appendix A of 40 CFR Part 60, 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 sample location on the common header pipe shall be before any condensate removal or other gas refining units. The landfill owner or operator shall divide the NMOC concentration from Method 25C of appendix A of 40 CFR Part 60 by six to convert from  $C_{nmoc}$  as carbon to  $C_{nmoc}$  as hexane.
- c. The owner or operator may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Administrator.
9. When calculating emissions for PSD purposes, the owner or operator of each MSW landfill shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in 40 CFR 51.166 or 40 CFR 52.21 using AP-42 or other approved measurement procedures.
10. For the performance test required in A.I.2.g.ii, Method 25C or Method 18 of appendix A of 40 CFR Part 60 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 A.I.2.e.ii. If using Method 18 of appendix A of 40 CFR Part 60, 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:

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

where,

$\text{NMOC}_{in}$  = mass of NMOC entering control device

$\text{NMOC}_{out}$  = mass of NMOC exiting control device

## VI. Miscellaneous Requirements

None

**B. State Only Enforceable Section**

**I. Applicable Emissions Limitations and/or Control Requirements**

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
P901 - Existing Sanitary Waste Landfill.	None	None

2. **Additional Terms and Conditions**

- 2.a None

**II. Operational Restrictions**

None

**III. Monitoring and/or Recordkeeping Requirements**

None

**IV. Reporting Requirements**

None

**V. Testing Requirements**

None

**VI. Miscellaneous Requirements**

None