



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
MC 61-53
(317) 232-8603
(800) 451-6027
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TO: Interested Parties / Applicant

DATE: March 19, 2008

RE: Liberty Landfill / 181-23367-00035

FROM: Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Notice of Decision: Approval – Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-17-3-4 and 326 IAC 2, this permit modification is effective immediately, unless a petition for stay of effectiveness is filed and granted, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3-7 and IC 13-15-7-3 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

Pursuant to 326 IAC 2-7-18(d), any person may petition the U.S. EPA to object to the issuance of a Title V operating permit or modification within sixty (60) days of the end of the forty-five (45) day EPA review period. Such an objection must be based only on issues that were raised with reasonable specificity during the public comment period, unless the petitioner demonstrates that it was impracticable to raise such issues, or if the grounds for such objection arose after the comment period.

To petition the U.S. EPA to object to the issuance of a Title V operating permit, contact:

U.S. Environmental Protection Agency
401 M Street
Washington, D.C. 20406

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-
2251
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(800) 451-6027
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Mr. James Davis
Liberty Landfill, Inc.
124 Twin Bridges Road
Danville, Indiana 46122

March 19, 2008

Re: 181-23367-00035
First Significant Permit Modification to
Part 70 Permit No.: T 181-18254-00035

Dear Mr. Davis:

Liberty Landfill, Inc. was issued a Part 70 Operating Permit Renewal on February 20, 2006 for a stationary municipal solid waste landfill. A letter requesting changes to this permit was received on June 26, 2006. Pursuant to the provisions of 326 IAC 2-7-12 a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document.

Liberty Landfill, Inc. and Liquid Solutions, LLC have requested that IDEM, OAQ issue a separate Title V permit to Liquid Solutions, LLC for their industrial wastewater treatment facilities. Therefore, the source definition for this collocated source has been revised. Liberty Landfill is also transferring operational control of an existing 1,000 scfm enclosed flare and wastewater evaporation system to Liquid Solutions, LLC. This flare and evaporator, along with the applicable requirements, will be removed from the Liberty Landfill Title V permit. Enforceable limits on the emissions of HAPs, VOC and SO₂ will be added to the Liberty Landfill Title V permit in order to keep the total potential to emit of HAPs from this collocated source to below the major source levels and in order to keep the total potential to emit of VOC and SO₂ to less than 250 tons per year each. The equipment listing will be revised to add the existing landfill gas treatment system to the list of emission units. The NSPS and NESHAP requirements for this source will be revised to reflect the current requirements for this equipment. The NSPS and NESHAP will be reformatted in the permit to reflect the verbatim federal language that is applicable to the emission units at Liberty Landfill.

All other conditions of the permit shall remain unchanged and in effect. Please find attached a copy of the revised permit.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Mr. Stephen Treimel, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7902 to speak directly to Mr. Treimel. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, or call (800) 451-6027, and ask for Duane Van Laningham or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed By:
Matthew Stuckey, Deputy Branch Chief
Permits Branch
Office of Air Quality

Attachments
ERG/ST

cc: File - White County
U.S. EPA, Region V
White County Health Department
Air Compliance Section Inspector
Compliance Data Section
Administrative and Development
Technical Support and Modeling - Michele Boner
Billing, Licensing and Training Section - Dan Stamatkin



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PART 70 OPERATING PERMIT RENEWAL OFFICE OF AIR QUALITY

**Liberty Landfill, Inc.
8635 East State Road 16
Monticello, Indiana 47960**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

The Permittee must comply with all conditions of this permit. Noncompliance with any provisions of this permit is grounds for enforcement action; permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. Noncompliance with any provision of this permit, except any provision specifically designated as not federally enforceable, constitutes a violation of the Clean Air Act. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. An emergency does constitute an affirmative defense in an enforcement action provided the Permittee complies with the applicable requirements set forth in Section B, Emergency Provisions.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T181-18254-00035	
Original Signed by: Paul Dubenetzky, Assistant Commissioner Office of Air Quality	Issuance Date: February 20, 2006 Expiration Date: February 20, 2011

Significant Permit Modification No.: 181-23367-00035	
Issued by: Original Signed By: Matthew Stuckey, Deputy Branch Chief Permits Branch Office of Air Quality	Issuance Date: March 19, 2008 Expiration Date: February 20, 2011

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 through A.3 is descriptive information and does not constitute enforceable conditions. However, the Permittee should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Permittee to obtain additional permits or seek modification of this permit pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary municipal solid waste landfill.

Source Address:	8635 E. State Road 16, Monticello, IN 47960
Mailing Address:	8635 E. State Road 16, Monticello, IN 47960
SIC Code:	4953
County Location:	White
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program Minor Source under PSD Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

This source consists of a municipal solid waste landfill with a collocated industrial wastewater processing facility:

- (a) Liberty Landfill, Inc. (Source ID # 181-00035), is located at 8653 East State Road 16, Monticello, Indiana 47960 (SIC: 4953); and
- (b) Liquid Solutions, LLC, (Source ID # 181-00047), the supporting operation, is located at 8635 East State Road 16, Monticello, Indiana 47960.

IDEM has determined that Liberty Landfill, Inc. and Liquid Solutions, LLC are located on contiguous properties, have the same two-digit SIC code (Major Group 49: Electric, Gas, And Sanitary Services), and Liquid Solutions, LLC is dependent wholly upon the output (landfill gas and waste heat) of the Liberty Landfill, Inc. for its operation. Therefore, Liberty Landfill, Inc. and Liquid Solutions, LLC will be considered as one source, as defined by 326 IAC 2-7-1(22), based on this business relationship.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)] [326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.
- (b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.
- (c) One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60,

Subpart WWW and 40 CFR 63, Subpart AAAA.

- (d) One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.
- (e) Four (4) 1,148 horsepower (8.9 MMBtu/hr) engines, identified as EG1 through EG4, constructed in 2005, using treated landfill gas as a fuel, each with a landfill gas input rate of 307 scfm of landfill gas, and exhausting through stacks ES1 through ES4, respectively. Each engine is equipped with a crankcase for engine oil, which consumes a maximum of 20 gallons of engine oil per month and exhausts through a crankcase breather vent. (The crankcase breather vent is an insignificant activity.)

A.4 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)]
[326 IAC 2-7-5(15)]

This stationary source also includes the following insignificant activities which are specifically regulated, as defined in 326 IAC 2-7-1(21):

- (a) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, consisting of one (1) parts washing station, constructed in 2004, with a maximum capacity of 20 gallons. [326 IAC 8-3-2] [326 IAC 8-3-5]
- (b) Paved and unpaved roads and parking lots with public access. [326 IAC 6-4]

A.5 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because:

- (a) It is a major source, as defined in 326 IAC 2-7-1(22);
- (b) It is a source in a source category designated by the United States Environmental Protection Agency (U.S. EPA) under 40 CFR 70.3 (Part 70 - Applicability).

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-7-1]

Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-7) shall prevail.

B.2 Permit Term [326 IAC 2-7-5(2)] [326 IAC 2-1.1-9.5] [326 IAC 2-7-4(a)(1)(D)] [IC 13-15-3-6(a)]

- (a) This permit, T181-18254-00035, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.
- (b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, including any permit shield provided in 326 IAC 2-7-15, until the renewal permit has been issued or denied.

B.3 Term of Conditions [326 IAC 2-1.1-9.5]

Notwithstanding the permit term of a permit to construct, a permit to operate, or a permit modification, any condition established in a permit issued pursuant to a permitting program approved in the state implementation plan shall remain in effect until:

- (a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or
- (b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-7-7]

Unless otherwise stated, all terms and conditions in this permit, including any provisions designed to limit the source's potential to emit, are enforceable by IDEM, the United States Environmental Protection Agency (U.S. EPA) and by citizens in accordance with the Clean Air Act.

B.5 Severability [326 IAC 2-7-5(5)]

The provisions of this permit are severable; a determination that any portion of this permit is invalid shall not affect the validity of the remainder of the permit.

B.6 Property Rights or Exclusive Privilege [326 IAC 2-7-5(6)(D)]

This permit does not convey any property rights of any sort or any exclusive privilege.

B.7 Duty to Provide Information [326 IAC 2-7-5(6)(E)]

- (a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ, may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The submittal by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34). Upon request, the Permittee shall also furnish to IDEM, OAQ, copies of records required to be kept by this permit.
- (b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-7-4(f)] [326 IAC 2-7-6(1)] [326 IAC 2-7-5(3)(C)]

- (a) Where specifically designated by this permit or required by an applicable requirement, any application form, report, or compliance certification submitted shall contain certification by a responsible official of truth, accuracy, and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.
- (b) One (1) certification shall be included, using the attached Certification Form, with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.
- (c) A responsible official is defined at 326 IAC 2-7-1(34).

B.9 Annual Compliance Certification [326 IAC 2-7-6(5)]

- (a) The Permittee shall annually submit a compliance certification report which addresses the status of the source's compliance with the terms and conditions contained in this permit, including emission limitations, standards, or work practices. All certifications shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in letter form no later than July 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Air Enforcement Branch - Indiana (AE-17J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

- (b) The annual compliance certification report required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) The annual compliance certification report shall include the following:
 - (1) The appropriate identification of each term or condition of this permit that is the basis of the certification;
 - (2) The compliance status;
 - (3) Whether compliance was continuous or intermittent;
 - (4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-7-5(3); and
 - (5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ, may require to determine the compliance status of the source.

The submittal by the Permittee does require the certification by the "responsible official"

as defined by 326 IAC 2-7-1(34).

**B.10 Preventive Maintenance Plan [326 IAC 2-7-5(1),(3) and (13)] [326 IAC 2-7-6(1) and (6)]
[326 IAC 1-6-3]**

- (a) The Permittee shall prepare, maintain and implement Preventive Maintenance Plans (PMPs) for the source as described in 326 IAC 1-6-3. At a minimum, the PMPs shall include:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.
- (b) A copy of the PMPs shall be submitted to IDEM, OAQ, upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ, may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMPs do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.11 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation.
- (b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:
- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
 - (2) The permitted facility was at the time being properly operated;
 - (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
 - (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ, within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

Telephone Number: 1-800-451-6027 (ask for Office of Air Quality,
Compliance Section), or
Telephone Number: 317-233-0178 (ask for Compliance Section)
Facsimile Number: 317-233-6865

- (5) For each emergency lasting one (1) hour or more, the Permittee submitted the attached Emergency Occurrence Report Form or its equivalent, either by mail or facsimile to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

within two (2) working days of the time when emission limitations were exceeded due to the emergency.

The notice fulfills the requirement of 326 IAC 2-7-5(3)(C)(ii) and must contain the following:

- (A) A description of the emergency;
- (B) Any steps taken to mitigate the emissions; and
- (C) Corrective actions taken.

The notification which shall be submitted by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.
- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ, may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4(c)(9) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ, by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
- (h) The Permittee shall include all emergencies in the Quarterly Deviation and Compliance Monitoring Report.

B.12 Permit Shield [326 IAC 2-7-15] [326 IAC 2-7-20] [326 IAC 2-7-12]

- (a) Pursuant to 326 IAC 2-7-15, the Permittee has been granted a permit shield. The permit shield provides that compliance with the conditions of this permit shall be deemed in compliance with any applicable requirements as of the date of permit issuance, provided

that either the applicable requirements are included and specifically identified in this permit or the permit contains an explicit determination or concise summary of a determination that other specifically identified requirements are not applicable. The Indiana statutes from IC 13 and rules from 326 IAC, referenced in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a Part 70 permit under 326 IAC 2-7 or for applicable requirements for which a permit shield has been granted.

This permit shield does not extend to applicable requirements which are promulgated after the date of issuance of this permit unless this permit has been modified to reflect such new requirements.

- (b) If, after issuance of this permit, it is determined that the permit is in nonconformance with an applicable requirement that applied to the source on the date of permit issuance, IDEM, OAQ, shall immediately take steps to reopen and revise this permit and issue a compliance order to the Permittee to ensure expeditious compliance with the applicable requirement until the permit is reissued. The permit shield shall continue in effect so long as the Permittee is in compliance with the compliance order.
- (c) No permit shield shall apply to any permit term or condition that is determined after issuance of this permit to have been based on erroneous information supplied in the permit application. Erroneous information means information that the Permittee knew to be false, or in the exercise of reasonable care should have been known to be false, at the time the information was submitted.
- (d) Nothing in 326 IAC 2-7-15 or in this permit shall alter or affect the following:
 - (1) The provisions of Section 303 of the Clean Air Act (emergency orders), including the authority of the U.S. EPA under Section 303 of the Clean Air Act;
 - (2) The liability of the Permittee for any violation of applicable requirements prior to or at the time of this permit's issuance;
 - (3) The applicable requirements of the acid rain program, consistent with Section 408(a) of the Clean Air Act; and
 - (4) The ability of U.S. EPA to obtain information from the Permittee under Section 114 of the Clean Air Act.
- (e) This permit shield is not applicable to any change made under 326 IAC 2-7-20(b)(2) (Sections 502(b)(10) of the Clean Air Act changes) and 326 IAC 2-7-20(c)(2) (trading based on State Implementation Plan (SIP) provisions).
- (f) This permit shield is not applicable to modifications eligible for group processing until after IDEM, OAQ, has issued the modifications. [326 IAC 2-7-12(c)(7)]
- (g) This permit shield is not applicable to minor Part 70 permit modifications until after IDEM, OAQ, has issued the modification. [326 IAC 2-7-12(b)(8)]

B.13 Prior Permits Superseded [326 IAC 2-1.1-9.5][326 IAC 2-7-10.5]

- (a) All terms and conditions of permits established prior to T181-18254-00035 and issued pursuant to permitting programs approved into the state implementation plan have been either

- (1) incorporated as originally stated,
 - (2) revised under 326 IAC 2-7-10.5, or
 - (3) deleted under 326 IAC 2-7-10.5.
- (b) Provided that all terms and conditions are accurately reflected in this permit, all previous registrations and permits are superseded by this Part 70 operating permit.

B.14 Termination of Right to Operate [326 IAC 2-7-10] [326 IAC 2-7-4(a)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-7-3 and 326 IAC 2-7-4(a).

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent, except as allowed for in 40 CFR 60, Subpart WWW. A deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

B.16 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-7-5(6)(C)] [326 IAC 2-7-8(a)] [326 IAC 2-7-9]

- (a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Part 70 permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-7-5(6)(C)] The notification by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ, determines any of the following:
- (1) That this permit contains a material mistake.
 - (2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.
 - (3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-7-9(a)(3)]

- (c) Proceedings by IDEM, OAQ, to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-7-9(b)]
- (d) The reopening and revision of this permit, under 326 IAC 2-7-9(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ, at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ, may provide a shorter time period in the case of an emergency. [326 IAC 2-7-9(c)]

B.17 Permit Renewal [326 IAC 2-7-3] [326 IAC 2-7-4] [326 IAC 2-7-8(e)]

- (a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ, and shall include the information specified in 326 IAC 2-7-4. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (b) A timely renewal application is one that is:
 - (1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and
 - (2) If the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-7 until IDEM, OAQ, takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified in writing by IDEM, OAQ, any additional information identified as being needed to process the application.

B.18 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application shall be certified by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a nonroad engine, as defined in 40 CFR 89.2.

B.19 Permit Revision Under Economic Incentives and Other Programs [326 IAC 2-7-5(8)]
[326 IAC 2-7-12 (b)(2)]

- (a) No Part 70 permit revision shall be required under any approved economic incentives, marketable Part 70 permits, emissions trading, and other similar programs or processes for changes that are provided for in a Part 70 permit.
- (b) Notwithstanding 326 IAC 2-7-12(b)(1) and 326 IAC 2-7-12(c)(1), minor Part 70 permit modification procedures may be used for Part 70 modifications involving the use of economic incentives, marketable Part 70 permits, emissions trading, and other similar approaches to the extent that such minor Part 70 permit modification procedures are explicitly provided for in the applicable State Implementation Plan (SIP) or in applicable requirements promulgated or approved by the U.S. EPA.

B.20 Operational Flexibility [326 IAC 2-7-20] [326 IAC 2-7-10.5]

- (a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-7-20(b), (c), or (e), without a prior permit revision, if each of the following conditions is met:
 - (1) The changes are not modifications under any provision of Title I of the Clean Air Act;
 - (2) Any preconstruction approval required by 326 IAC 2-7-10.5 has been obtained;
 - (3) The changes do not result in emissions which exceed the emissions allowable under this permit (whether expressed herein as a rate of emissions or in terms of total emissions);
 - (4) The Permittee notifies the:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

United States Environmental Protection Agency, Region V
Air and Radiation Division, Regulation Development Branch - Indiana (AR-18J)
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

in advance of the change by written notification at least ten (10) days in advance of the proposed change. The Permittee shall attach every such notice to the Permittee's copy of this permit; and

- (5) The Permittee maintains records on-site which document, on a rolling five (5) year basis, all such changes and emissions trading that are subject to 326 IAC 2-7-20(b), (c), or (e) and makes such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ, in the notices specified in 326 IAC 2-7-20(b)(1), (c)(1), and (e)(2).

- (b) The Permittee may make Section 502(b)(10) of the Clean Air Act changes (this term is defined at 326 IAC 2-7-1(36)) without a permit revision, subject to the constraint of 326 IAC 2-7-20(a). For each such Section 502(b)(10) of the Clean Air Act change, the required written notification shall include the following:
- (1) A brief description of the change within the source;
 - (2) The date on which the change will occur;
 - (3) Any change in emissions; and
 - (4) Any permit term or condition that is no longer applicable as a result of the change.

The notification which shall be submitted is not considered an application form, report or compliance certification. Therefore, the notification by the Permittee does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) Emission Trades [326 IAC 2-7-20(c)]
The Permittee may trade increases and decreases in emissions in the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-7-20(c).
- (d) Alternative Operating Scenarios [326 IAC 2-7-20(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-7-5(9). No prior notification of IDEM, OAQ, or U.S. EPA is required.
- (e) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.21 Source Modification Requirement [326 IAC 2-7-10.5]

A modification, construction, or reconstruction is governed by the requirements of 326 IAC 2 and 326 IAC 2-7-10.5.

B.22 Inspection and Entry [326 IAC 2-7-6] [IC 13-14-2-2] [IC 13-30-3-1] [IC 13-17-3-2]

Upon presentation of proper identification cards, credentials, and other documents as may be required by law, and subject to the Permittee's right under all applicable laws and regulations to assert that the information collected by the agency is confidential and entitled to be treated as such, the Permittee shall allow IDEM, OAQ, U.S. EPA, or an authorized representative to perform the following:

- (a) Enter upon the Permittee's premises where a Part 70 source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have

access to and copy any records that must be kept under the conditions of this permit;

- (c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;
- (d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and
- (e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.23 Transfer of Ownership or Operational Control [326 IAC 2-7-11]

- (a) The Permittee must comply with the requirements of 326 IAC 2-7-11 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.
- (b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The application which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-7-11(c)(3)]

B.24 Annual Fee Payment [326 IAC 2-7-19] [326 IAC 2-7-5(7)][326 IAC 2-1.1-7]

- (a) The Permittee shall pay annual fees to IDEM, OAQ, within thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ, the applicable fee is due April 1 of each year.
- (b) Except as provided in 326 IAC 2-7-19(e), failure to pay may result in administrative enforcement action or revocation of this permit.
- (c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.25 Credible Evidence [326 IAC 2-7-5(3)][326 IAC 2-7-6][62 FR 8314][326 IAC 1-1-6]

For the purpose of submitting compliance certifications or establishing whether or not the Permittee has violated or is in violation of any condition of this permit, nothing in this permit shall preclude the use, including the exclusive use, of any credible evidence or information relevant to whether the Permittee would have been in compliance with the condition of this permit if the appropriate performance or compliance test or procedure had been performed.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-7-5(1)]

C.1 Particulate Emission Limitations For Processes with Process Weight Rates Less Than One Hundred (100) Pounds per Hour [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e)(2), particulate emissions from any process not exempt under 326 IAC 6-3-1(b) or (c) which has a maximum process weight rate less than 100 pounds per hour and the methods in 326 IAC 6-3-2(b) through (d) do not apply shall not exceed 0.551 pounds per hour.

C.2 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61, Subpart M]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

- (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
- (2) If there is a change in the following:
 - (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Quality
100 North Senate Avenue
MC 61-52 IGCN 1003
Indianapolis, Indiana 46204-2251

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) **Demolition and renovation**
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).
- (g) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Accredited Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-7-6(1)]

C.7 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

A test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date. The notification submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ, if the Permittee submits to IDEM, OAQ, a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.8 Compliance Requirements [326 IAC 2-1.1-11]

The commissioner may require stack testing, monitoring, or reporting at any time to assure compliance with all applicable requirements by issuing an order under 326 IAC 2-1.1-11. Any monitoring or testing shall be performed in accordance with 326 IAC 3 or other methods approved by the commissioner or the U. S. EPA.

Compliance Monitoring Requirements [326 IAC 2-7-5(1)] [326 IAC 2-7-6(1)]

C.9 Compliance Monitoring [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

Unless otherwise specified in this permit, all monitoring and record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance (except as otherwise provided for in 40 CFR 60, Subpart WWW. If required by Section D, the Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. If due to circumstances beyond its control, that equipment cannot be installed and operated within ninety (90) days, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

in writing, prior to the end of the initial ninety (90) day compliance schedule, with full justification of the reasons for the inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Unless otherwise specified in the approval for the new emission unit(s), compliance monitoring for new emission units or emission units added through a source modification shall be implemented when operation begins.

C.10 Monitoring Methods [326 IAC 3] [40 CFR 60] [40 CFR 63]

Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60 Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

C.11 Instrument Specifications [326 IAC 2-1.1-11] [326 IAC 2-7-5(3)] [326 IAC 2-7-6(1)]

- (a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.
- (b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-7-5] [326 IAC 2-7-6]

C.12 Emergency Reduction Plans [326 IAC 1-5-2] [326 IAC 1-5-3]

Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on October 22, 1999.
- (b) Upon direct notification by IDEM, OAQ, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate episode level.
[326 IAC 1-5-3]

C.13 Risk Management Plan [326 IAC 2-7-5(12)] [40 CFR 68]

If a regulated substance, as defined in 40 CFR 68, is present at a source in more than a threshold quantity, the Permittee must comply with the applicable requirements of 40 CFR 68.

C.14 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) Except as otherwise provided for in 40 CFR 60, Subpart WWW, upon detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions). Corrective actions may include, but are not limited to, the following:
 - (1) initial inspection and evaluation;

- (2) recording that operations returned to normal without operator action (such as through response by a computerized distribution control system); or
 - (3) any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.
- (c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
- (1) monitoring results;
 - (2) review of operation and maintenance procedures and records;
 - (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Permittee shall maintain the following records:
- (1) monitoring data;
 - (2) monitor performance data, if applicable; and
 - (3) corrective actions taken.

C.15 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate response actions. The Permittee shall submit a description of these response actions to IDEM, OAQ, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize excess emissions from the affected facility while the response actions are being implemented.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred and twenty (120) days is not practicable, IDEM, OAQ may extend the retesting deadline.
- (c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-19]

C.16 Emission Statement [326 IAC 2-7-5(3)(C)(iii)][326 IAC 2-7-5(7)][326 IAC 2-7-19(c)] [326 IAC 2-6]

- (a) In accordance with the compliance schedule specified in 326 IAC 2-6-3(b)(1), starting in 2004 and every three (3) years thereafter, the Permittee shall submit by July 1 an emission statement covering the previous calendar year. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4(c) and shall meet the

following requirements:

- (1) Indicate estimated actual emissions of all pollutants listed in 326 IAC 2-6-4(a);
- (2) Indicate estimated actual emissions of regulated pollutants as defined by 326 IAC 2-7-1(32) ("Regulated pollutant, which is used only for purposes of Section 19 of this rule") from the source, for purpose of fee assessment.

The statement must be submitted to:

Indiana Department of Environmental Management
Technical Support and Modeling Section
Office of Air Quality
100 North Senate Avenue
MC 61-50 IGCN 1003
Indianapolis, Indiana 46204-2251

The emission statement does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

C.17 General Record Keeping Requirements [326 IAC 2-7-5(3)] [326 IAC 2-7-6]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner make a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.18 General Reporting Requirements [326 IAC 2-7-5(3)(C)] [326 IAC 2-1.1-11]

- (a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported. The Quarterly Deviation and Compliance Monitoring Report shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or

certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.

- (d) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Stratospheric Ozone Protection

C.19 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.
- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]: Insignificant Activities

- (a) Degreasing operations that do not exceed 145 gallons per 12 months, except if subject to 326 IAC 20-6, consisting of one (1) parts washing station, constructed in 2004, with a maximum capacity of 20 gallons. [326 IAC 8-3-2] [326 IAC 8-3-5]

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Cold Cleaner (Degreaser) Operations [326 IAC 8-3-2]

Pursuant to 326 IAC 8-3-2 (Cold Cleaner Operations), the Permittee shall:

- (a) equip the cleaner with a cover;
- (b) equip the cleaner with a facility for draining cleaned parts;
- (c) close the degreaser cover whenever parts are not being handled in the cleaner;
- (d) drain cleaned parts for at least fifteen (15) seconds or until dripping ceases;
- (e) provide a permanent, conspicuous label summarizing the operation requirements;
- (f) store waste solvent only in covered containers and not dispose of waste solvent or transfer it to another party, in such a manner that greater than twenty percent (20%) of the waste solvent (by weight) can evaporate into the atmosphere.

D.1.2 Cold Cleaner (Degreaser) Operations [326 IAC 8-3-5]

- (a) Pursuant to 326 IAC 8-3-5(a) (Cold Cleaner Degreaser Operation and Control), the Permittee shall ensure that the following control equipment requirements are met:
- (1) Equip the degreaser with a cover. The cover must be designed so that it can be easily operated with one (1) hand if:
 - (A) the solvent volatility is greater than two (2) kiloPascals (fifteen (15) millimeters of mercury or three-tenths (0.3) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F));
 - (B) the solvent is agitated; or
 - (C) the solvent is heated.
 - (2) Equip the degreaser with a facility for draining cleaned articles. If the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury) or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), then the drainage facility must be internal such that articles are enclosed under the cover while draining. The drainage facility may be external for applications where an internal type cannot fit into the cleaning system.

- (3) Provide a permanent, conspicuous label which lists the operating requirements outlined in subsection (b).
 - (4) The solvent spray, if used, must be a solid, fluid stream and shall be applied at a pressure which does not cause excessive splashing.
 - (5) Equip the degreaser with one (1) of the following control devices if the solvent volatility is greater than four and three-tenths (4.3) kiloPascals (thirty-two (32) millimeters of mercury) or six-tenths (0.6) pounds per square inch) measured at thirty-eight degrees Celsius (38°C) (one hundred degrees Fahrenheit (100°F)), or if the solvent is heated to a temperature greater than forty-eight and nine-tenths degrees Celsius (48.9°C) (one hundred twenty degrees Fahrenheit (120°F)):
 - (A) A freeboard that attains a freeboard ratio of seventy-five hundredths (0.75) or greater.
 - (B) A water cover when solvent is used is insoluble in, and heavier than, water.
 - (C) Other systems of demonstrated equivalent control such as a refrigerated chiller or carbon adsorption. Such systems shall be submitted to the U.S. EPA as a SIP revision.
- (b) Pursuant to 326 IAC 8-3-5(b) (Cold Cleaner Degreaser Operation and Control), the Permittee of a cold cleaning facility shall ensure that the following operating requirements are met:
- (1) Close the cover whenever articles are not being handled in the degreaser.
 - (2) Drain cleaned articles for at least fifteen (15) seconds or until dripping ceases.
 - (3) Store waste solvent only in covered containers and prohibit the disposal or transfer of waste solvent in any manner in which greater than twenty percent (20%) of the waste solvent by weight could evaporate.

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.
- (b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.
- (c) One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.
- (d) One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to New Source Performance Standards Under 40 CFR Part 60 [326 IAC 12-1] [40 CFR Part 60, Subpart A]

- (a) The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1-1, apply to the landfill, gas collection system, gas treatment system, and open flare except when otherwise specified in 40 CFR Part 60, Subpart WWW.
- (b) Pursuant to 40 CFR 60.7, the Permittee shall submit all of the required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.1.2 New Source Performance Standard for Municipal Solid Waste Landfills Requirements [40 CFR Part 60, Subpart WWW] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart WWW, the Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart WWW (included as Attachment A), which are incorporated by reference as 326 IAC 12 and 326 IAC 8-8.1, for the landfill, gas collection system, gas treatment system, and open flare:

40 CFR 60.750
40 CFR 60.751
40 CFR 60.752(b)(2), (d)
40 CFR 60.753
40 CFR 60.754(b), (c), (d)

40 CFR 60.755
40 CFR 60.756(a), (c)(1), (f)
40 CFR 60.757(d), (e), (f)(1), (f)(3) - (6)
40 CFR 60.758(a), (b)(1), (b)(4), (c)(4), (d), (e), (f)
40 CFR 60.759

E.1.3 One Time Deadlines Relating to NSPS (40 CFR 60, Subpart WWW)

- (a) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the date of construction (or reconstruction as defined under §60.15) of an affected facility postmarked no later than 30 days after such date.

- (b) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants Requirements [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to National Emissions Standards for Hazardous Air Pollutants under 40 CFR Part 61 [326 IAC 14-1] [40 CFR Part 61, Subpart A]

- (a) The Permittee shall comply with the provisions of 40 CFR Part 61, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 14-1, for the municipal solid waste landfill.
- (b) Pursuant to 40 CFR 61.8, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.2.2 National Emissions Standards for Hazardous Air Pollutants for Asbestos: Requirements [40 CFR Part 61, Subpart M] [326 IAC 14-2-1]

Pursuant to 40 CFR Part 61, Subpart M, the Permittee shall comply with the following provisions of 40 CFR Part 61, Subpart M (included as Attachment C), incorporated by reference as 326 IAC 14-2-1, for the municipal solid waste landfill:

40 CFR 61.140
40 CFR 61.141
40 CFR 61.154
40 CFR 61.157

E.2.3 One Time Deadlines Relating to NESHAP (40 CFR 61, Subpart M)

Pursuant to 40 CFR 61.7, the Permittee shall submit an application to modify an existing affected facility before the modification is planned to commence.

SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.
- (b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.
- (c) One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.
- (d) One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants Requirements [326 IAC 2-7-5(1)]

E.3.1 General Provisions Relating to National Emissions Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

- (a) Pursuant to 40 CFR 63.1980, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the landfill, gas collection system, gas treatment system, and open flare, as specified in Table 1 of 40 CFR Part 63, Subpart AAAA.
- (b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.3.2 National Emissions Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills: Requirements [40 CFR Part 63, Subpart AAAA] [326 IAC 20-67]

Pursuant to 40 CFR Part 63, Subpart AAAA, the Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart AAAA (included as Attachment B), which are incorporated by reference as 326 IAC 20-67, for the landfill, gas collection system, gas treatment system, and open flare:

- 40 CFR 63.1930
- 40 CFR 63.1935(a)(3)
- 40 CFR 63.1940(a), (c)
- 40 CFR 63.1945(f)
- 40 CFR 63.1950

40 CFR 63.1955(a), (b), (c)
40 CFR 63.1960
40 CFR 63.1965
40 CFR 63.1975
40 CFR 63.1980(a), (b)
40 CFR 63.1985
40 CFR 63.1990
40 CFR 63, Table 1

E.3.3 One Time Deadlines Relating to NESHAP (40 CFR 63, Subpart AAAAA)

- (a) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the date of construction (or reconstruction as defined under §60.15) of an affected facility postmarked no later than 30 days after such date.
- (b) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.
- (c) Pursuant to 40 CFR 63.1645 and 40 CFR 63.1655, the Permittee shall comply with the applicable requirements of 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAAA upon startup.
- (d) Pursuant to 40 CFR 63.10(d)(5), the Permittee shall submit semi-annual Startup, Shutdown and Malfunction reports on January 30 and July 30 of each calendar year.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT OFFICE OF AIR QUALITY

PART 70 OPERATING PERMIT CERTIFICATION

Source Name: Liberty Landfill, Inc.
Source Address: 8635 East State Road 16, Monticello, Indiana 47960
Mailing Address: 124 Twin Bridges Road, Danville, Indiana 46122
Part 70 Permit No.: T181-18254-00035

**This certification shall be included when submitting monitoring, testing reports/results
or other documents as required by this permit.**

Please check what document is being certified:

- Annual Compliance Certification Letter
- Test Result (specify)
- Report (specify)
- Notification (specify)
- Affidavit (specify)
- Other (specify)

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

Signature:

Printed Name:

Title/Position:

Phone:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
Phone: 317-233-0178
Fax: 317-233-6865**

**PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT**

Source Name: Liberty Landfill, Inc.
Source Address: 8635 East State Road 16, Monticello, Indiana 47960
Mailing Address: 124 Twin Bridges Road, Danville, Indiana 46122
Part 70 Permit No.: T181-18254-00035

This form consists of 2 pages

Page 1 of 2

- This is an emergency as defined in 326 IAC 2-7-1(12)
- C The Permittee must notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-0178, ask for Compliance Section); and
 - C The Permittee must submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-6865), and follow the other requirements of 326 IAC 2-7-16.

If any of the following are not applicable, mark N/A

Facility/Equipment/Operation:
Control Equipment:
Permit Condition or Operation Limitation in Permit:
Description of the Emergency:
Describe the cause of the Emergency:

If any of the following are not applicable, mark N/A

Page 2 of 2

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N
Type of Pollutants Emitted: TSP, PM-10, SO ₂ , VOC, NO _x , CO, Pb, other:
Estimated amount of pollutant(s) emitted during emergency:
Describe the steps taken to mitigate the problem:
Describe the corrective actions/response steps taken:
Describe the measures taken to minimize emissions:
If applicable, describe the reasons why continued operation of the facilities are necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value:

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION**

**PART 70 OPERATING PERMIT
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT**

Source Name: Liberty Landfill, Inc.
Source Address: 8635 East State Road 16, Monticello, Indiana 47960
Mailing Address: 124 Twin Bridges Road, Danville, Indiana 46122
Part 70 Permit No.: T181-18254-00035

Months: _____ to _____ Year: _____

Page 1 of 2

<p>This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".</p>	
<input type="checkbox"/> NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.	
<input type="checkbox"/> THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	
Permit Requirement (specify permit condition #)	
Date of Deviation:	Duration of Deviation:
Number of Deviations:	
Probable Cause of Deviation:	
Response Steps Taken:	

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

Attachment A, NSPS Subpart WWW

**Liberty Landfill, Inc.
8635 East State Road 16
Monticello, Indiana 47960**

Permit No.: 181-23367-00035

40 CFR 60, Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

§ 60.750 Applicability, designation of affected facility, and delegation of authority.

(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with Subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.

(b) The following authorities shall be retained by the Administrator and not transferred to the State: §60.754(a)(5).

(c) Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§ 60.751 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

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 §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.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with §60.752(b)(2)(i).

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

Flare means an open combustor without enclosure or shroud.

Gas mover equipment means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this title. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under §257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Modification means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or MSW landfill emissions means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of §60.754. *Nondegradable waste* means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

Solid waste means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 et seq.).

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9262, Feb. 24, 1999]

§ 60.752 Standards for air emissions from municipal solid waste landfills.

(b) 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 paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in §60.754. The NMOC emission rate shall be recalculated annually, except as provided in §60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

(i) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:

(A) The collection and control system as described in the plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.

(B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 proposed by the owner or operator.

(C) The collection and control system design plan shall either conform with specifications for active collection systems in §60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to §60.759.

(D) The Administrator shall review the information submitted under paragraphs (b)(2)(i) (A),(B) and (C) of this 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.

(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in §60.757(c)(1) or (2).

(A) An active collection system shall:

(1) 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;

(2) 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:

(i) 5 years or more if active; or

(ii) 2 years or more if closed or at final grade.

(3) Collect gas at a sufficient extraction rate;

(4) Be designed to minimize off-site migration of subsurface gas.

(B) A passive collection system shall:

(1) Comply with the provisions specified in paragraphs (b)(2)(ii)(A)(1), (2), and (2)(ii)(A)(4) of this section.

(2) 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 §258.40.

(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

(A) An open flare designed and operated in accordance with §60.18 except as noted in §60.754(e);

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in §60.754(d).

(1) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(2) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in §60.756;

(C) 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 paragraph (b)(2)(iii) (A) or (B) of this section.

(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of §§60.753, 60.755 and 60.756.

(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v) (A), (B), and (C) of this section are met:

(A) The landfill shall be a closed landfill as defined in §60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in §60.757(d);

(B) The collection and control system shall have been in operation a minimum of 15 years; and

(C) Following the procedures specified in §60.754(b) of this subpart, 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.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or

(2) The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 71 FR 55127, Sept. 21, 2006]

§ 60.753 Operational standards for collection and control systems.

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of §60.752(b)(2)(ii) of this subpart shall:

(a) 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:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade;

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(1) 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 §60.757(f)(1);

(2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;

(3) 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;

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent, with the following exceptions: less than 138 degrees Fahrenheit (59 degrees Centigrade for well # 50, less than 135 degrees Fahrenheit (57 degrees Centigrade for well # 51, and less than 140 degrees Fahrenheit (60 degrees Centigrade for well # 48. 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.

(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart.

(2) Unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(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 ± 10 percent.

(d) 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 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.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). 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; and

(f) Operate the control or treatment system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c) of this subpart. If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements in this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 61778, Oct. 17, 2000]

§ 60.754 Test methods and procedures.

(b) After the installation of a collection and control system in compliance with §60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in §60.752(b)(2)(v), using the following equation:

$$M_{\text{NMOC}} = 1.89 \times 10^{-3} Q_{\text{LFG}} C_{\text{NMOC}}$$

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

(1) 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 this part.

(2) 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 this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The 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 this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

(3) 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.

(c) When calculating emissions for PSD purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in §§51.166 or 52.21 of this chapter using AP-42 or other approved measurement procedures.

(d) For the performance test required in §60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by §60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

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

where,

NMOC_{in} = mass of NMOC entering control device

NMOC_{out} = mass of NMOC exiting control device

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 65 FR 61778, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006]

§ 60.755 Compliance provisions.

(a) Except as provided in §60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with §60.752(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with §60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L 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 §60.754(a)(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.

(i) For sites with unknown year-to-year solid waste acceptance rate:

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

where,

Q_m = maximum expected gas generation flow rate, cubic meters 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⁻¹

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

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

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^n 2 k L_o M_i (e^{-kt_i})$$

where,

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

k = methane generation rate constant, year⁻¹

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

(iii) 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 paragraphs (a)(1) (i) and (ii) of this section. 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 paragraphs (a)(1) (i) or (ii) 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) For the purposes of determining sufficient density of gas collectors for compliance with §60.752(b)(2)(ii)(A)(2), 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 operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §60.752(b)(2)(ii)(A)(3), the 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 §60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(4) Owners or operators are not required to expand the system as required in paragraph (a)(3) of this section during the first 180 days after gas collection system startup.

(5) 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 §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(6) An owner or operator seeking to demonstrate compliance with §60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in §60.759 shall provide information satisfactory to the Administrator as specified in §60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with §60.753(a), 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 §60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in §60.753(d).

(1) 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 paragraph (d) of this section.

(2) 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.

(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4) (i) through (v) of this section shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d).

(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 the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(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 paragraph (c)(4) (ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above 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 paragraph (c)(4) (iii) or (v) shall be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million 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. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that "methane" shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.

(4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

(e) 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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998]

§ 60.756 Monitoring of operations.

Except as provided in §60.752(b)(2)(i)(B),

(a) Each owner or operator seeking to comply with §60.752(b)(2)(ii)(A) 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:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in §60.755(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in §60.755(a)(5); and

(3) Monitor temperature of the landfill gas on a monthly basis as provided in §60.755(a)(5).

(c) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) 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.

(f) Each owner or operator seeking to demonstrate compliance with §60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.757 Reporting requirements.

Except as provided in §60.752(b)(2)(i)(B),

(d) 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 as described under §60.7(a)(4).

(e) 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.

(1) The equipment removal report shall contain all of the following items:

(i) A copy of the closure report submitted in accordance with paragraph (d) of this section;

(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.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met.

(f) Each owner or operator of a landfill seeking to comply with §60.752(b)(2) using an active collection system designed in accordance with §60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. 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 §60.8. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c).

(1) Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d).

(3) 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.

(4) All periods when the collection system was not operating in excess of 5 days.

(5) The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.

(6) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of §60.755.

Pursuant to 40 CFR 63.1980, the Permittee is required to submit the report required by 40 CFR 60.757(f) on a semi-annual basis.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.758 Recordkeeping requirements.

(a) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of §60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section 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.

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

(i) The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

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

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

(c) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in §60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under §60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(d) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart 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.

(1) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under §60.755(b).

(2) Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii).

(e) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart 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 §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(f) 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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.759 Specifications for active collection systems.

(a) Each owner or operator seeking to comply with §60.752(b)(2)(i) 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 §60.752(b)(2)(i)(C) and (D):

(1) The collection devices within the interior and along the perimeter areas shall be certified to achieve comprehensive control of surface gas emissions by a professional engineer. The following issues shall be addressed in the design: depths of refuse, refuse gas generation rates and flow characteristics, cover properties, gas system expandability, leachate and condensate management, accessibility, compatibility with filling operations, integration with closure end use, air intrusion control, corrosion resistance, fill settlement, and resistance to the refuse decomposition heat.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section 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.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if

documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.

(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:

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

where,

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

k = methane generation rate constant, year^{-1}

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 nonmethane organic compounds, parts per million by volume

3.6×10^{-9} = conversion factor

(iii) The values for k 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 (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k , L_o and C_{NMOC} provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

(1) 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.

(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system

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

(3) 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.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.

(2) For new collection systems, the maximum flow rate shall be in accordance with §60.755(a)(1).

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32753, June 16, 1998; 64 FR 9262, Feb. 24, 1999; 65 FR 18909, Apr. 10, 2000]

Attachment B, NESHAP Subpart AAAA

**Liberty Landfill, Inc.
8635 East State Road 16
Monticello, Indiana 47960**

Permit No.: 181-23367-00035

40 CFR 63, Subpart AAAA—National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

What This Subpart Covers

§ 63.1930 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants for existing and new municipal solid waste (MSW) landfills. This subpart requires all landfills described in §63.1935 to meet the requirements of 40 CFR part 60, subpart Cc or WWW and requires timely control of bioreactors. This subpart also requires such landfills to meet the startup, shutdown, and malfunction (SSM) requirements of the general provisions of this part and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges. It also includes additional reporting requirements.

§ 63.1935 Am I subject to this subpart?

You are subject to this subpart if you meet the criteria in paragraph (a) or (b) of this section.

(a) You are subject to this subpart if you own or operate a MSW landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and meets any one of the three criteria in paragraphs (a)(1) through (3) of this section:

(3) Your MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to §60.754(a) of the MSW landfills new source performance standards in 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan that applies to your landfill.

§ 63.1940 What is the affected source of this subpart?

(a) An affected source of this subpart is a MSW landfill, as defined in §63.1990, that meets the criteria in §63.1935(a) or (b). The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor.

(c) An affected source of this subpart is existing if it is not new.

§ 63.1945 When do I have to comply with this subpart?

(f) If your landfill is an existing affected source and is an area source meeting the criteria in §63.1935(a)(3), you must comply with the requirements in §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 16, 2004, whichever occurs later.

§ 63.1950 When am I no longer required to comply with this subpart?

You are no longer required to comply with the requirements of this subpart when you are no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW, or the Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill.

Standards

§ 63.1955 What requirements must I meet?

(a) You must fulfill one of the requirements in paragraph (a)(1) or (2) of this section, whichever is applicable:

(1) Comply with the requirements of 40 CFR part 60, subpart WWW.

(b) If you are required by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan to install a collection and control system, you must comply with the requirements in §§63.1960 through 63.1985 and with the general provisions of this part specified in table 1 of this subpart.

(c) For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, you must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State or tribal plan, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the SSM requirements in Subpart A of this part as specified in Table 1 of this subpart and all affected sources must submit compliance reports every 6 months as specified in §63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average.

General and Continuing Compliance Requirements

§ 63.1960 How is compliance determined?

Compliance is determined in the same way it is determined for 40 CFR part 60, subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, you have failed to meet the control device operating conditions described in this subpart and have deviated from the requirements of this subpart. Finally, you must develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

§ 63.1965 What is a deviation?

A deviation is defined in §63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the items in paragraphs (a) through (c) of this section.

(a) A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) of subpart WWW are exceeded.

(b) A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.

(c) A deviation occurs when a SSM plan is not developed or maintained on site.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

§ 63.1975 How do I calculate the 3-hour block average used to demonstrate compliance?

Averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW, except that the data collected during the events listed in paragraphs (a), (b), (c), and (d) of this section are not to be included in any average computed under this subpart:

(a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.

(b) Startups.

(c) Shutdowns.

(d) Malfunctions.

Notifications, Records, and Reports

§ 63.1980 What records and reports must I keep and submit?

(a) Keep records and reports as specified in 40 CFR part 60, subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill, with one exception: You must submit the annual report described in 40 CFR 60.757(f) every 6 months.

(b) You must also keep records and reports as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.

Other Requirements and Information

§ 63.1985 Who enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or tribal agency. If the EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency as well as the U.S. EPA has the authority to implement and enforce this subpart. Contact the applicable EPA Regional Office to find out if this subpart is delegated to a State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are as follows. Approval of alternatives to the standards in §63.1955. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.

§ 63.1990 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, 40 CFR part 60, subparts A, Cc, and WWW; 40 CFR part 62, subpart GGG, and subpart A of this part, and this section that follows:

Bioreactor means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen) biodegradation of the waste.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

(1) Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;

(2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or

(3) Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM, regardless of whether or not such failure is permitted by this subpart.

Emissions limitation means any emission limit, opacity limit, operating limit, or visible emissions limit.

EPA approved State plan means a State plan that EPA has approved based on the requirements in 40 CFR part 60, subpart B to implement and enforce 40 CFR part 60, subpart Cc. An approved State plan becomes effective on the date specified in the notice published in the Federal Register announcing EPA's approval.

Federal plan means the EPA plan to implement 40 CFR part 60, subpart Cc for existing MSW landfills located in States and Indian country where State plans or tribal plans are not currently in effect. On the effective date of an EPA approved State or tribal plan, the Federal plan no longer applies. The Federal plan is found at 40 CFR part 62, subpart GGG.

Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes (see §257.2 of this chapter) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion.

Tribal plan means a plan submitted by a tribal authority pursuant to 40 CFR parts 9, 35, 49, 50, and 81 to implement and enforce 40 CFR part 60, subpart Cc.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

As stated in §§63.1955 and 63.1980, you must meet each requirement in the following table that applies to you.

Table 1 to Subpart AAAA of Part 63—Applicability of NESHAP General Provisions to Subpart AAAA

Part 63 Citation	Description	Explanation
63.1(a)	Applicability: general applicability of NESHAP in this part	Affected sources are already subject to the provisions of paragraphs (a)(10)–(12) through the same provisions under 40 CFR, part 60 subpart A.
63.1(b)	Applicability determination for stationary sources	
63.1(e)	Title V permitting	
63.2	Definitions	
63.4	Prohibited activities and circumvention	Affected sources are already subject to the provisions of paragraph (b) through the same provisions under 40 CFR, part 60 subpart A.
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources	
63.6(e)	Operation and maintenance requirements, startup, shutdown and malfunction plan provisions	
63.6(f)	Compliance with nonopacity emission standards	Affected sources are already subject to the provisions of paragraphs (f)(1) and (2)(i) through the same provisions under 40 CFR, part 60 subpart A.
63.10(b)(2)(i)–(b)(2)(v)	General recordkeeping requirements	
63.10(d)(5)	If actions taken during a startup,	

	<p>shutdown and malfunction plan are consistent with the procedures in the startup, shutdown and malfunction plan, this information shall be included in a semi-annual startup, shutdown and malfunction plan report. Any time an action taken during a startup, shutdown and malfunction plan is not consistent with the startup, shutdown and malfunction plan, the source shall report actions taken within 2 working days after commencing such actions, followed by a letter 7 days after the event</p>	
63.12(a)	<p>These provisions do not preclude the State from adopting and enforcing any standard, limitation, etc., requiring permits, or requiring emissions reductions in excess of those specified</p>	
63.15	<p>Availability of information and confidentiality</p>	

Attachment C, NESHAP Subpart M

**Liberty Landfill, Inc.
8635 East State Road 16
Monticello, Indiana 47960**

Permit No.: 181-23367-00035

40 CFR 61, Subpart M—National Emission Standard for Hazardous Air Pollutants for Asbestos

§ 61.140 Applicability.

The provisions of this subpart are applicable to those sources specified in §§61.142 through 61.151, 61.154, and 61.155.

[55 FR 48414, Nov. 20, 1990]

§ 61.141 Definitions.

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in subpart A of this part.

Active waste disposal site means any disposal site other than an inactive site.

Adequately wet means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

Asbestos means the asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

Asbestos-containing waste materials means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

Asbestos mill means any facility engaged in converting, or in any intermediate step in converting, asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.

Asbestos tailings means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

Asbestos waste from control devices means any waste material that contains asbestos and is collected by a pollution control device.

Category I nonfriable asbestos-containing material (ACM) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Commercial asbestos means any material containing asbestos that is extracted from ore and has value because of its asbestos content.

Cutting means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

Demolition means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Emergency renovation operation means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment.

Fabricating means any processing (e.g., cutting, sawing, drilling) of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites (field fabricating) for the construction or restoration of facilities. In the case of friction products, fabricating includes bonding, debonding, grinding, sawing, drilling, or other similar operations performed as part of fabricating.

Facility means any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.

Facility component means any part of a facility including equipment.

Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Fugitive source means any source of emissions not controlled by an air pollution control device.

Glove bag means a sealed compartment with attached inner gloves used for the handling of asbestos-containing materials. Properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rule on occupational exposure to asbestos (appendix G to 29 CFR 1926.58).

Grinding means to reduce to powder or small fragments and includes mechanical chipping or drilling.

In poor condition means the binding of the material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.

Inactive waste disposal site means any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.

Installation means any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).

Leak-tight means that solids or liquids cannot escape or spill out. It also means dust-tight.

Malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of asbestos are increased. Failures of equipment shall not be considered malfunctions if they are caused in any way by

poor maintenance, careless operation, or any other preventable upset conditions, equipment breakdown, or process failure.

Manufacturing means the combining of commercial asbestos—or, in the case of woven friction products, the combining of textiles containing commercial asbestos—with any other material(s), including commercial asbestos, and the processing of this combination into a product. Chlorine production is considered a part of manufacturing.

Natural barrier means a natural object that effectively precludes or deters access. Natural barriers include physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines, and mountains. Remoteness by itself is not a natural barrier.

Nonfriable asbestos-containing material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Nonscheduled renovation operation means a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted.

Outside air means the air outside buildings and structures, including, but not limited to, the air under a bridge or in an open air ferry dock.

Owner or operator of a demolition or renovation activity means any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

Particulate asbestos material means finely divided particles of asbestos or material containing asbestos.

Planned renovation operations means a renovation operation, or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

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

Remove means to take out RACM or facility components that contain or are covered with RACM from any facility.

Renovation means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

Resilient floor covering means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using polarized light microscopy according to the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

Roadways means surfaces on which vehicles travel. This term includes public and private highways, roads, streets, parking areas, and driveways.

Strip means to take off RACM from any part of a facility or facility components.

Structural member means any load-supporting member of a facility, such as beams and load supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls.

Visible emissions means any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

Waste generator means any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

Waste shipment record means the shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

Working day means Monday through Friday and includes holidays that fall on any of the days Monday through Friday.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended by 55 FR 48414, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991; 60 FR 31920, June 19, 1995]

§ 61.154 Standard for active waste disposal sites.

Each owner or operator of an active waste disposal site that receives asbestos-containing waste material from a source covered under §61.149, 61.150, or 61.155 shall meet the requirements of this section:

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) of this section must be met.

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

(i) Be posted in such a manner and location that a person can easily read the legend; and

(ii) Conform to the requirements of 51 cm x 36 cm (20&inch;x14&inch;) upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and

(iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.

Legend Notation

Asbestos Waste Disposal Site 2.5 cm (1 inch) Sans Serif, Gothic or Block.

Do Not Create Dust 1.9 cm (3/4 inch) Sans Serif, Gothic or Block.

Breathing Asbestos is Hazardous to Your Health 14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.

(c) Rather than meet the no visible emission requirement of paragraph (a) of this section, at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

(1) Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or

(2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

(d) Rather than meet the no visible emission requirement of paragraph (a) of this section, use an alternative emissions control method that has received prior written approval by the Administrator according to the procedures described in §61.149(c)(2).

(e) For all asbestos-containing waste material received, the owner or operator of the active waste disposal site shall:

(1) Maintain waste shipment records, using a form similar to that shown in Figure 4, and include the following information:

(i) The name, address, and telephone number of the waste generator.

(ii) The name, address, and telephone number of the transporter(s).

(iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).

(iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.

(v) The date of the receipt.

(2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.

(3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

(4) Retain a copy of all records and reports required by this paragraph for at least 2 years.

(f) Maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.

(g) Upon closure, comply with all the provisions of §61.151.

(h) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

(i) Furnish upon request, and make available during normal business hours for inspection by the Administrator, all records required under this section.

(j) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

(1) Scheduled starting and completion dates.

(2) Reason for disturbing the waste.

(3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.

(4) Location of any temporary storage site and the final disposal site.

(Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

[49 FR 13661, Apr. 5, 1990. Redesignated and amended at 55 FR 48431, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.157 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities that will not be delegated to States:

(1) Section 61.149(c)(2)

(2) Section 61.150(a)(4)

(3) Section 61.151(c)

(4) Section 61.152(b)(3)

(5) Section 61.154(d)

(6) Section 61.155(a).

[55 FR 48433, Nov. 20, 1990]

**Indiana Department of Environmental Management
Office of Air Quality**

**Addendum to the Technical Support Document
for a Significant Permit Modification to a Part 70 Operating Permit**

Source Background and Description

Source Name:	Liberty Landfill, Inc.
Source Location:	8635 East State Road 16, Monticello, Indiana 47960
County:	White
SIC Code:	4953
Significant Permit Modification No.:	181-23367-00035
Permit Reviewer:	ERG/ST

On January 14, 2008, the Office of Air Quality (OAQ) had a notice published in the Herald Journal, Monticello, Indiana, stating that Liberty Landfill, Inc. had applied for a Significant Permit Modification to their Part 70 Operating Permit. The notice also stated that OAQ proposed to issue a permit for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

On February 13, 2008, Liberty Landfill, Inc. submitted comments on the proposed Significant Permit Modification to their Part 70 Operating Permit. The summary of the comments is as follows:

Comment 1: Please revise Condition B.15 (Deviations for Permit Requirements and Conditions). As with the February 5, 2008 Part 70 Renewal Permit for Prairie View Recycling and Disposal Facility, this condition should be revised as follows: "... using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent, except as allowed for in 40 CFR 60, Subpart WWW."

IDEM Response to Comment 1: The permit has been changed as follows:

B.15 Deviations from Permit Requirements and Conditions [326 IAC 2-7-5(3)(C)(ii)]

- (a) Deviations from any permit requirements (for emergencies see Section B - Emergency Provisions), the probable cause of such deviations, and any response steps or preventive measures taken shall be reported to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

using the attached Quarterly Deviation and Compliance Monitoring Report, or its equivalent, **except as allowed for in 40 CFR 60, Subpart WWW**. A deviation required to be reported pursuant to an applicable requirement that exists independent of this

permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report.

The Quarterly Deviation and Compliance Monitoring Report does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

Comment 2: Please revise Condition C.14 (Response to Excursions or Exceedances). As with the February 5, 2008 Part 70 renewal permit for Prairie View Recycling and Disposal Facility, this condition should begin as follows: "Except as otherwise provided for in 40 CFR 60, Subpart WWW" ...

IDEM Response to Comment 2: The permit has been changed as follows:

C.14 Response to Excursions or Exceedances [326 IAC 2-7-5] [326 IAC 2-7-6]

- (a) **Except as otherwise provided for in 40 CFR 60, Subpart WWW, upon** ~~Upon~~ detecting an excursion or exceedance, the Permittee shall restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

...

Comment 3: The emission limits in Section D.1 of the permit appear to be based on an assumption that the Liberty Landfill can adjust its processes, and consequently its emissions, in order to stay below a source-wide (Liberty Landfill and Liquid Solutions) emission cap. An MSW landfill operates differently than a conventional industrial process. A change in the quantity or characteristics of the raw material (i.e., refuse) will not immediately affect the quantity of landfill gas (LFG) generated or the concentration of specific compounds within it. Furthermore, an attempt to reduce emissions by reducing the processing of LFG is ill-advised, as the generated, but unprocessed, LFG may build up and cause excessive odors or even an explosive hazard. It is the opinion of Liberty Landfill that these emission limits, and their associated recordkeeping and reporting requirements, are more appropriate for a conventional industrial process that can better control its production and whose incoming raw materials have a more immediate impact on its emissions. Comments on specific Section D.1 conditions follow.

Comment 4: Please remove Condition D.1.1 (Hap Minor Limits). It is not necessary to limit HAP emissions from the landfill, since the limits are already greater than the potential to emit of the landfill and its control devices, as evidenced by the calculations in Appendix A of the TSD, which summarizes potential emissions of hazardous air pollutants (HAP) for the Liberty Landfill. The calculation summary (page 6 of Appendix A) clearly demonstrates that current potential HAP emissions at Liberty Landfill are below the emission limits of this condition. Therefore, this condition is not necessary and should be removed. This condition would be appropriate if a future modification at the Liberty Landfill. (e.g., additional LFG combustion devices or a future landfill expansion) increases potential emissions of HAP.

Please remove Condition D.1.4 (HAP Calculations). Per the above comments on Condition D.1.1, this condition is not necessary. Also, the calculations lack flexibility, as measured gas flow may be based on other time periods, such as monthly or daily, instead of standard cubic feet per minute. Finally the multiplier of 0.25 (25%) should be 0.2 (20%) in the Paragraph (c) (1) (c) (3) calculations, to be consistent with the 80% collection efficiency mentioned in the beginning of Paragraph (c).

Finally, please remove Conditions D.1.6 (Recordkeeping Requirements) and D.1.7 (Reporting Requirements). Per the above comments on Condition D.1.1, these conditions are not necessary and should be removed.

IDEM Response to Comments 3 and 4: Liberty Landfill has indicated that they would prefer that the potential to emit (PTE) of a single HAP and a combination of HAPs of the landfill be deemed equivalent to the potential to emit of HAPs at closure as represented in Appendix A to the permit. In this case, limits on emissions of a single HAP and a combination of HAPs are not necessary. However, in calculating the PTE of HAP of the collocated source, the Permittee (Liberty Landfill) must use the PTE of HAPs of the landfill at closure in assessing the total PTE of any single HAP or any combination of HAPs. The permit has been changed as follows: [changes shown also reflect changes made in response to Comment 5 below.]

~~Emission Limitations and Standards [326 IAC 2-7-5(1)]~~

~~D.1.1 HAP Minor Limit~~

- ~~(a) The total emissions of toluene from the landfill (fugitive), flare (FL2), and engines (EG1—EG4) shall be less than 4.48 tons per twelve consecutive month period, with compliance determined at the end of each month. Toluene emissions shall be limited as follows:~~
- ~~(1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.~~
 - ~~(2) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.~~
 - ~~(3) The concentration of toluene in the landfill gas shall be less than 39.3 ppmv.~~
 - ~~(4) The destruction efficiency of toluene in the flare shall be equal to or greater than 99.7% and the destruction efficiency of toluene in the engines shall be equal to or greater than 86.1%.~~
- ~~(b) The total emissions of hydrogen chloride from the flare (FL2) and engines (EG1—EG4) shall be less than 3.80 tons per twelve consecutive month period, with compliance determined at the end of each month. Hydrogen Chloride emissions shall be limited as follows:~~
- ~~(1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.~~
 - ~~(2) The concentration of chlorine-containing compounds in the landfill gas shall be less than 42 ppmv as chloride ion (Cl⁻).~~
- ~~(c) The total emissions of any single HAP other than toluene and hydrogen chloride from the landfill (fugitive), flare (FL2), and engines (EG1—EG4) shall be less than 2.0 tons per twelve consecutive month period, with compliance determined at the end of each month. Single HAP emissions shall be limited as follows:~~
- ~~(1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.~~

- (2) ~~The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.~~
- (3) ~~The concentration of any single HAP other than toluene and hydrogen chloride in the landfill gas shall be less than 14.3 ppmv.~~
- (4) ~~The destruction efficiency of any single halogenated HAP in the flare shall be 98.0%, the destruction efficiency of any single non-halogenated HAP in the flare shall be 99.7%, the destruction efficiency of any single halogenated HAP in the engines shall be 93.0%, and the destruction efficiency of any single non-halogenated HAP in the engines shall be 86.1%.~~
- (d) ~~The total emissions of any combination of HAPs from the landfill (fugitive), flare (FL2), and engines (EG1 – EG4) shall be less than 15.5 tons per twelve consecutive month period, with compliance determined at the end of each month. Combination HAP emissions shall be limited as follows:~~
- (1) ~~The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.~~
- (2) ~~The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.~~
- (3) ~~The concentration of any combination of HAPs in the landfill gas shall be less than 106 ppmv.~~
- (4) ~~The destruction efficiency of any halogenated HAP in the flare shall be 98.0%, the destruction efficiency of any non-halogenated HAP in the flare shall be 99.7%, the destruction efficiency of any halogenated HAP in the engines shall be 93.0%, and the destruction efficiency of any non-halogenated HAP in the engines shall be 86.1%.~~

~~Combined with the limited HAP emissions from Liquid Solutions, the source-wide emissions of HAPs from this collocated source will be less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of any combination of HAPs.~~

Compliance Determination Requirements

D.1.4 HAP Calculations

~~Compliance with the HAP limits in Condition D.1.1 shall be determined as follows:~~

- (a) ~~Emissions of hydrogen chloride from the flare (FL2) and engines (EG1 – EG4) will be calculated based on the amount and concentration of the volatile chlorine compounds in the landfill gas burned. HCl emissions will be calculated using mass balance methods assuming all volatile chlorine that passes through the flare and engines is converted to hydrogen chloride.~~

~~HCl Emissions from landfill gas shall be calculated as follows:~~

$$\text{HCl Emissions (tons)} = \text{LFG Flow Rate (scfm)} \times 42 \text{ ppmv chloride ion (Cl}^-) / 1000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times 35.45 \text{ (mole weight of chloride ion (Cl}^-)) \text{ (lbs/lbs mole)} \times (36.46/35.45) \text{ ratio of molecular weight of HCl to Cl}^- \times 60 \text{ min/hr} \times \text{Number of hours of operation} \times 1 \text{ ton}/2000 \text{ lbs}$$

~~(b) Emissions of other single HAPs and total HAPs from combustion devices (flare FL2 and engines EG1 – EG4) shall be calculated using the recorded total flow rate to these emission units.~~

~~(1) Toluene Emissions from landfill gas shall be calculated as follows:~~

$$\text{Toluene Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 39.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (92.1 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency \%})$$

~~(2) Emissions of any other single HAP from landfill gas shall be calculated as follows:~~

$$\text{Single HAP Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 14.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (84.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency \%})$$

~~(3) Total HAP Emissions from landfill gas shall be calculated as follows:~~

$$\text{Total HAP Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 106 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of Total HAP (89.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency \%})$$

~~(c) Emissions of fugitive HAPs from the landfill shall be calculated using the recorded total flow rate of landfill gas from the landfill gas collection system. Fugitive HAP emissions will be calculated assuming that the landfill gas collection system collects 80% of the landfill gas produced by the landfill.~~

~~(1) Fugitive toluene emissions from the landfill shall be calculated as follows:~~

$$\text{Fugitive Toluene Emissions (tons/yr)} = \text{Total LFG Flow Rate (scfm)} \times 39.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of toluene (92.1 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times 0.25$$

~~(2) Fugitive emissions of any other single HAP from the landfill shall be calculated as follows:~~

$$\text{Fugitive Single HAP Emissions (tons/yr)} = \text{Total LFG Flow Rate (scfm)} \times 14.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (84.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times 0.25$$

~~(3) Fugitive total HAP emissions from the landfill shall be calculated as follows:~~

$$\text{Fugitive Total HAP Emissions (tons/yr)} = \text{Total LFG Flow Rate (scfm)} \times 106 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of Total HAP (89.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times 0.25$$

~~D.1.6 Record Keeping Requirements~~

~~(a) In order to document compliance with Conditions D.1.1 and D.1.2, the Permittee shall maintain the following monthly records:~~

- ~~(1) The amount of landfill gas collected from the landfill;~~
- ~~(2) The amount of landfill gas sent to the engines (EG1 - EG4) and flare (FL4) for combustion;~~
- ~~(3) The emissions of Toluene and Hydrogen Chloride from the landfill (fugitive), engines and flare.~~
- ~~(4) The emissions of any other single HAP and a combination of HAPs from the landfill (fugitive), engines and flare.~~
- ~~(5) The emissions of VOC from the engines and flare.~~
- ~~(6) The emissions of SO₂ from the engines and flare.~~

~~Records shall be maintained monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.1 and D.1.2.~~

~~(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.~~

~~D.1.7 Reporting Requirements~~

~~A quarterly summary of the information to document compliance with Conditions D.1.1 and D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION~~

~~Part 70 Quarterly Report~~

Source Name: ~~Liberty Landfill, Inc.~~
 Source Address: ~~8635 East State Road 16, Monticello, Indiana 47960~~
 Mailing Address: ~~124 Twin Bridges Road, Danville, Indiana 46122~~
 Part 70 Permit No.: ~~T181-18254-00035~~
 Facility: ~~Landfill, engines (EG1 - EG4), and flare (FL4)~~
 Parameter: ~~Emissions of Single HAP and Combination of HAPs~~
 Limit: ~~Toluene: less than 4.48 tons; hydrogen chloride: less than 3.80 tons; any other single HAP: less than 2.0 tons; Any combination of HAPs: less than 15.5 tons per twelve consecutive month period~~

~~QUARTER :~~ _____ ~~YEAR:~~ _____

Month	HAP	Column 1	Column 2	Column 1 + Column 2
		This Month	Previous 11	12 Month Total

			Months	
Month 1	Toluene			
	Hydrogen Chloride			
	Other Single HAP			
	Combination HAPs			
Month 2	Toluene			
	Hydrogen Chloride			
	Other Single HAP			
	Combination HAPs			
Month 3	Toluene			
	Hydrogen Chloride			
	Other Single HAP			
	Combination HAPs			

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.

— Deviation has been reported on:

Submitted by: —

Title / Position: —

Signature: —

Date: —

Phone: —

Attach a signed certification to complete this report.

Comment 5: Condition D.1.2 (PSD Minor Limits): These VOC and sulfur dioxide (SO₂) emission limits are barely one to two percent of the 250 ton per year PSD major source thresholds that are the source-wide emission caps. Because the Liberty Landfill's contribution to source-wide VOC and SO₂ emissions is so minimal, this condition is not necessary and should be removed.

Please remove Condition D.1.5 (VOC and SO₂ Calculations). Per the above comments on Condition D.1.2, this condition is not necessary. Also, the calculations lack flexibility, as measured gas flow may be based on other time periods, such as monthly or daily, instead of standard cubic feet per minute.

Finally, please remove Conditions D.1.6 (Recordkeeping Requirements) and D.1.7 (Reporting Requirements). Per the above comments on Condition D.1.2, these conditions are not necessary and should be removed.

IDEM Response to Comment 5: Liberty Landfill has indicated that they would prefer that the potential to emit (PTE) of SO₂ and VOC of the landfill be deemed equivalent to the potential to emit of SO₂ and VOC at closure as represented in Appendix A to the permit. In this case, limits on emissions of SO₂ and VOC are not necessary. However, in calculating the PTE of SO₂ and VOC of the collocated source, the Permittees (Liberty Landfill and Liquid Solutions) must use the PTE of SO₂ and VOC of the landfill at closure in assessing the total PTE of SO₂ and VOC for determining compliance with the PSD minor limits in the Liquid Solutions permit. The permit has been changed as follows:

D.1.2 PSD Minor Limits

- (a) The VOC emissions from the flare (FL2) and engines (EG1—EG4) shall be less than 1.91 tons per twelve consecutive month period, with compliance determined at the end of each month. VOC emissions shall be limited as follows:
- (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (2) The destruction efficiency of VOC in the flare shall be 99.2% and the destruction efficiency of VOC in the engines shall be 97.2%.
 - (3) The concentration of VOC in landfill gas shall be less than 235 ppmv.
- (b) The SO₂ emissions from the flare (FL2) and engines (EG1—EG4) shall be less than 5.38 tons per twelve consecutive month period, with compliance determined at the end of each month. SO₂ emissions shall be limited as follows:
- (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (2) The concentration of sulfur compounds in the landfill gas shall be less than 46.9 ppmv as sulfur.

Combined with the limited VOC and SO₂ emissions from Liquid Solutions, the source-wide emissions of VOCs and SO₂ from this collocated source will each be less than 250 tons per year.

D.1.5 VOC and SO₂ Calculations

Compliance with the PSD minor limits in Condition D.1.2 shall be determined as follows:

- (a) Emissions of sulfur dioxide will be calculated based on the amount and concentration of the volatile sulfur compounds in the landfill gas burned. SO₂ Emissions from landfill gas shall be calculated as follows:

$$\text{SO}_2 \text{ Emissions (tons)} = \text{Flow Rate (scfm)} \times 49.6 \text{ ppmv S} / 1000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of S (32.06 lbs/lbs mole)} \times 2 \text{ (ratio of molecular weight of SO}_2 \text{ to S)} \times 60 \text{ min/hr} \times \text{Number of hours of operation} \times 1 \text{ ton/2000 lbs}$$

- (b) Emissions of VOC will be calculated based on the amount and concentration of the volatile organic compounds in the landfill gas burned.

VOC Emissions from landfill gas shall be calculated as follows:

$$\text{VOC Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 235 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of Hexane (86.2 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton/2000 lbs} \times (1 - \% \text{ Control Efficiency})$$

D.1.6 Record Keeping Requirements

- (a) In order to document compliance with Conditions D.1.1 and D.1.2, the Permittee shall maintain the following monthly records:
- (1) The amount of landfill gas collected from the landfill;

- ~~(2) The amount of landfill gas sent to the engines (EG1-EG4) and flare (FL4) for combustion;~~
- ~~(3) The emissions of Toluene and Hydrogen Chloride from the landfill (fugitive), engines and flare.~~
- ~~(4) The emissions of any other single HAP and a combination of HAPs from the landfill (fugitive), engines and flare.~~
- ~~(5) The emissions of VOC from the engines and flare.~~
- ~~(6) The emissions of SO₂ from the engines and flare.~~

~~Records shall be maintained monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.1 and D.1.2.~~

~~D.1.7 Reporting Requirements~~

~~A quarterly summary of the information to document compliance with Conditions D.1.1 and D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).~~

~~INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE DATA SECTION~~

~~Part 70 Quarterly Report~~

Source Name: ~~Liberty Landfill, Inc.~~
 Source Address: ~~8635 East State Road 16, Monticello, Indiana 47960~~
 Mailing Address: ~~124 Twin Bridges Road, Danville, Indiana 46122~~
 Part 70 Permit No.: ~~T181-18254-00035~~
 Facility: ~~Engines (EG1 - EG4), and flare (FL4)~~
 Parameter: ~~Emissions of VOC and Sulfur Dioxide~~
 Limit: ~~VOC: less than 1.01 tons per twelve consecutive month period~~
~~SO₂: less than 5.38 tons per twelve consecutive month period~~

QUARTER : _____ YEAR: _____

Month	HAP	Column 1	Column 2	Column 1 + Column 2
		This Month	Previous 11 Months	12-Month Total
Month 1	VOC			
	SO ₂			
Month 2	VOC			
	SO ₂			
	VOC			

Month 3	SO ₂			
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~~No deviation occurred in this quarter.~~

~~Deviation/s occurred in this quarter.~~

~~— Deviation has been reported on:~~

~~Submitted by: —~~

~~Title / Position: —~~

~~Signature: —~~

~~Date: —~~

~~Phone: —~~

~~Attach a signed certification to complete this report.~~

As a result of the changes to the Liberty Landfill due to Comments 3, 4, and 5 above, IDEM has also changed Conditions D.1.1 and D.1.2 of the Liquid Solutions permits SSM 181-25252-00047 and T 181-25104-00047 to reflect the fact that the unlimited PTE of Liberty Landfill, combined with the limited PTE from Liquid Solutions, are limited to less than the major source levels for HAPs and less than the major source threshold for PSD for VOC and SO₂. Those changes are shown in the Addendums to the TSD for SSM 181-25252-00047 and T 181-25104-00047.

Comment 6: In the *Actual Emissions* section of the Technical Support Document (TSD), please update the data in this table according to the attached summary report for the Liberty Landfill's 2006 Triennial Emission Statement.

IDEM Response to Comment 6: The *Actual Emissions* section of the Technical Support Document should read as follows:

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2003 **2006** OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	Not reported 12.1
PM10	3 10.92
PM2.5	7
SO ₂	2 3.21
VOC	2 7.55
CO	14 63.6
NO _x	8 43.93
HAP	Not reported

No changes have been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Comment 7: In the Appendix A to the Technical Support Document, please update the information for the Vehicle Traffic Emissions calculations using the following annual vehicle numbers: 25,000 for transfer trailers and 4,000 for dump trucks.

IDEM Response to Comment 7: Appendix A to the Technical Support Document should read as shown in Appendix A to the TSD Addendum.

No changes have been made to the TSD because the OAQ prefers that the Technical Support Document reflect the permit that was on public notice. Changes to the permit or technical support material that occur after the public notice are documented in this Addendum to the Technical Support Document. This accomplishes the desired result of ensuring that these types of concerns are documented and part of the record regarding this permit decision.

Upon further review, the OAQ has decided to make the following revisions to the permit (bolded language has been added, the language with a line through it has been deleted). The Table of Contents has been modified, if applicable, to reflect these changes.

1. Condition D.1.3 has been removed, and the Facility Description for Section D.1 has been removed. Condition B.10 already requires the Permittee to prepare, maintain and implement Preventive Maintenance Plans. Section D.2 of the permit has been re-numbered accordingly. The landfill, gas collection system, gas treatment system, and flare are regulated by conditions in Sections E.1, E.2, and E.3 of the permit. The Permit has been changed as follows:

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

- ~~(a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.~~
- ~~(b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.~~
- ~~(c) One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.~~
- ~~(d) One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.~~

~~(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)~~

~~D.1.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]~~

~~A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.~~

2. The rule citation in Condition E.3.1 has been corrected as follows:

E.3.1 General Provisions Relating to National Emissions Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

- (a) Pursuant to 40 CFR ~~63.5025~~ **63.1980**, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the landfill, gas collection system, gas treatment system, and open flare, as specified in Table 1 of 40 CFR Part 63, Subpart AAAA.

**Indiana Department of Environmental Management
Office of Air Quality**

**Technical Support Document (TSD) for a
Part 70 Significant Permit Modification**

Source Description and Location

Source Name:	Liberty Landfill, Inc.
Source Location:	8635 East State Road 16, Monticello, Indiana 47960
County:	White
SIC Code:	4953
Operation Permit No.:	T181-18254-00035
Operation Permit Issuance Date:	February 20, 2006
Significant Permit Modification No.:	181-23367-00035
Permit Reviewer:	ERG/ST

Source Definition

In Title V Operating Permit T181-18254-00035, issued on February 20, 2006, the source was defined as a landfill site with an on-site contractor. Liberty Landfill, Inc., the primary operation, owns and operates a municipal solid waste landfill, while Liquid Solutions, LLC, the on-site contractor, operates an enclosed flare/leachate evaporator system. Liberty Landfill, Inc. and Liquid Solutions, LLC submitted an application on June 26, 2006 requesting that IDEM issue separate Title V permits to each entity. IDEM has re-evaluated the Source Definition for these two entities as follows:

This source consists of a municipal solid waste landfill with a collocated industrial wastewater processing facility:

- (a) Liberty Landfill, Inc. (Source ID # 181-00035), the primary operation, is located at 8635 East State Road 16, Monticello, Indiana 47960, and
- (b) Liquid Solutions, LLC, source ID # 181-00047), the supporting operation, is located at 8635 East State Road 16, Monticello, Indiana 47960.

IDEM has determined that Liberty Landfill, Inc. and Liquid Solutions, LLC are located on contiguous properties, have the same two-digit SIC code (Major Group 49: Electric, Gas, And Sanitary Services), and Liquid Solutions, LLC is dependent wholly upon the output (landfill gas and waste heat) of the Liberty Landfill, Inc. for its operation. Therefore, Liberty Landfill, Inc. and Liquid Solutions, LLC will be considered as one source, as defined by 326 IAC 2-7-1(22), based on this business relationship.

History

IDEM, OAQ has reviewed a permit application from Liberty Landfill, Inc. and Liquid Solutions, LLC, submitted on June 26, 2006, relating to the construction and operation of a new industrial wastewater evaporation system. Liberty Landfill, Inc. and Liquid Solutions, LLC have further requested that IDEM, OAQ issue a separate Title V permit to Liquid Solutions, LLC for their industrial wastewater treatment facilities. Liberty Landfill, Inc. has also requested that IDEM modify its existing Title V permit.

Liquid Solutions proposes to operate an industrial wastewater treatment facility consisting of two (2) wastewater evaporation systems. The heat for the evaporation systems will be provided by landfill gas and waste heat obtained from Liberty landfill. This project involves transferring operational control of an existing 1,000 scfm enclosed flare (FL4) and wastewater evaporation system (E-VAP) to Liquid Solutions, LLC and increasing the amount of industrial wastewater accepted for disposal. Liquid Solutions, LLC proposes constructing a second wastewater evaporation system (E-VAP2). The industrial wastewater treatment facility will be operated by Liquid Solutions and will be collocated with the Liberty Landfill as described in the source definition section above. In lieu of a Significant Permit Modification, and for administrative purposes, a separate Part 70 Operating Permit will be issued to Liquid Solutions, LLC. The equipment and requirements for the industrial wastewater treatment facility are described in Significant Source Modification 181-25252-00047 and Title V Operating Permit 181-25104-00047.

Liberty Landfill, Inc. received Part 70 Renewal permit T181-18254-00035 on February 20, 2006. This project involves transferring operational control of an existing 1,000 scfm enclosed flare and wastewater evaporation system to Liquid Solutions, LLC. This flare and evaporator are currently listed in the Liberty Landfill Title V permit.

Existing Approvals

The source was issued Part 70 Operating Permit No. T181-18254-00035 on February 20, 2006.

County Attainment Status

The source is located in White County.

Pollutant	Status
PM10	Attainment
PM2.5	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

Note: On October 25, 2006, the Indiana Air Pollution Control Board finalized a rule revision to 326 IAC 1-4-1 revoking the one-hour ozone standard in Indiana.

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC emissions and NOx emissions are considered when evaluating the rule applicability relating to ozone. White County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.
- (b) White County has been classified as attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as a surrogate for PM2.5 emissions.
- (c) White County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (d) **Fugitive Emissions**
Since this type of operation is not in one of the twenty-eight (28) listed source categories under 326 IAC 2-2 or 326 IAC 2-3, fugitive emissions are not counted toward the determination of PSD applicability.

Actual Emissions

The following table shows the actual emissions from the source. This information reflects the 2003 OAQ emission data.

Pollutant	Actual Emissions (tons/year)
PM	Not reported
PM10	3
PM2.5	7
SO ₂	2
VOC	2
CO	14
NO _x	8
HAP	Not reported

Description of Proposed Permit Modification

The Office of Air Quality (OAQ) has reviewed a permit modification application, submitted by Liberty Landfill, Inc. on June 26, 2006, relating to changes to their current Title V Operating Permit. The changes consist of:

- (a) The removal of emissions units FL4 and E-VAP and associated state and federal requirements from the Liberty Landfill Title V Operating Permit.
- (b) The revision of the Source Description section in the permit. The landfill will now be co-located with Liquid Solutions, LLC. Liquid Solutions, LLC will be issued a separate Part 70 Permit (T181-25104-00047), solely for administrative purposes.
- (c) The listing of emission units at Liberty Landfill has been revised to include an existing landfill gas treatment system. The applicable state and federal regulations have also been added to the Liberty Landfill permit. This existing landfill gas treatment system was constructed in 2005 and is used to treat the landfill gas prior to being burned in the generator engines. This existing landfill gas treatment system has been complying with applicable federal and state regulations.
- (d) The addition of limits on emissions of HAPs from the landfill. In conjunction with limits on HAPs from Liquid Solutions, this collocated source will remain a minor source of HAPs and an area source under Section 112 of the Clean Air Act.

Enforcement Issues

There are no pending enforcement actions.

Emission Calculations

See Appendix A of this document for detailed emission calculations (pages 1 through 6).

Permit Level Determination – Part 70

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source or emission unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, IDEM, or the appropriate local air pollution control agency.”

The table below summarizes the potential to emit after controls, reflecting all limits, of the emission units owned and operated by the Liberty Landfill. The control equipment is required by 40 CFR 60, Subpart WWW. The requirements to operate the control equipment are considered federally enforceable as they are required in a federally enforceable permit.

Process/emission unit	Potential to Emit (tons/year)						HAPs
	PM	PM10	SO ₂	VOC	CO	NO _x	
Four (4) 1,148 HP engine/generators (EG1 – EG4)	7.75	7.75	2.55	1.37	75.8	40.3	Single (hydrogen chloride): 2.75 Combination: 3.78
1,362 scfm Open Flare (FL2)	3.04	3.04	2.83	0.53	60.1	11.0	
Total PTE	10.8	10.8	5.38	1.91	139	51.3	Single: 2.75 Combination: 3.78

Note: Fugitive emissions of VOC, CO, and HAP from the landfill and fugitive emissions of PM10 from the paved and unpaved roads are not included in the determination of Part 70 applicability.

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of carbon monoxide is equal to or greater than 100 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.
- (b) The landfill increased its maximum design capacity in 1993. Since this source is a municipal solid waste landfill that was modified after May 30, 1991, it is subject to 40 CFR 60, Subpart WWW Standards of Performance for Municipal Solid Waste Landfills. Pursuant to the New Source Performance Standard for Municipal Solid Waste Landfills, 40 CFR 60, Subpart WWW, the source is subject to the provisions of 326 IAC 2-7.
- (c) Fugitive Emissions
 Since this type of operation is not in one of the twenty-eight (28) listed source categories under 326 IAC 2-2, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD applicability.

Permit Level Determination – PSD and Section 112 (HAPs)

This source (Liberty Landfill, Inc.) is collocated with another Title V source (Liquid Solutions, LLC). Liquid Solutions is installing new equipment that will increase the combined potential to emit of these two (2) collocated sources. After these modifications, the total potential to emit of the combined source (Liberty Landfill and Liquid Solutions) will be greater than 250 tons per year for VOC and sulfur dioxide, greater than ten (10) tons per year for a single HAP and greater than twenty-five (25) tons per year for a combination of HAPs. However, Liberty Landfill is accepting limits on emissions of VOCs, SO₂, and HAPs in this permit in order to keep total emissions of VOCs, SO₂, and HAPs from this collocated source to less than the major source thresholds. A detailed discussion of the limits taken by Liquid Solutions to keep the combined potential emissions from these two collocated sources to less than the PSD major source thresholds (250 tons per year for any criteria pollutant) and less than the major source thresholds for HAPs (HAPs

emissions equal to or greater than ten (10) tons per year for any single HAP and twenty-five (25) tons per year of a combination of HAPs) can be found in Significant Source Modification 181-23252-00047 and Title V Operating Permit 181-25104-00047.

Liberty Landfill has accepted the following limits on the emissions of HAPs. Combined with HAP emissions from Liquid Solutions, the total emissions of a single HAP and a combination of HAPs from this collocated source are limited to less than the major source thresholds.

- (a) The total emissions of toluene from the landfill (fugitive), flare (FL2), and engines (EG1 – EG4) shall be less than 4.48 tons per twelve consecutive month period, with compliance determined at the end of each month. Toluene emissions shall be limited as follows:
- (1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.
 - (2) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (3) The concentration of toluene in the landfill gas shall be less than 39.3 ppmv.
 - (4) The destruction efficiency of toluene in the flare shall be equal to or greater than 99.7% and the destruction efficiency of toluene in the engines shall be equal to or greater than 86.1%.

Note: the default concentration of toluene in landfill gas is from AP 42, Table 2.4-2. The destruction efficiency of toluene is from AP 42, Table 2.4-3.

- (b) The total emissions of hydrogen chloride from the flare (FL2) and engines (EG1 – EG4) shall be less than 3.80 tons per twelve consecutive month period, with compliance determined at the end of each month. Hydrogen Chloride emissions shall be limited as follows:
- (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (2) The concentration of chlorine-containing compounds in the landfill gas shall be less than 42 ppmv as chloride ion (Cl⁻).

Note: the default concentration of chloride ion (Cl⁻) in landfill gas is from AP 42, Chapter 2.4.4.2. This limit assumes that all chlorine compounds are fully converted to hydrogen chloride during combustion.

- (c) The total emissions of any single HAP other than toluene and hydrogen chloride from the landfill (fugitive), flare (FL2), and engines (EG1 – EG4) shall be less than 2.0 tons per twelve consecutive month period, with compliance determined at the end of each month. Single HAP emissions shall be limited as follows:
- (1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.
 - (2) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less

than 645,436,800 standard cubic feet per year.

- (3) The concentration of any single HAP other than toluene and hydrogen chloride in the landfill gas shall be less than 14.3 ppmv.
- (4) The destruction efficiency of any single halogenated HAP in the flare shall be 98.0%, the destruction efficiency of any single non-halogenated HAP in the flare shall be 99.7%, the destruction efficiency of any single halogenated HAP in the engines shall be 93.0%, and the destruction efficiency of any single non-halogenated HAP in the engines shall be 86.1%.

Note: the default concentration of single HAPs in landfill gas is from AP 42, Table 2.4-1. The destruction efficiency of halogenated and non-halogenated HAPs is from AP 42, Table 2.4-3.

- (d) The total emissions of any combination of HAPs from the landfill (fugitive), flare (FL2), and engines (EG1 – EG4) shall be less than 15.5 tons per twelve consecutive month period, with compliance determined at the end of each month. Combination HAP emissions shall be limited as follows:
 - (1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.
 - (2) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (3) The concentration of any combination of HAPs in the landfill gas shall be less than 106 ppmv.
 - (4) The destruction efficiency of any halogenated HAP in the flare shall be 98.0%, the destruction efficiency of any non-halogenated HAP in the flare shall be 99.7%, the destruction efficiency of any halogenated HAP in the engines shall be 93.0%, and the destruction efficiency of any non-halogenated HAP in the engines shall be 86.1%.

Note: the default concentration of a combination of HAPs in landfill gas is from AP 42, Tables 2.4-1 and 2.4-2. The destruction efficiency of halogenated and non-halogenated HAPs is from AP 42, Table 2.4-3.

Pursuant to 40 CFR 63.2, all fugitive emissions are to be considered in determining whether a stationary source is a major source under Section 112 of the Clean Air Act. Combined with fugitive HAP emissions from the Liberty Landfill and limited HAP emissions from Liquid Solutions, the source-wide emissions of HAPs from this collocated source will be less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of any combination of HAPs. This existing collocated source remains an area source under Section 112 of the Clean air Act after this modification because the potential to emit of a single HAP is limited to less than ten (10) tons per year and the potential to emit of a combination of HAPs is limited to less than twenty-five (25) tons per year by conditions in the permit.

The potential to emit of volatile organic compounds and sulfur dioxide from this existing collocated source each could exceed 250 tons per year after this modification, depending upon the amount of volatile organic compounds and volatile sulfur compounds in the wastewater received for disposal by Liquid Solutions. However, Liquid Solutions has accepted limits on emissions of volatile organic compounds and sulfur dioxide. These limits, combined with the volatile organic

compound and sulfur dioxide emissions from Liberty Landfill, will limit source-wide emissions of volatile organic compounds and sulfur dioxide to less than 250 tons per year. A detailed discussion of these limits can be found in Significant Source Modification 181-25252-00047 and Title V Operating Permit 181-25104-00047.

Liberty Landfill has accepted the following limits on the emissions of VOCs and sulfur dioxide (SO₂):

- (a) The VOC emissions from the flare (FL2) and engines (EG1 – EG4) shall be less than 1.91 tons per twelve consecutive month period, with compliance determined at the end of each month. VOC emissions shall be limited as follows:
 - (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (2) The destruction efficiency of VOC in the flare shall be 99.2% and the destruction efficiency of VOC in the engines shall be 97.2%.
 - (3) The concentration of VOC in landfill gas shall be less than 235 ppmv.

Note: the default concentration of VOC in landfill gas is from AP 42, Table 2.4-2, footnote c. The destruction efficiency of VOC in the flare and engines is from AP 42, Table 2.4-3.

- (b) The SO₂ emissions from the flare (FL2) and engines (EG1 – EG4) shall be less than 5.38 tons per twelve consecutive month period, with compliance determined at the end of each month. SO₂ emissions shall be limited as follows:
 - (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (2) The concentration of sulfur compounds in the landfill gas shall be less than 46.9 ppmv as sulfur.

Note: the default concentration of sulfur compounds in landfill gas is from AP 42, Chapter 2.4.4.2. This limit assumes that all sulfur compounds are fully converted to sulfur dioxide during combustion.

These limits, combined with the volatile organic compound and sulfur dioxide emissions from Liquid Solutions, will limit source-wide emissions of volatile organic compounds and sulfur dioxide to less than 250 tons per year. Therefore, this collocated source remains a minor source under PSD after this modification.

The following table summarizes the potential to emit and emission limitations taken by Liberty Landfill in SPM 181-23367-00035 and by Liquid Solutions in Significant Source Modification 181-23275-00047 and Title V Operating Permit 181-25104-00047.

	Liberty Landfill	Liquid Solutions	Entire Source
Pollutant	Potential To Emit of the Landfill, Flare and Engines (tons/year)	Potential To Emit of the Enclosed Ground Flare and Wastewater Evaporators (tons/year)	Limited Potential To Emit (tons/year)
PM	10.8	2.77	13.6
PM10	10.8	2.77	13.6
SO ₂	5.38	240 *	245
VOC	1.01	220 *	236
CO	136	54.8	193
NO _x	51.3	10.0	61.3
Toluene	4.48 *	5.4 *	9.88
Hydrogen Chloride	3.80 *	6.1 *	9.9
Any Other Single HAP	2.0 *	7.9 *	9.9
Total HAPs	15.5 *	9.4 *	24.9

* Emissions of these pollutants are limited by conditions in the respective permits.

The modification will be incorporated into the Liberty Landfill Part 70 Operating Permit through a significant permit modification issued pursuant to 326 IAC 2-7-12, because this modification requires a case-by-case determination of an emission limitation.

Federal Rule Applicability Determination

The following changes to federal rule applicability result from this permit modification.

- (a) The requirements of the New Source Performance Standard for Municipal Solid Waste Landfills, 40 CFR 60, Subpart WWW for the enclosed flare (FL4) and the evaporation system (E-VAP) have been removed from the Liberty Landfill Title V Operating Permit, as operational control of these emission units has been passed to Liquid Solutions, LLC. The solid waste disposal facility (landfill), gas collection system (GCS), gas treatment system (GTS), and 1,362 scfm flare (FL2) at this source remain subject to the following requirements of the New Source Performance Standard for Municipal Solid Waste Landfills, 40 CFR 60, Subpart WWW, which is incorporated by reference as 326 IAC 12 and 326 IAC 8-8.1:

- 40 CFR 60.750
- 40 CFR 60.751
- 40 CFR 60.752(b)(2), (d)
- 40 CFR 60.753
- 40 CFR 60.754(b), (c), (d)
- 40 CFR 60.755
- 40 CFR 60.756(a), (c)(1), (f)
- 40 CFR 60.757(d), (e), (f)(1), (f)(3) - (6)
- 40 CFR 60.758(a), (b)(1), (b)(4), (c)(4), (d), (e), (f)
- 40 CFR 60.759

- (b) The requirements of the National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills, 40 CFR 63, Subpart AAAA for the enclosed flare (FL4) and the evaporation system (E-VAP) have been removed from the Liberty Landfill Title V Operating Permit, as operational control of these emission units has been passed to Liquid Solutions, LLC. The solid waste disposal facility (landfill), gas collection system (GCS) and 1,362 scfm flare (FL2) at this source remain subject to the following requirements of National Emission Standards for Hazardous Air Pollutants for Municipal

Solid Waste Landfills, 40 CFR 63, Subpart AAAA, incorporated by reference as 326 IAC 20-67:

40 CFR 63.1930
40 CFR 63.1935(a)(3)
40 CFR 63.1940(a), (c)
40 CFR 63.1945(f)
40 CFR 63.1950
40 CFR 63.1955(a), (b), (c)
40 CFR 63.1960
40 CFR 63.1965
40 CFR 63.1975
40 CFR 63.1980(a), (b)
40 CFR 63.1985
40 CFR 63.1990
40 CFR 63, Table 1

- (c) The solid waste disposal facility (landfill) at this source accepts waste containing asbestos and remains subject to the following requirements of the National Emission Standards for Hazardous Air Pollutants for Asbestos Active Waste Disposal Sites, 40 CFR 61, Subpart M, incorporated by reference as 326 IAC 14-2-1:

40 CFR 61.140
40 CFR 61.141
40 CFR 61.154
40 CFR 61.157

- (d) The landfill and existing control equipment are subject to the requirements of the New Source Performance Standard for Municipal Solid Waste Landfills, 40 CFR 60, Subpart WWW (326 IAC 12) and the National Emission Standards for Hazardous Air Pollutants, 326 IAC 14, (40 CFR 60, Subpart AAAA). Pursuant to 40 CFR 60.752(b)(2)(iii), the Permittee of the landfill (Liberty Landfill, Inc.) is required to route all collected landfill gas to a control system that complies with the requirements in either paragraph (b)(2)(iii)(A), (B), or (C) of 40 CFR 60.752.

Therefore, for the portion of the landfill gas that is sent to another entity for control or treatment, the Permittee of the landfill (Liberty Landfill, Inc.) has fulfilled its requirements under 40 CFR 60.752(b)(2)(iii). The requirements of 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA currently in the Liberty Landfill, Inc.'s Part 70 Operating Permit (T181-18254-00035, issued on February 20, 2006) remain in effect.

- (e) The landfill gas treatment system (LFGTS) is subject to the requirements of 40 CFR 60, Subpart WWW because this facility was approved to construct after May 30, 1991 and treats landfill gas pursuant to 40 CFR 60.752(b)(2)(iii)(C). The Permittee of this landfill gas treatment and landfill gas-fueled engine/generation station (Liberty Landfill, Inc.) operates an energy recovery plant in which landfill gas is treated prior to use in Liberty Landfill's landfill gas-fueled engine/generators.

In a notice of proposed rulemaking published in the Federal Register [67 FR 36480] on May 23, 2002, the EPA proposed to amend 40 CFR 60.752 of subpart WWW to clarify the requirements for treated and untreated landfill gas. EPA proposed to amend 40 CFR 60.751 of subpart WWW by adding a definition for treatment system. The May 23, 2002 proposed definition for treatment system specified that the system must filter, de-water, and compress landfill gas. EPA proposed to amend 40 CFR 60.752(b)(2)(iii)(C) of subpart WWW to specify that to achieve compliance with this section, landfill gas must be processed in a system that meets the treatment system definition in the proposed

amendment. EPA also proposed to amend this section to clarify that venting of treated landfill gas to the ambient air is not permitted. In a notice of proposed rulemaking published in the Federal Register [71 FR 53272] on September 8, 2006, EPA refined the May 23, 2002 proposed definitions of "treated landfill gas" and clarified the monitoring requirements for treatment systems.

The landfill gas treatment system (LFGTS) is subject to the following portions of 40 CFR 60, Subpart WWW. Non applicable portions of the NSPS will not be included in the permit.

40 CFR 60.750(a), (b)
40 CFR 60.751
40 CFR 60.752(b)(2)(iii)(A), (B), and (C)
40 CFR 60.753(f)
40 CFR 60.755(e)
40 CFR 60.758(e)

The provisions of 40 CFR 60, Subpart A – General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 60, Subpart WWW.

- (f) The landfill gas treatment system (LFGTS) is subject to the requirements of the National Emissions Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills (40 CFR 63, Subpart AAAAA, 326 IAC 20-67) because the requirements of 40 CFR 60, Subpart WWW apply to this facility. The landfill gas treatment system (LFGTS) is subject to the following portions of 40 CFR 63, Subpart AAAAA. Non applicable portions of the NESHAP will not be included in the permit.

40 CFR 63.1935(a)(1)
40 CFR 63.1940(a), (b), (c)
40 CFR 63.1945(a), (c)
40 CFR 63.1950
40 CFR 63.1955(a)(1), (b), (c)
40 CFR 63.1960
40 CFR 63.1965(b), (c)
40 CFR 63.1975
40 CFR 63.1980(a), (b)
40 CFR 63.1985
40 CFR 63.1990

The provisions of 40 CFR 63, Subpart A – General Provisions, which are incorporated as 326 IAC 20-67-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63, Subpart AAAAA.

- (g) The Liberty Landfill, Inc. has contracted to route a portion of the untreated landfill gas to Liquid Solutions, LLC. Liquid Solutions, LLC has chosen to combust this portion of untreated landfill gas in the enclosed flare and evaporator unit (FL4 and EVAP1), pursuant to 40 CFR 60.752(b)(2)(iii)(C).

The requirements of 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAAA that apply to the enclosed flare and evaporator unit (FL4 and EVAP1) are included in the permits for Liquid Solutions: Significant Source Modification 181-25252-00047 and Title V Operating Permit 181-25104-00047.

State Rule Applicability Determination

The following state rules are applicable to the source due to the modification:

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source is not in 1 of the 28 source categories under 326 IAC 2-2-1(gg), therefore, fugitive emissions are not counted towards applicability of PSD. This source (Liquid Solutions) is collocated with Liberty Landfill. Therefore, the PTE of the collocated source is considered for PSD and Emission Offset.

This source was constructed in 1982. In 1993, the maximum design capacity of the landfill was increased to 10,140,000 megagrams. During the period of 1982 to 1996, the source was a minor source under PSD.

In 1996, a landfill gas collection system and a 1,500 scfm open flare were added. The potential to emit of carbon monoxide from the 1,500 scfm open flare was 148 tons per year. The potential to emit for PM, PM₁₀, SO₂, NO_x and VOC from the 1,500 scfm open flare were all less than eight (8) tons per year. Subsequent to the addition of the 1,500 scfm open flare, the source remained a minor source under PSD.

In 1998, a 2,500 scfm enclosed flare and a leachate evaporation system were added. If it were to be operated at maximum capacity, the potential to emit of carbon monoxide from the 2,500 scfm enclosed flare would be 110 tons per year and the potential to emit for PM, PM₁₀, SO₂, NO_x and VOC would be all less than 21 tons per year. Subsequent to the addition of the 2,500 scfm open flare, the source remained a minor source under PSD. This is because the estimated actual emissions of CO from the 1,500 scfm open flare and the 2,500 scfm enclosed flare are 168 tons of CO per year and this is assuming that all landfill gas generated is burned (100% capture efficiency) in the flares. Therefore, the actual emissions of CO from the flares have not exceeded 250 tons per year.

In 2003, the source modified the leachate evaporation system and removed the existing 1,500 scfm open flare. This modification did not result in an increase in emissions, as the leachate evaporation system utilized the heat from the 2,500 scfm enclosed flare. The source remained a minor source under PSD after this modification.

In 2004, the source was permitted to add four (4) 8.9 MMBtu/hr landfill gas engine/generators, and a 1,362 scfm open flare. This modification did not trigger PSD review because the increase in PTE for PM, PM₁₀, CO, SO₂, NO_x and VOC due to this modification was less than 250 tons per year. Prior to the operation of the new equipment, the source submitted manufacturer's guaranteed emission factors for the new and existing equipment (FL1, FL2, E-Vap, EG1 – EG4) and indicated its intention to leave the existing emission control equipment (FL1 and E-Vap) in operation at the source. Calculations for source-wide PTE for the entire source subsequent to this modification show that the PTE for PM, PM₁₀, SO₂, NO_x, CO and VOC for the entire source are less than 250 tons per year. Subsequent to this modification, the source remained a minor source under PSD, as the potential to emit of all criteria pollutants from the source are less than 250 tons per year.

In 2005, during the Title V renewal process, the source removed the existing 2,500 scfm enclosed flare (FL1) and replaced it with a 1,000 scfm enclosed flare (FL4). This modification did not trigger PSD review because the PTE for PM, PM₁₀, SO₂, NO_x, CO and VOC decreased as a result of this modification. The source remained a minor source under PSD.

In 2006, Liberty Landfill and Liquid Solutions submitted an application to IDEM to modify the existing source. The applicability of PSD to this modification is discussed under the *Permit Level Determination - Part 70 and Permit Level Determination - PSD* section of this Technical Support Document.

Compliance Determination and Monitoring Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with all applicable state and federal rules on a continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, Compliance Determination Requirements are included in the permit. The Compliance Determination Requirements in Section D of the permit are those conditions that are found directly within state and federal rules and the violation of which serves as grounds for enforcement action.

If the Compliance Determination Requirements are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also in Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

As a result of this permit modification, the compliance monitoring conditions for the 1,000 scfm enclosed flare (FL4) have been removed from the Liberty Landfill Title V Operating Permit, as operational control of this emission unit has been passed to Liquid Solutions, LLC.

The landfill, landfill gas treatment system (LFGTS), flare (FL2) and engines (EG1 - EG4) have applicable Compliance Determination Requirements and Compliance Monitoring Requirements. Those requirements are specified in paragraphs (a), (b), (c), (e), and (f) of the *Federal Rule Applicability* section of this Technical Support Document.

The following Compliance Determination Requirements are applicable to the flare and engines

1. The flare (FL2) and engines (EG1 - EG4) do not have a testing requirement for sulfur dioxide (SO₂). Emissions of sulfur dioxide will be calculated based on the amount and concentration of the volatile sulfur compounds in the landfill gas burned. SO₂ emissions will be calculated using mass balance calculations assuming all volatile sulfur that passes through the flare and engines is converted to SO₂.

SO₂ Emissions from landfill gas shall be calculated as follows:

$$\text{SO}_2 \text{ Emissions (tons)} = \text{Flow Rate (scfm)} \times 49.6 \text{ ppmv S} / 1000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of S (32.06 lbs/lbs mole)} \times 2 \text{ (ratio of molecular weight of SO}_2 \text{ to S)} \times 60 \text{ min/hr} \times \text{Number of hours of operation} \times 1 \text{ ton/2000 lbs}$$

2. The flare (FL2) and engines (EG1 - EG4) do not have a testing requirement for volatile organic compounds (VOC). Emissions of VOC will be calculated based on the amount and concentration of the volatile organic compounds in the landfill gas burned and assuming that the destruction efficiency of VOC in the flare is 99.2% and the destruction efficiency of VOC in the engines is 97.2%.

VOC Emissions from landfill gas shall be calculated as follows:

$$\text{VOC Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 235 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of Hexane (86.2 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton/2000 lbs} \times (1 - \% \text{ Control Efficiency})$$

3. The flare (FL2) and engines (EG1 - EG4) do not have a testing requirement for hydrogen chloride (HCl). Emissions of hydrogen chloride will be calculated based on the amount and concentration of the volatile chlorine compounds in the landfill gas burned. HCl emissions will be calculated using mass balance methods assuming all volatile chlorine that passes through the flare and engines is converted to hydrogen chloride.

HCl Emissions from landfill gas shall be calculated as follows:

$$\text{HCl Emissions (tons)} = \text{LFG Flow Rate (scfm)} \times 42 \text{ ppmv chloride ion (Cl}^-) / 1000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times 35.45 \text{ (mole weight of chloride ion (Cl}^-)) \text{ (lbs/lbs mole)} \times (36.46/35.45) \text{ ratio of molecular weight of HCl to Cl}^- \times 60 \text{ min/hr} \times \text{Number of hours of operation} \times 1 \text{ ton}/2000 \text{ lbs}$$

4. The flare (FL2) and engines (EG1 - EG4) do not have a testing requirement for HAPs. Emissions of HAPs will be calculated based on the amount and concentration of the HAPs in the landfill gas burned. Toluene emissions will be calculated assuming the concentration of toluene in the landfill gas is 39.3 ppmv, the destruction efficiency in the flare is 99.7% and the destruction efficiency in the engines is 86.1%. Other single HAP emissions will be calculated assuming the concentration of single HAP in the landfill gas is 14.3 ppmv, the destruction efficiency of any single halogenated HAP in the flare is 98.0%, the destruction efficiency of any single non-halogenated HAP in the flare is 99.7%, the destruction efficiency of any single halogenated HAP in the engines is 93.0%, and the destruction efficiency of any single non-halogenated HAP in the engines is 86.1%. Total HAP emissions will be calculated assuming the concentration of total HAPs in the landfill gas is 106 ppmv. In the following calculations example, the concentration and lbs/lb-mole for methylene chloride are used in the example.

Toluene Emissions from landfill gas shall be calculated as follows:

$$\text{Toluene Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 39.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (92.1 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency } \%)$$

Emissions of any other single HAP from landfill gas shall be calculated as follows:

$$\text{Single HAP Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 14.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (84.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency } \%)$$

Total HAP Emissions from landfill gas shall be calculated as follows:

$$\text{Total HAP Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 106 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of Total HAP (89.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency } \%)$$

5. Fugitive emissions of HAPs are included in the HAP minor limits for this collocated source. Emissions of fugitive HAPs from the landfill shall be calculated using the recorded total flow rate of landfill gas from the landfill gas collection system. Fugitive HAP emissions will be calculated assuming that the landfill gas collection system collects 80% of the landfill gas produced by the landfill. Since 80% of the total landfill gas produced is collected, and 20% of the total landfill gas escapes (is fugitive), it is assumed that fugitive emissions represent 0.25 of the recorded total flow rate of landfill gas collected.

Fugitive toluene emissions from the landfill shall be calculated as follows:

$$\text{Fugitive Toluene Emissions (tons/yr)} = \text{Total LFG Flow Rate (scfm)} \times 39.3 \text{ ppmv}$$

$$/1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of toluene (92.1 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times 0.25$$

Fugitive emissions of any other single HAP from the landfill shall be calculated as follows:

$$\text{Fugitive Single HAP Emissions (tons/yr)} = \text{Total LFG Flow Rate (scfm)} \times 14.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (84.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times 0.25$$

Fugitive total HAP emissions from the landfill shall be calculated as follows:

$$\text{Fugitive Total HAP Emissions (tons/yr)} = \text{Total LFG Flow Rate (scfm)} \times 106 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of Total HAP (89.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times 0.25$$

Testing Requirements

There are no new testing requirements as a result of this permit modification. The required destruction efficiencies specified in the permit limits for the flare and engines are taken from AP 42. The concentrations of toluene, a single HAP and total HAPs in landfill gas is taken from AP 42.

Proposed Changes

The changes listed below have been made to Part 70 Operating Permit No. T181-18254-00035. Deleted language appears as ~~strikethroughs~~ and new language appears in **bold**:

1. The following changes have been made to Title V Operating Permit T181-18254-00035 as a result of the changes requested by Liberty Landfill, Inc. and Liquid Solutions, LLC. Descriptions in Section A have been revised. HAP limits have been added in Section D.1. Section D.2 has been removed because the engines have no applicable requirements. Also, IDEM has changed the format of the requirements for 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA. This involves moving these requirements from Section D.1 and placing updated permit language into three new E Sections. The verbatim language for the NSPS and NESHAP requirements has been incorporated into three new attachments.

A.2 Part 70 Source Definition [326 IAC 2-7-1(22)]

~~This landfill site consists of a source with an on-site contractor.~~ **This source consists of a municipal solid waste landfill with a collocated industrial wastewater processing facility:**

- (a) Liberty Landfill, Inc. **(Source ID # 181-00035)**, ~~the primary operation, owns and operates a municipal solid waste landfill, is~~ located at 8635 East State Road 16, Monticello, Indiana 47960 (SIC: 4953); and
- (b) Liquid Solutions, LLC, ~~an on-site contractor, purchases and utilizes the landfill gas generated from Liberty Landfill, Inc. in the enclosed flare/leachate evaporator system.~~ **(Source ID # 181-00047)**, ~~the supporting operation, is located at 8635 East State Road 16, Monticello, Indiana 47960.~~

IDEM has determined that Liberty Landfill, Inc. and Liquid Solutions, LLC ~~are considered one source due to contractual control.~~ Therefore, the term "source" in the Part 70 documents refers to both Liberty Landfill, Inc. and Liquid Solutions, LLC. **are located on contiguous properties, have the same two-digit SIC code (Major Group 49: Electric, Gas, And Sanitary Services), and Liquid Solutions, LLC is dependent wholly upon the output (landfill gas and waste heat) of the Liberty Landfill, Inc. for its operation. Therefore, Liberty Landfill, Inc. and Liquid Solutions, LLC will be considered as one source, as defined by 326 IAC 2-7-1(22),**

based on this business relationship.

A.3 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) solid waste disposal facility (**landfill**), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). **This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.**
- (b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. **This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.**
- (c) ~~One (1) enclosed ground flare, identified as FL4, installed in 2005, with a combustion capacity of 1,000 cubic feet per minute of landfill gas (LFG) per hour. This flare does not have a bypass.~~ **One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.**
- (d) ~~One (1) Leachate Evaporation System identified as E-Vap, installed in 1998 and modified in 2005, with a maximum evaporation rate of 12,000 gallons per day, controlled by an integral enclosed flare FL4. The evaporator has a maximum heat input rate of 6.6 MMBtu/hr, using landfill gas as fuel. This system is used to process the leachate generated from this landfill and dilute industrial wastewater received from other plants.~~ **One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.**
- (e) Four (4) 1,148 horsepower (8.9 MMBtu/hr) engines, identified as EG1 through EG4, constructed in 2005, using treated landfill gas as a fuel, each with a landfill gas input rate of 307 scfm of landfill gas, and exhausting through stacks ES1 through ES4, respectively. Each engine is equipped with a crankcase for engine oil, which consumes a maximum of 20 gallons of engine oil per month and exhausts through a crankcase breather vent. (The crankcase breather vent is an insignificant activity.)
- (f) ~~One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.~~

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]:

- (a) One (1) solid waste disposal facility (**landfill**), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). **This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.**
- (b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. **This is an affected facility under 40**

CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.

- (c) ~~One (1) enclosed ground flare, identified as FL4, installed in 2005, with a combustion capacity of 1,000 cubic feet per minute of landfill gas (LFG) per hour. This flare does not have a bypass.~~ **One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.**
- (d) ~~One (1) Leachate Evaporation System identified as E-Vap, installed in 1998 and modified in 2005, with a maximum evaporation rate of 12,000 gallons per day, controlled by an integral enclosed flare FL4. The evaporator has a maximum heat input rate of 6.6 MMBtu/hr, using landfill gas as fuel. This system is used to process the leachate generated from this landfill and dilute industrial wastewater received from other plants.~~ **One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.**
- (f) ~~One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.~~

(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)

D.1.1 ~~General Provisions Relating to NSPS and NESHAP [326 IAC 12-1-1] [40 CFR Part 60, Subpart A]~~

- (a) ~~The provisions of 40 CFR Part 60, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 12-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 60, Subpart WWW, or as specified by approved variances contained within the Collection and Control Design Plan.~~
- (b) ~~The provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference in 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 63, Subpart AAAA.~~
- (c) ~~The provisions of 40 CFR Part 61, Subpart A – General Provisions, which are incorporated as 326 IAC 14-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR Part 61, Subpart M.~~
- (d) ~~Pursuant to a letter from EPA Region V (dated March 4, 2004), the proposed gas recovery plant at Liberty Landfill, Inc. is considered a treatment system. The engines, which combust the treated landfill gas, are not subject to the testing requirements in 40 CFR 60.754, the monitoring requirements in 40 CFR 60.756, the record keeping requirements in 40 CFR 60.758, the testing and monitoring requirements in 40 CFR 63.1960, and the recordkeeping and reporting requirements in 40 CFR 63.1980. The existing four (4) landfill gas fueled engine/generators (EG1 through EG4) have no applicable requirements under the New Source Performance Standard for Municipal Solid Waste Landfills, 40 CFR Part 60, Subpart WWW, and the National Emission Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills, 40 CFR 63, Subpart AAAA.~~
- (e) ~~The existing four (4) landfill gas fueled engine/generators (EG1 through EG4) are not subject to the requirements of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ.~~

~~D.1.2 Operational Standards for Collection and Control Systems [40 CFR 60.753] [326 IAC 8-8.1] [326 IAC 12]~~

~~In order to comply with 40 CFR 60.752 (b)(2)(ii), the Permittee shall:~~

- ~~(a) Operate the collection system such that gas is collected from each area, cell, or group of cells in the municipal solid waste landfill in which solid waste has been in place for five years if active or 2 years or more if closed or at final grade.~~
- ~~(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:
 - ~~(1) Fire or increased well temperature. The Permittee 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 40 CFR 60.757(f)(1).~~
 - ~~(2) Use of a geomembrane or synthetic cover. The Permittee shall not exceed a maximum positive pressure limit of 5.0 inches water column.~~
 - ~~(3) 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 Office of Air Quality (OAQ).~~~~
- ~~(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than the following and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent.
 - ~~(1) Less than 138°F (59°C) for well #50;~~
 - ~~(2) Less than 135°F (57°C) for well #51; and~~
 - ~~(3) Less than 140°F (60°C) for well #48; and~~
 - ~~(4) Less than 131°F (55°C) for all other wells.~~~~

~~The Permittee may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. The Permittee has shown supporting data that the above elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.~~

- ~~(1) The nitrogen level shall be determined using Method 3C, unless an alternative method is established as allowed by 40 CFR 60.752(b)(2)(i).~~
- ~~(2) Unless an alternative test method is established as allowed by 40 CFR 60.752 (b)(2)(i), the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that; the span shall be set so that the regulatory limit is between 20 and 50 percent of the span; a data recorder is not required; only two calibration gases are required, a zero and span, and ambient air may be used as the span; a calibration error check is not required; the allowable sample bias, zero drift, and calibration drift are ±10 percent.~~
- ~~(d) 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 determine if this level is exceeded, the Permittee shall conduct surface testing around the perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals and where visual observations indicate elevated concentrations of landfill gas, such as~~

~~distressed vegetation and cracks or seeps in the cover. The Permittee may establish an alternative traversing pattern that ensures equivalent coverage. A surface monitoring design plan shall be developed that includes a topographical map with the monitoring route and the rationale for any site-specific deviations from the 30 meter intervals. Areas with steep slopes or other dangerous areas may be excluded from the surface testing.~~

- ~~(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with 40 CFR 60.752(b)(2)(iii). 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 one hour.~~
- ~~(f) Operate the control system at all times when the collected gas is routed to the system.~~
- ~~(g) If monitoring demonstrates that the operational requirements in 40 CFR 60.753(b), (c), or (d) are not met, corrective action shall be taken as specified in 40 CFR 60.755(a)(3) through (5) or 40 CFR 60.755(e). If corrective actions are taken as specified in 40 CFR 60.755, the monitored exceedance is not a violation of the operational requirements in 40 CFR 60.753.~~

~~D.1.3 Monitoring [40 CFR 60.756] [326 IAC 8-8.1] [326 IAC 12]
Except as provided in 40 CFR 60.752(b)(2)(i)(B);~~

- ~~(a) The Permittee uses an active gas collection system to comply with 40 CFR 60.752(b)(2)(ii)(A), and therefore shall install a sampling port and a thermometer, other temperature measuring device or an access port for temperature measurements at each wellhead and:
 - ~~(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in 40 CFR 60.755(a)(3);~~
 - ~~(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5); and~~
 - ~~(3) Monitor temperature of the landfill gas on a monthly basis as provided in 40 CFR 60.755(a)(5).~~~~
- ~~(b) The Permittee uses an enclosed combustor to comply with 40 CFR 60.752(b)(2)(iii), and therefore shall calibrate, maintain, and operate according to the manufacturer's specifications, the following equipment:
 - ~~(1) A temperature monitoring device equipped with a continuous recorder and having a minimum accuracy of ± 1 percent of the temperature being measured expressed in degrees Celsius of ± 0.5 EC, whichever is greater. A temperature monitoring device is not required for boilers or process heaters with design heat input capacity greater than 44 megawatts.~~
 - ~~(2) A device that records flow to the control device.~~~~
- ~~(c) The Permittee uses an open flare to comply 40 CFR 60.752(b)(2)(iii), and therefore shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:
 - ~~(1) 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~~~~

~~(2) — A device that records flow to the flare. The Permittee shall install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every fifteen minutes.~~

~~(d) — To demonstrate compliance with 40 CFR 60.755(c), the Permittee shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in 40 CFR 60.755(d). Any closed landfill that has no monitored exceedances of the operational 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.~~

~~D.1.4 — Municipal Solid Waste Landfill NESHAP [40 CFR 63, Subpart AAAAA]~~

~~Pursuant to 40 CFR 63.1955, the Permittee shall:~~

~~(a) — Comply with the requirements of 40 CFR 60, Subpart WWW.~~

~~(b) — The Permittee shall comply with the general and continuing compliance requirements for the collection and control system as specified in 40 CFR 63.1960 through 40 CFR 63.1985.~~

~~(c) — For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, the Permittee must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR 60, Subpart WWW, these alternatives can be used to comply with 40 CFR 63, Subpart AAAAA, except that all affected sources must comply with the Startup, Shutdown, and Malfunction (SSM) requirements in Subpart A of 40 CFR 63 as specified in Table 1 of 40 CFR 63, Subpart AAAAA and all affected sources must submit compliance reports every six (6) months as specified in 40 CFR 63.1980(a) and (b), including information on all deviations that occurred during the six (6) month reporting period. Deviations (as defined in 40 CFR 63.1965) for continuous emission monitors or numerical continuous parameter monitors must be determined using a three (3) hour monitoring block average (as defined in 40 CFR 63.1975).~~

~~D.1.5 — NESHAP for Active Asbestos Waste Disposal Sites [40 CFR 61.154, Subpart M] [326 IAC 14]~~

~~Pursuant to the National Emissions Standards for Hazardous Air Pollutants 326 IAC 14 2-1, (40 CFR 61.154, Subpart M), any active waste disposal site that receives asbestos-containing waste material must either:~~

~~(a) — Allow no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or comply with 40 CFR 61.154 (b) or 40 CFR 61.154 (c).~~

~~(b) — At least once every 24-hour period, asbestos-containing waste material that has been deposited during the previous 24-hour period must:~~

~~(1) — Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos containing material, or~~

~~(2) — Be covered with a resinous or petroleum based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. Any used, spent, or other waste oil is not considered a dust~~

~~suppression agent.~~

- ~~(c) Use an alternate emissions control method that has received prior written approval by the Administrator according to the procedures described in 40 CFR 61.149(c)(2).~~
- ~~(d) Also, unless a natural barrier deters access by the general public, warning signs and fencing must be installed or the requirements of paragraph (b)(1) above must be met. The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public. The warning signs must:~~
- ~~(1) Be posted in such a manner and location that a person can easily read the legend; and~~
 - ~~(2) Conform to the requirements of 51 cm x 36 cm upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and~~
 - ~~(3) Display the information contained in the legend provided in 40 CFR 61.154(b)(1)(iii).~~

D.1.1 HAP Minor Limit

- (a) The total emissions of toluene from the landfill (fugitive), flare (FL2), and engines (EG1 – EG4) shall be less than 4.48 tons per twelve consecutive month period, with compliance determined at the end of each month. Toluene emissions shall be limited as follows:**
- (1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.**
 - (2) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.**
 - (3) The concentration of toluene in the landfill gas shall be less than 39.3 ppmv.**
 - (4) The destruction efficiency of toluene in the flare shall be equal to or greater than 99.7% and the destruction efficiency of toluene in the engines shall be equal to or greater than 86.1%.**
- (b) The total emissions of hydrogen chloride from the flare (FL2) and engines (EG1 – EG4) shall be less than 3.80 tons per twelve consecutive month period, with compliance determined at the end of each month. Hydrogen Chloride emissions shall be limited as follows:**
- (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.**
 - (2) The concentration of chlorine-containing compounds in the landfill gas shall be less than 42 ppmv as chloride ion (Cl).**
- (c) The total emissions of any single HAP other than toluene and hydrogen chloride from the landfill (fugitive), flare (FL2), and engines (EG1 – EG4) shall be less than 2.0 tons per twelve consecutive month period, with compliance determined at the end of each month. Single HAP emissions shall be limited as follows:**

- (1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.
 - (2) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (3) The concentration of any single HAP other than toluene and hydrogen chloride in the landfill gas shall be less than 14.3 ppmv.
 - (4) The destruction efficiency of any single halogenated HAP in the flare shall be 98.0%, the destruction efficiency of any single non-halogenated HAP in the flare shall be 99.7%, the destruction efficiency of any single halogenated HAP in the engines shall be 93.0%, and the destruction efficiency of any single non-halogenated HAP in the engines shall be 86.1%.
- (d) The total emissions of any combination of HAPs from the landfill (fugitive), flare (FL2), and engines (EG1 – EG4) shall be less than 15.5 tons per twelve consecutive month period, with compliance determined at the end of each month. Combination HAP emissions shall be limited as follows:
- (1) The total production of landfill gas shall be less than 114.7 million cubic meters per year and the landfill gas collection efficiency shall be equal to or greater than 80%.
 - (2) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (3) The concentration of any combination of HAPs in the landfill gas shall be less than 106 ppmv.
 - (4) The destruction efficiency of any halogenated HAP in the flare shall be 98.0%, the destruction efficiency of any non-halogenated HAP in the flare shall be 99.7%, the destruction efficiency of any halogenated HAP in the engines shall be 93.0%, and the destruction efficiency of any non-halogenated HAP in the engines shall be 86.1%.

Combined with the limited HAP emissions from Liquid Solutions, the source-wide emissions of HAPs from this collocated source will be less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of any combination of HAPs.

D.1.2 PSD Minor Limits

- (a) The VOC emissions from the flare (FL2) and engines (EG1 – EG4) shall be less than 1.91 tons per twelve consecutive month period, with compliance determined at the end of each month. VOC emissions shall be limited as follows:
- (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (2) The destruction efficiency of VOC in the flare shall be 99.2% and the destruction efficiency of VOC in the engines shall be 97.2%.
 - (3) The concentration of VOC in landfill gas shall be less than 235 ppmv.

- (b) The SO₂ emissions from the flare (FL2) and engines (EG1 – EG4) shall be less than 5.38 tons per twelve consecutive month period, with compliance determined at the end of each month. SO₂ emissions shall be limited as follows:
- (1) The input of landfill gas to the flare (FL2) shall be less than 715,867,200 standard cubic feet per year and the total input of landfill gas to the engines shall be less than 645,436,800 standard cubic feet per year.
 - (2) The concentration of sulfur compounds in the landfill gas shall be less than 46.9 ppmv as sulfur.

Combined with the limited VOC and SO₂ emissions from Liquid Solutions, the source-wide emissions of VOCs and SO₂ from this collocated source will each be less than 250 tons per year.

D.1.3 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for these facilities and any control devices.

~~D.1.6 Compliance Provisions [40 CFR 60.755] [326 IAC 8-8-1] [326 IAC 12]~~

~~(a) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the specified methods below shall be used to determine whether the gas collection system is in compliance with 40 CFR 60.752(b)(2)(ii).~~

- ~~(1) For the purpose of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with 60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L₀ kinetic factors should be those published in the most recent Compilation of Air Pollution Emission Factors (AP-42) or other site-specific values demonstrated to be appropriate and approved by the Office of Air Quality (OAQ). If k has been determined as specified in 40 CFR 60.754(a)(4), the value of k determined from the test specified under 40 CFR 60.754(a)(4) 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.~~

~~For sites with unknown year to year solid waste acceptance rate:~~

~~$$Q_m = 2L_0 R (e^{-ke} - e^{-kt})$$~~

~~where,~~

- ~~Q_m = maximum expected gas generation flow rate, cubic meters per year
 L₀ = methane generation potential, cubic meters per megagram solid waste
 R = average annual acceptance rate, megagrams per year
 k = methane generation rate constant, year⁻¹
 t = age of the landfill at equipment installation plus the time the owner or operator intends to use the gas mover equipment or active life of the landfill, whichever is less. If the equipment is installed after closure, t is the age of the landfill at installation, years.
 e = time since closure, years (for an active landfill e = 0 and e^{-ke} = 1)~~

~~For sites with known year to year solid waste acceptance rate:~~

~~$$Q_m = \sum_{i=1}^n 2 k L_0 M_i (e^{-kt_i})$$~~

~~where,~~

Q_M = maximum expected gas generation flow rate, cubic meters per year
 k = methane generation rate constant, year⁻¹
 L_0 = 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

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 40 CFR 60.755(a)(1)(i) and (ii). 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 40 CFR 60.755(a)(1)(i) or (ii) 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) For the purposes of determining sufficient density of gas collector for compliance with 40 CFR 60.752 (b)(2)(ii)(A)(2), the Permittee shall design a system of vertical wells, horizontal collectors, or other collection devices, satisfactory to the Office of Air Quality (OAQ), capable of controlling and extracting gas from all portions of the landfill sufficient to meet all operational and performance standards.
 - (3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with 40 CFR 60.752(b)(2)(ii)(A)(3), the Permittee shall measure gauge pressure in the gas collection header at each individual well, monthly. If a positive pressure exists, action shall be initiated to correct the exceedance within five (5) calendar days, except for the three conditions allowed under 40 CFR 60.753(b). If negative pressure cannot be achieved without excess air infiltration within fifteen (15) calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
 - (4) The Permittee is not required to expand the system as required in 40 CFR 60.755(a)(3) during the first 180 days after gas collection system start-up.
 - (5) For the purpose of identifying whether excess air infiltration into the landfill is occurring, the Permittee shall monitor each well monthly for temperature and nitrogen or oxygen as provided in 40 CFR 60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within five (5) calendar days. If correction of the exceedance cannot be achieved within fifteen (15) calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.
 - (6) If the Permittee seeks to demonstrate compliance with 40 CFR 60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in 40 CFR 60.759, then the Permittee shall provide information satisfactory to the Office of Air Quality (OAQ) as specified in 40 CFR 60.752 (b)(2)(i)(C) demonstrating that off-site migration is being controlled.
- (b) For purposes of compliance with 40 CFR 60.753(a), the Permittee shall place each well or design component of a controlled landfill as specified in the approved design plan as

~~provided in 40 CFR 60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of five (5) years or more if active or two (2) years or more if closed or at final grade.~~

- (c) ~~The following procedures shall be used for compliance with the surface methane operational standard as provided in 40 CFR 60.753 (d):~~
- (1) ~~After installation of the collection system, the Permittee shall monitor surface concentrations of methane along the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals (or a site specific established spacing) 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 40 CFR 60.755(d).~~
 - (2) ~~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 perimeter wells.~~
 - (3) ~~Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of Appendix A of 40 CFR60, except that the probe inlet shall be placed within five (5) to ten(10) centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.~~
 - (4) ~~Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in 40 CFR 60.755(c)(4)(i) through (v) should be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of 40 CFR 60.753(d).~~

~~The location of each monitored exceedance shall be marked and the location recorded.~~

~~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 with ten (10) calendar days of detecting the exceedance.~~

~~If the re-monitoring of the location shows a second exceedance, additional corrective action shall be taken and the location shall be monitored again within ten (10) days of the second exceedance. If re-monitoring shows a third exceedance for the same location, the action specified in paragraph 40 CFR 60.755(c)(4)(v) shall be taken, and no further monitoring of that location is required until the action specified in 40 CFR 60.755(c)(4)(v) has been taken.~~

~~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 40 CFR 60.755(c)(4)(ii) or (iii) shall be re-monitored one (1) month from the initial exceedance. If the one (1) month re-monitoring shows a concentration less than 500 parts per million above background, no further monitoring of that location is required until the next quarterly monitoring period. If the one (1) month re-monitoring shows an exceedance, the actions specified in 40 CFR 60.755(c)(4)(iii) or (v) shall be taken.~~

~~For any location where monitored methane concentration equals or exceeds 500 parts per million above background three times within a quarterly period, a new well or other collection device shall be installed within 120 calendar of the initial~~

~~exceedance. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Office of Air Quality (OAQ) for approval.~~

- (5) ~~The Permittee shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.~~
- (d) ~~The Permittee seeking to comply with the provisions of 40 CFR 60.755(c) shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:~~
- (1) ~~The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of Appendix A of 40 CFR 60, except that "methane" shall replace all references to volatile organic compound (VOC).~~
- (2) ~~The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.~~
- (3) ~~To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of 40 CFR 60, the instrument evaluation procedures of section 4.4 of Method 21 of Appendix A of 40 CFR 60 shall be used.~~
- (4) ~~The calibration procedures provided in section 4.2 of Method 21 of Appendix A of 40 CFR 60 shall be followed immediately before commencing a surface monitoring survey.~~
- (e) ~~The provisions of 40 CFR 60.755 shall 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 five (5) days for collection systems and shall not exceed one (1) hour for treatment or control devices.~~

~~D.1.7 Testing Requirements [326 IAC 2-7-6(1)(6)] [40 CFR 60.754(b)] [326 IAC 8-8.1] [326 IAC 12]~~

- (a) ~~After installation of a collection and control system in compliance with 40 CFR 60.755, the Permittee shall calculate the non methane organic compound (NMOC) emission rate for purposes of determining when the system can be removed using the following equation:~~

$$M_{\text{NMOC}} = 1.89 \times 10^{-3} Q_{\text{LFG}} C_{\text{NMOC}}$$

~~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~~

- (1) ~~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 60.~~
- (2) ~~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 60. If using Method 18 of Appendix A of 40 CFR 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 Permittee shall divide the NMOC concentration from Method 25C of Appendix A of 40 CFR 60 by six to convert from $C_{\text{NMOC-as carbon}}$ to $C_{\text{NMOC-as hexane}}$.~~

~~(3) — The Permittee may use another method to determine landfill gas flow rate and NMOC concentration if the method has been approved by the Office of Air Quality (OAQ).~~

~~(b) — Pursuant to 40 CFR 60.754(d):~~

~~For the performance testing required in 40 CFR 60.752(b)(2)(iii)(B), Method 25 or Method 18 of Appendix A of 40 CFR 60 shall be used to determine compliance with the 98 weight percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Office of Air Quality (OAQ) as provided by 40 CFR 60.752(b)(2)(i)(B). If using Method 18 of appendix A, 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:~~

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

~~where,~~

~~NMOC_{in} = mass of NMOC entering the control device~~

~~NMOC_{out} = mass of NMOC exiting control device~~

~~D.1.8 — Calculation of Non-Methane Organic Compound (NMOC) Rate [40 CFR 60.754] [326 IAC 8-8.1] [326 IAC 12]~~

~~Pursuant to 40 CFR 60.754, the Permittee shall, when calculating emissions for PSD purposes, 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. If a collection system, which complies with the provisions of 40 CFR 60.752(b)(2) is already installed, the Permittee shall estimate the NMOC emission rate using the procedures provided in 40 CFR 60.754(b).~~

~~D.1.9 — Compliance Determination [40 CFR 63.1960]~~

~~Pursuant to 40 CFR 63.1960, compliance with 40 CFR 63, Subpart AAAAA is determined by the following:~~

~~(a) — The same way it is determined for 40 CFR 60, Subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence.~~

~~(b) — Continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of Subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation (as defined in 40 CFR 63.1965) occurs, the Permittee has failed to meet the control device operating conditions described in 40 CFR 60, Subpart WWW and has deviated from the requirements of 40 CFR 63, Subpart AAAAA.~~

~~(c) — The Permittee must develop and implement a written Startup, Shutdown, and Malfunction (SSM) plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write, implement, or maintain a copy of the SSM plan is a deviation from the requirements of 40 CFR 63, Subpart AAAAA.~~

D.1.4 HAP Calculations

Compliance with the HAP limits in Condition D.1.1 shall be determined as follows:

- (a) Emissions of hydrogen chloride from the flare (FL2) and engines (EG1 - EG4) will be calculated based on the amount and concentration of the volatile chlorine compounds in the landfill gas burned. HCl emissions will be calculated using mass balance methods assuming all volatile chlorine that passes through the flare and engines is converted to hydrogen chloride.

HCl Emissions from landfill gas shall be calculated as follows:

$$\text{HCl Emissions (tons)} = \text{LFG Flow Rate (scfm)} \times 42 \text{ ppmv chloride ion (Cl}^-) / 1000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times 35.45 \text{ (mole weight of chloride ion (Cl}^-)) \text{ (lbs/lbs mole)} \times (36.46/35.45) \text{ ratio of molecular weight of HCl to Cl}^- \times 60 \text{ min/hr} \times \text{Number of hours of operation} \times 1 \text{ ton}/2000 \text{ lbs}$$

- (b) Emissions of other single HAPs and total HAPs from combustion devices (flare FL2 and engines EG1 - EG4) shall be calculated using the recorded total flow rate to these emission units.

- (1) Toluene Emissions from landfill gas shall be calculated as follows:

$$\text{Toluene Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 39.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (92.1 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency \%})$$

- (2) Emissions of any other single HAP from landfill gas shall be calculated as follows:

$$\text{Single HAP Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 14.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of single HAP (84.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency \%})$$

- (3) Total HAP Emissions from landfill gas shall be calculated as follows:

$$\text{Total HAP Emissions (tons/yr)} = \text{Flow Rate (scfm)} \times 106 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of Total HAP (89.9 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times (1 - \text{Control Efficiency \%})$$

- (c) Emissions of fugitive HAPs from the landfill shall be calculated using the recorded total flow rate of landfill gas from the landfill gas collection system. Fugitive HAP emissions will be calculated assuming that the landfill gas collection system collects 80% of the landfill gas produced by the landfill.

- (1) Fugitive toluene emissions from the landfill shall be calculated as follows:

$$\text{Fugitive Toluene Emissions (tons/yr)} = \text{Total LFG Flow Rate (scfm)} \times 39.3 \text{ ppmv} / 1,000,000 \times 1 \text{ atm} / 0.7302 \text{ atm-cf/lb mole-R} / \text{Temp (60F+ 460)} \times \text{Mole weight of toluene (92.1 lbs/lbs mole)} \times 60 \text{ min/hr} \times 8760 \text{ hr/yr} \times 1 \text{ ton}/2000 \text{ lbs} \times 0.25$$

- (2) Fugitive emissions of any other single HAP from the landfill shall be calculated as follows:

Fugitive Single HAP Emissions (tons/yr) = Total LFG Flow Rate (scfm) x 14.3 ppmv /1,000,000 x 1 atm / 0.7302 atm-cf/lb mole-R / Temp (60F+ 460) x Mole weight of single HAP (84.9 lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs x 0.25

- (3) **Fugitive total HAP emissions from the landfill shall be calculated as follows:**

Fugitive Total HAP Emissions (tons/yr) = Total LFG Flow Rate (scfm) x 106 ppmv /1,000,000 x 1 atm / 0.7302 atm-cf/lb mole-R / Temp (60F+ 460) x Mole weight of Total HAP (89.9 lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs x 0.25

D.1.5 VOC and SO₂ Calculations

Compliance with the PSD minor limits in Condition D.1.2 shall be determined as follows:

- (a) **Emissions of sulfur dioxide will be calculated based on the amount and concentration of the volatile sulfur compounds in the landfill gas burned. SO₂ Emissions from landfill gas shall be calculated as follows:**

SO₂ Emissions (tons) = Flow Rate (scfm) x 49.6 ppmv S /1000,000 x 1 atm / 0.7302 atm-cf/lb mole-R / Temp (60F+ 460) x Mole weight of S (32.06 lbs/lbs mole) x 2 (ratio of molecular weight of SO₂ to S) x 60 min/hr x Number of hours of operation x 1 ton/2000 lbs

- (b) **Emissions of VOC will be calculated based on the amount and concentration of the volatile organic compounds in the landfill gas burned.**

VOC Emissions from landfill gas shall be calculated as follows:

VOC Emissions (tons/yr) = Flow Rate (scfm) x 235 ppmv /1,000,000 x 1 atm / 0.7302 atm-cf/lb mole-R / Temp (60F+ 460) x Mole weight of Hexane (86.2 lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs x (1 - % Control Efficiency)

D.1.10 D.1.6 Record Keeping Requirements ~~[326 IAC 12] [40 CFR 60.758] [326 IAC 8-8.1] [326 IAC 2-7-10.5] [326 IAC 8-1-6]~~

- ~~(a) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee subject to 40 CFR 60.752(b) shall keep for at least five years up to date, readily accessible, continuous on-site records of the design capacity report which triggered 40 CFR 60.752(b), the current amount of solid waste in place, and the year by year waste acceptance rate. Off site records may be maintained if they are retrievable within four (4) hours. Either paper copy or electronic formats are acceptable.~~
- ~~(b) Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee of a controlled landfill shall keep up to date, readily accessible records for the life of the control equipment listed in (1) through (2) below as measured during the initial performance test or compliance determination. Records of subsequent tests or monitoring shall be maintained for a minimum of five (5) years. Records of control device vendor specifications shall be maintained until removal.~~
- ~~(1) The Permittee demonstrating compliance with 40 CFR 60.752(b)(2)(ii) shall record:~~
- ~~(A) The maximum expected gas generation flow rate as calculated in 40 CFR 60.755(a)(1). The Permittee may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Office of Air Quality (OAQ).~~

- ~~(B) — The density of wells, horizontal collectors, surface collectors, or other gas extraction devices determined using the procedures specified in 40 CFR 60.759(a)(1).~~
- ~~(2) — The Permittee demonstrating compliance with 40 CFR 60.752(b)(2)(iii)(A) through use of an open flare shall record:~~
- ~~(A) — The flare type (i.e., steam-assisted, air-assisted, or nonassisted), all visible emission readings, heat content determination, flow rate measurements, and exit velocity determinations made during the performance test as specified in 40 CFR 60.18.~~
 - ~~(B) — Continuous records of the flare pilot flame or flare flame monitoring and records of all periods of operations during which the pilot flame of the flare flame is absent.~~
- ~~(c) — Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee shall keep for five years up to date, readily accessible, continuous on-site records of the equipment operating parameters specified to be monitored in 40 CFR 60.756 as well as up to date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.~~
- ~~(1) — The Permittee subject to 40 CFR 60.758 shall keep up to date, readily accessible continuous records of the indication of flow to the control device specified under 40 CFR 60.756.~~
 - ~~(2) — The Permittee complying with the provisions of 40 CFR 60.758 by use of an open flare, shall keep up to date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under 40 CFR 60.756(c), and up to date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.~~
- ~~(d) — Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee shall keep for the life of the collection system an up to date, readily accessible plot map showing each existing and planned collector in the system and providing a unique identification location label for each collector.~~
- ~~(1) — The Permittee subject to the provisions of 40 CFR 60.758 shall keep up to date, readily accessible records of the installation date and location of all newly installed collectors as specified in 40 CFR 60.755 (b).~~
 - ~~(2) — The Permittee subject to the provisions of 40 CFR 60.758 shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in 40 CFR 60.759 (a)(3)(i) as well as any non-productive areas excluded from collection as provided in 40 CFR 60.759 (a)(3)(ii).~~
- ~~(e) — Except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee shall keep for at least five (5) years up to date, readily accessible records of all collection and control system exceedances of the operational standards in 40 CFR 60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.~~
- (a) In order to document compliance with Conditions D.1.1 and D.1.2, the Permittee shall maintain the following monthly records:**

- (1) **The amount of landfill gas collected from the landfill;**
- (2) **The amount of landfill gas sent to the engines (EG1 - EG4) and flare (FL4) for combustion;**
- (3) **The emissions of Toluene and Hydrogen Chloride from the landfill (fugitive), engines and flare.**
- (4) **The emissions of any other single HAP and a combination of HAPs from the landfill (fugitive), engines and flare.**
- (5) **The emissions of VOC from the engines and flare.**
- (6) **The emissions of SO₂ from the engines and flare.**

Records shall be maintained monthly and shall be complete and sufficient to establish compliance with the limits established in Conditions D.1.1 and D.1.2.

- (f)(b) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

~~D.1.14~~ **D.1.7** Reporting Requirements [40 CFR 60.757] [326 IAC 8-8.1]

~~Pursuant to 40 CFR 60.757, except as provided in 40 CFR 60.752(b)(2)(i)(B), the Permittee shall:~~

- ~~(a) Submit a closure report to the IDEM, OAQ within thirty (30) days of waste acceptance cessation. The IDEM, OAQ 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 IDEM, OAQ, no additional wastes may be placed into the landfill without filing a notification of modification as described under 40 CFR 60.7(a)(4).~~
- ~~(b) Submit an equipment removal report to the IDEM, OAQ thirty (30) days prior to removal or cessation of operation of the control equipment. The equipment removal report shall contain all of the following items: a copy of the closure report submitted in accordance with 40 CFR 60.757(d), a copy of the initial performance test report demonstrating that the fifteen (15) year minimum control period has expired, and dated copies of three (3) successive NMOC emission rate reports demonstrating that the landfill is no longer producing 50 megagrams or greater of NMOC per year. The fifteen year control period begins upon initial operation of the gas collection and control system. The IDEM, OAQ may request such additional information as may be necessary to verify that all of the conditions for removal in 40 CFR 60.752(b)(2)(v) have been met.~~
- ~~(c) Submit annual reports of the following recorded information. For enclosed combustion devices and flares, reportable exceedances are defined under 40 CFR 60.758(c).~~
 - ~~(1) Value and length of time for exceedance of applicable parameters monitored under 40 CFR 60.756(a), (b), (c), and (d).~~
 - ~~(2) Description and duration of all periods when the control device was not operating for a period exceeding one (1) hour and length of time the control device was not operating.~~
 - ~~(3) All periods when the collection system was not operating in excess of five (5) days.~~

- (4) ~~Location of each exceedance of the 500 parts per million methane concentration as provided in 40 CFR 60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.~~
- (5) ~~Date of installation and the location of each well or collection system expansion added pursuant to 40 CFR 60.755(a)(3), (b), and (c)(4).~~

~~Pursuant to 40 CFR 63.1980, the Permittee is required to submit the above report on a semi-annual basis, as specified in Condition D.1.12(a).~~

- (d) ~~The Permittee complying with 40 CFR 40.752(b)(2)(iii) shall include the following information with the initial performance test report required under 40 CFR 60.8:~~
 - (1) ~~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.~~
 - (2) ~~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.~~
 - (3) ~~The documentation of the presence of asbestos or nondegradable material for each area from which collection wells have been excluded based on the presence of asbestos or nondegradable material.~~
 - (4) ~~The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on nonproductivity and the calculations of gas generation flow rate for each excluded area.~~
 - (5) ~~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~~
 - (6) ~~The provisions for the control of off site migration.~~

- (e) ~~A summary of the above information shall be submitted to the address listed in Section G - General Reporting Requirements, of this permit.~~

A quarterly summary of the information to document compliance with Conditions D.1.1 and D.1.2 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported. The report submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

~~SECTION D.2 FACILITY OPERATION CONDITIONS~~

~~Facility Description [326 IAC 2-7-5(15)]:~~

- (e) ~~Four (4) 1,148 horsepower (8.9 MMBtu/hr) engines, identified as EG1 through EG4, constructed in 2005, using treated landfill gas as a fuel, each with a landfill gas input rate of 307 scfm, and exhausting through stacks ES1 through ES4, respectively. Each engine is equipped with a crankcase for engine oil, which consumes a maximum of 20 gallons of engine oil per month and exhausts through a crankcase breather vent. (The crankcase breather vent is an insignificant activity.)~~

~~(The information describing the process contained in this facility description box is descriptive information and does not constitute enforceable conditions.)~~

~~Emission Limitations and Standards [326 IAC 2-7-5(1)]~~

~~There are no applicable state or federal requirements for these emission units.~~

SECTION E.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAAA.**
- (b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAAA.**
- (c) One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAAA.**
- (d) One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.**

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

New Source Performance Standards (NSPS) Requirements [326 IAC 2-7-5(1)]

E.1.1 General Provisions Relating to New Source Performance Standards Under 40 CFR Part 60 [326 IAC 12-1] [40 CFR Part 60, Subpart A]

- (a) The provisions of 40 CFR Part 60, Subpart A - General Provisions, which are incorporated by reference in 326 IAC 12-1-1, apply to the landfill, gas collection system, gas treatment system, and open flare except when otherwise specified in 40 CFR Part 60, Subpart WWW.**
- (b) Pursuant to 40 CFR 60.7, the Permittee shall submit all of the required notifications and reports to:**

**Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251**

E.1.2 New Source Performance Standard for Municipal Solid Waste Landfills Requirements [40 CFR Part 60, Subpart WWW] [326 IAC 12]

Pursuant to 40 CFR Part 60, Subpart WWW, the Permittee shall comply with the following provisions of 40 CFR Part 60, Subpart WWW (included as Attachment A), which are incorporated by reference as 326 IAC 12 and 326 IAC 8-8.1, for the landfill, gas collection system, gas treatment system, and open flare:

- 40 CFR 60.750
- 40 CFR 60.751
- 40 CFR 60.752(b)(2), (d)
- 40 CFR 60.753
- 40 CFR 60.754(b), (c), (d)
- 40 CFR 60.755
- 40 CFR 60.756(a), (c)(1), (f)
- 40 CFR 60.757(d), (e), (f)(1), (f)(3) - (6)
- 40 CFR 60.758(a), (b)(1), (b)(4), (c)(4), (d), (e), (f)
- 40 CFR 60.759

E.1.3 One Time Deadlines Relating to NSPS (40 CFR 60, Subpart WWW)

- (a) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the date of construction (or reconstruction as defined under §60.15) of an affected facility postmarked no later than 30 days after such date.
- (b) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.

SECTION E.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants Requirements [326 IAC 2-7-5(1)]

E.2.1 General Provisions Relating to National Emissions Standards for Hazardous Air Pollutants under 40 CFR Part 61 [326 IAC 14-1] [40 CFR Part 61, Subpart A]

- (a) The Permittee shall comply with the provisions of 40 CFR Part 61, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 14-1, for the municipal solid waste landfill.
- (b) Pursuant to 40 CFR 61.8, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

E.2.2 National Emissions Standards for Hazardous Air Pollutants for Asbestos [40 CFR Part 61, Subpart M] [326 IAC 14-10]

Pursuant to 40 CFR Part 61, Subpart M, the Permittee shall comply with the following provisions of 40 CFR Part 61, Subpart M (included as Attachment C), incorporated by reference as 326 IAC 14-2-1, for the municipal solid waste landfill:

- 40 CFR 61.140
- 40 CFR 61.141
- 40 CFR 61.154
- 40 CFR 61.157

E.2.3 One Time Deadlines Relating to NESHAP (40 CFR 61, Subpart M)

Pursuant to 40 CFR 61.7, the Permittee shall submit an application to modify an existing affected facility before the modification is planned to commence.

SECTION E.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

- (a) One (1) solid waste disposal facility (landfill), as defined in 40 CFR 60.751, constructed in 1982, modified in 1993, with a maximum design capacity of 11,086,700 cubic meters (11,635,115 megagrams). This is an affected facility under 40 CFR 60, Subpart WWW, 40 CFR 61, Subpart M, and 40 CFR 63, Subpart AAAA.
- (b) One (1) gas collection system (GCS) designed and having a capacity in accordance with the applicable provisions of 40 CFR 60, Subpart WWW. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.
- (c) One (1) landfill gas treatment system, identified as LFGTS, constructed in 2005, consisting of facilities for filtering, dewatering and compressing landfill gas, with treated gas being routed to the engine/generators. This is an affected facility under 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAA.
- (d) One (1) open flare, identified as FL2, constructed in 2005, with a maximum heat input capacity of 37.1 MMBtu per hour and a maximum flow rate of 1,362 scfm of landfill gas, and exhausting through stack FS2. This flare does not have a bypass.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

National Emission Standards for Hazardous Air Pollutants Requirements [326 IAC 2-7-5(1)]

E.3.1 General Provisions Relating to National Emissions Standards for Hazardous Air Pollutants under 40 CFR Part 63 [326 IAC 20-1] [40 CFR Part 63, Subpart A]

- (a) Pursuant to 40 CFR 63.5925, the Permittee shall comply with the provisions of 40 CFR Part 63, Subpart A – General Provisions, which are incorporated by reference as 326 IAC 20-1-1, for the landfill, gas collection system, gas treatment system, and open flare, as specified in Table 1 of 40 CFR Part 63, Subpart AAAA.
- (b) Pursuant to 40 CFR 63.10, the Permittee shall submit all required notifications and reports to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue

**MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251**

E.3.2 National Emissions Standards for Hazardous Air Pollutants for Municipal Solid Waste Landfills: Requirements [40 CFR Part 63, Subpart AAAAA] [326 IAC 20-67]

Pursuant to 40 CFR Part 63, Subpart AAAAA, the Permittee shall comply with the following provisions of 40 CFR Part 63, Subpart AAAAA (included as Attachment B), which are incorporated by reference as 326 IAC 20-67, for the landfill, gas collection system, gas treatment system, and open flare:

- 40 CFR 63.1930
- 40 CFR 63.1935(a)(3)
- 40 CFR 63.1940(a), (c)
- 40 CFR 63.1945(f)
- 40 CFR 63.1950
- 40 CFR 63.1955(a), (b), (c)
- 40 CFR 63.1960
- 40 CFR 63.1965
- 40 CFR 63.1975
- 40 CFR 63.1980(a), (b)
- 40 CFR 63.1985
- 40 CFR 63.1990
- 40 CFR 63, Table 1

E.3.3 One Time Deadlines Relating to NESHAP (40 CFR 63, Subpart AAAAA)

- (a) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the date of construction (or reconstruction as defined under §60.15) of an affected facility postmarked no later than 30 days after such date.
- (b) Pursuant to 40 CFR 60.7, the Permittee shall submit a notification of the actual date of initial startup of an affected facility postmarked within 15 days after such date.
- (c) Pursuant to 40 CFR 63.1645 and 40 CFR 63.1655, the Permittee shall comply with the applicable requirements of 40 CFR 60, Subpart WWW and 40 CFR 63, Subpart AAAAA upon startup.
- (d) Pursuant to 40 CFR 63.10(d)(5), the Permittee shall submit semi-annual Startup, Shutdown and Malfunction reports on January 30 and July 30 of each calendar year.

Attach a signed certification to complete this report.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR QUALITY
 COMPLIANCE DATA SECTION**

Part 70 Quarterly Report

Source Name: Liberty Landfill, Inc.
Source Address: 8635 East State Road 16, Monticello, Indiana 47960
Mailing Address: 124 Twin Bridges Road, Danville, Indiana 46122
Part 70 Permit No.: T181-18254-00035
Facility: Engines (EG1 - EG4), and flare (FL4)
Parameter: Emissions of VOC and Sulfur Dioxide
Limit: VOC: less than 1.01 tons per twelve consecutive month period
 SO₂: less than 5.38 tons per twelve consecutive month period

QUARTER :

YEAR:

Month	HAP	Column 1	Column 2	Column 1 + Column 2
		This Month	Previous 11 Months	12 Month Total
Month 1	VOC			
	SO ₂			
Month 2	VOC			
	SO ₂			
Month 3	VOC			
	SO ₂			

No deviation occurred in this quarter.

Deviation/s occurred in this quarter.
 Deviation has been reported on:

Submitted by:
Title / Position:
Signature:
Date:
Phone:

Attach a signed certification to complete this report.

Attachment A, NSPS Subpart WWW

Liberty Landfill, Inc.
8635 East State Road 16
Monticello, Indiana 47960

Permit No.: 181-23367-00035

40 CFR 60, Subpart WWW—Standards of Performance for Municipal Solid Waste Landfills

§ 60.750 Applicability, designation of affected facility, and delegation of authority.

(a) The provisions of this subpart apply to each municipal solid waste landfill that commenced construction, reconstruction or modification on or after May 30, 1991. Physical or operational changes made to an existing MSW landfill solely to comply with Subpart Cc of this part are not considered construction, reconstruction, or modification for the purposes of this section.

(b) The following authorities shall be retained by the Administrator and not transferred to the State: §60.754(a)(5).

(c) Activities required by or conducted pursuant to a CERCLA, RCRA, or State remedial action are not considered construction, reconstruction, or modification for purposes of this subpart.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998]

§ 60.751 Definitions.

As used in this subpart, all terms not defined herein shall have the meaning given them in the Act or in subpart A of this part.

Active collection system means a gas collection system that uses gas mover equipment.

Active landfill means a landfill in which solid waste is being placed or a landfill that is planned to accept waste in the future.

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 §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.

Closure means that point in time when a landfill becomes a closed landfill.

Commercial solid waste means all types of solid waste generated by stores, offices, restaurants, warehouses, and other nonmanufacturing activities, excluding residential and industrial wastes.

Controlled landfill means any landfill at which collection and control systems are required under this subpart as a result of the nonmethane organic compounds emission rate. The landfill is considered controlled at the time a collection and control system design plan is submitted in compliance with §60.752(b)(2)(i).

Design capacity means the maximum amount of solid waste a landfill can accept, as indicated in terms of volume or mass in the most recent permit issued by the State, local, or Tribal agency responsible for regulating the landfill, plus any in-place waste not accounted for in the most recent permit. If the owner or operator chooses to convert the design capacity from volume to mass or from mass to volume to demonstrate its design capacity is less than 2.5 million megagrams or 2.5 million cubic meters, the calculation must include a site specific density, which must be

recalculated annually.

Disposal facility means all contiguous land and structures, other appurtenances, and improvements on the land used for the disposal of solid waste.

Emission rate cutoff means the threshold annual emission rate to which a landfill compares its estimated emission rate to determine if control under the regulation is required.

Enclosed combustor means an enclosed firebox which maintains a relatively constant limited peak temperature generally using a limited supply of combustion air. An enclosed flare is considered an enclosed combustor.

Flare means an open combustor without enclosure or shroud.

Gas mover equipment means the equipment (i.e., fan, blower, compressor) used to transport landfill gas through the header system.

Household waste means any solid waste (including garbage, trash, and sanitary waste in septic tanks) derived from households (including, but not limited to, single and multiple residences, hotels and motels, bunkhouses, ranger stations, crew quarters, campgrounds, picnic grounds, and day-use recreation areas).

Industrial solid waste means solid waste generated by manufacturing or industrial processes that is not a hazardous waste regulated under Subtitle C of the Resource Conservation and Recovery Act, parts 264 and 265 of this title. Such waste may include, but is not limited to, waste resulting from the following manufacturing processes: electric power generation; fertilizer/agricultural chemicals; food and related products/by-products; inorganic chemicals; iron and steel manufacturing; leather and leather products; nonferrous metals manufacturing/foundries; organic chemicals; plastics and resins manufacturing; pulp and paper industry; rubber and miscellaneous plastic products; stone, glass, clay, and concrete products; textile manufacturing; transportation equipment; and water treatment. This term does not include mining waste or oil and gas waste.

Interior well means any well or similar collection component located inside the perimeter of the landfill waste. A perimeter well located outside the landfilled waste is not an interior well.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under §257.2 of this title.

Lateral expansion means a horizontal expansion of the waste boundaries of an existing MSW landfill. A lateral expansion is not a modification unless it results in an increase in the design capacity of the landfill.

Modification means an increase in the permitted volume design capacity of the landfill by either horizontal or vertical expansion based on its permitted design capacity as of May 30, 1991. Modification does not occur until the owner or operator commences construction on the horizontal or vertical expansion.

Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (§257.2 of this title) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads. An MSW landfill may be publicly or privately owned. An MSW landfill may be a new MSW landfill, an existing MSW landfill, or a lateral expansion.

Municipal solid waste landfill emissions or MSW landfill emissions means gas generated by the decomposition of organic waste deposited in an MSW landfill or derived from the evolution of organic compounds in the waste.

NMOC means nonmethane organic compounds, as measured according to the provisions of §60.754.

Nondegradable waste means any waste that does not decompose through chemical breakdown or microbiological activity. Examples are, but are not limited to, concrete, municipal waste combustor ash, and metals.

Passive collection system means a gas collection system that solely uses positive pressure within the landfill to move the gas rather than using gas mover equipment.

Sludge means any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility, exclusive of the treated effluent from a wastewater treatment plant.

Solid waste means any garbage, sludge from a wastewater treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under 33 U.S.C. 1342, or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (42 U.S.C 2011 et seq.).

Sufficient density means any number, spacing, and combination of collection system components, including vertical wells, horizontal collectors, and surface collectors, necessary to maintain emission and migration control as determined by measures of performance set forth in this part.

Sufficient extraction rate means a rate sufficient to maintain a negative pressure at all wellheads in the collection system without causing air infiltration, including any wellheads connected to the system as a result of expansion or excess surface emissions, for the life of the blower.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32750, June 16, 1998; 64 FR 9262, Feb. 24, 1999]

§ 60.752 Standards for air emissions from municipal solid waste landfills.

(b) 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 paragraph (b)(2) of this section or calculate an NMOC emission rate for the landfill using the procedures specified in §60.754. The NMOC emission rate shall be recalculated annually, except as provided in §60.757(b)(1)(ii) of this subpart. The owner or operator of an MSW landfill subject to this subpart with a design capacity greater than or equal to 2.5 million megagrams and 2.5 million cubic meters is subject to part 70 or 71 permitting requirements.

(2) If the calculated NMOC emission rate is equal to or greater than 50 megagrams per year, the owner or operator shall:

(i) Submit a collection and control system design plan prepared by a professional engineer to the Administrator within 1 year:

(A) The collection and control system as described in the plan shall meet the design requirements of paragraph (b)(2)(ii) of this section.

(B) The collection and control system design plan shall include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions of §§60.753 through 60.758 proposed by the owner or operator.

(C) The collection and control system design plan shall either conform with specifications for active collection systems in §60.759 or include a demonstration to the Administrator's satisfaction of the sufficiency of the alternative provisions to §60.759.

(D) The Administrator shall review the information submitted under paragraphs (b)(2)(i) (A),(B) and (C) of this 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.

(ii) Install a collection and control system that captures the gas generated within the landfill as required by paragraphs (b)(2)(ii)(A) or (B) and (b)(2)(iii) of this section within 30 months after the first annual report in which the emission rate equals or exceeds 50 megagrams per year, unless Tier 2 or Tier 3 sampling demonstrates that the emission rate is less than 50 megagrams per year, as specified in §60.757(c)(1) or (2).

(A) An active collection system shall:

(1) 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;

(2) 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:

(i) 5 years or more if active; or

(ii) 2 years or more if closed or at final grade.

(3) Collect gas at a sufficient extraction rate;

(4) Be designed to minimize off-site migration of subsurface gas.

(B) A passive collection system shall:

(1) Comply with the provisions specified in paragraphs (b)(2)(ii)(A)(1), (2), and (2)(ii)(A)(4) of this section.

(2) 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 §258.40.

(iii) Route all the collected gas to a control system that complies with the requirements in either paragraph (b)(2)(iii) (A), (B) or (C) of this section.

(A) An open flare designed and operated in accordance with §60.18 except as noted in §60.754(e);

(B) A control system designed and operated to reduce NMOC by 98 weight-percent, or, when an enclosed combustion device is used for control, to either reduce NMOC by 98 weight percent or reduce the outlet NMOC concentration to less than 20 parts per million by volume, dry basis as

hexane at 3 percent oxygen. The reduction efficiency or parts per million by volume shall be established by an initial performance test to be completed no later than 180 days after the initial startup of the approved control system using the test methods specified in §60.754(d).

(1) If a boiler or process heater is used as the control device, the landfill gas stream shall be introduced into the flame zone.

(2) The control device shall be operated within the parameter ranges established during the initial or most recent performance test. The operating parameters to be monitored are specified in §60.756;

(C) 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 paragraph (b)(2)(iii) (A) or (B) of this section.

(iv) Operate the collection and control device installed to comply with this subpart in accordance with the provisions of §§60.753, 60.755 and 60.756.

(v) The collection and control system may be capped or removed provided that all the conditions of paragraphs (b)(2)(v) (A), (B), and (C) of this section are met:

(A) The landfill shall be a closed landfill as defined in §60.751 of this subpart. A closure report shall be submitted to the Administrator as provided in §60.757(d);

(B) The collection and control system shall have been in operation a minimum of 15 years; and

(C) Following the procedures specified in §60.754(b) of this subpart, 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.

(d) When a MSW landfill subject to this subpart is closed, the owner or operator is no longer subject to the requirement to maintain an operating permit under part 70 or 71 of this chapter for the landfill if the landfill is not otherwise subject to the requirements of either part 70 or 71 and if either of the following conditions are met:

(1) The landfill was never subject to the requirement for a control system under paragraph (b)(2) of this section; or

(2) The owner or operator meets the conditions for control system removal specified in paragraph (b)(2)(v) of this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 71 FR 55127, Sept. 21, 2006]

§ 60.753 Operational standards for collection and control systems.

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of §60.752(b)(2)(ii) of this subpart shall:

(a) 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:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade;

(b) Operate the collection system with negative pressure at each wellhead except under the following conditions:

(1) 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 §60.757(f)(1);

(2) Use of a geomembrane or synthetic cover. The owner or operator shall develop acceptable pressure limits in the design plan;

(3) 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;

(c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent, with the following exceptions: less than 138 degrees Fahrenheit (59 degrees Centigrade for well # 50, less than 135 degrees Fahrenheit (57 degrees Centigrade for well # 51, and less than 140 degrees Fahrenheit (60 degrees Centigrade for well # 48. 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.

(1) The nitrogen level shall be determined using Method 3C, unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart.

(2) Unless an alternative test method is established as allowed by §60.752(b)(2)(i) of this subpart, the oxygen shall be determined by an oxygen meter using Method 3A or 3C except that:

(i) The span shall be set so that the regulatory limit is between 20 and 50 percent of the span;

(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 ±10 percent.

(d) 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 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.

(e) Operate the system such that all collected gases are vented to a control system designed and operated in compliance with §60.752(b)(2)(iii). 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; and

(f) Operate the control or treatment system at all times when the collected gas is routed to the system.

(g) If monitoring demonstrates that the operational requirements in paragraphs (b), (c), or (d) of this section are not met, corrective action shall be taken as specified in §60.755(a)(3) through (5) or §60.755(c) of this subpart. If corrective actions are taken as specified in §60.755, the monitored exceedance is not a violation of the operational requirements in this section.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 61778, Oct. 17, 2000]

§ 60.754 Test methods and procedures.

(b) After the installation of a collection and control system in compliance with §60.755, the owner or operator shall calculate the NMOC emission rate for purposes of determining when the system can be removed as provided in §60.752(b)(2)(v), using the following equation:

$$M_{\text{NMOC}} = 1.89 \times 10^{-3} Q_{\text{LFG}} C_{\text{NMOC}}$$

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

(1) 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 this part.

(2) 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 this part. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The 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 this part by six to convert from C_{NMOC} as carbon to C_{NMOC} as hexane.

(3) 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.

(c) When calculating emissions for PSD purposes, the owner or operator of each MSW landfill subject to the provisions of this subpart shall estimate the NMOC emission rate for comparison to the PSD major source and significance levels in §§51.166 or 52.21 of this chapter using AP-42 or other approved measurement procedures.

(d) For the performance test required in §60.752(b)(2)(iii)(B), Method 25, 25C, or Method 18 of Appendix A of this part must be used to determine compliance with the 98 weight-percent efficiency or the 20 ppmv outlet concentration level, unless another method to demonstrate compliance has been approved by the Administrator as provided by §60.752(b)(2)(i)(B). Method 3 or 3A shall be used to determine oxygen for correcting the NMOC concentration as hexane to 3 percent. In cases where the outlet concentration is less than 50 ppm NMOC as carbon (8 ppm NMOC as hexane), Method 25A should be used in place of Method 25. If using Method 18 of appendix A of this part, the minimum list of compounds to be tested shall be those published in the most recent Compilation of Air Pollutant Emission Factors (AP-42). The following equation shall be used to calculate efficiency:

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

where,

NMOC_{in} = mass of NMOC entering control device

NMOC_{out} = mass of NMOC exiting control device

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32751, June 16, 1998; 65 FR 18908, Apr. 10, 2000; 65 FR 61778, Oct. 17, 2000; 71 FR 55127, Sept. 21, 2006]

§ 60.755 Compliance provisions.

(a) Except as provided in §60.752(b)(2)(i)(B), the specified methods in paragraphs (a)(1) through (a)(6) of this section shall be used to determine whether the gas collection system is in compliance with §60.752(b)(2)(ii).

(1) For the purposes of calculating the maximum expected gas generation flow rate from the landfill to determine compliance with §60.752(b)(2)(ii)(A)(1), one of the following equations shall be used. The k and L_0 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 §60.754(a)(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.

(i) For sites with unknown year-to-year solid waste acceptance rate:

$$Q_m = 2L_0 R (e^{-kc} - e^{-kt})$$

where,

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

L_0 = methane generation potential, cubic meters per megagram solid waste

R = average annual acceptance rate, megagrams per year

k = methane generation rate constant, year⁻¹

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

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

(ii) For sites with known year-to-year solid waste acceptance rate:

$$Q_M = \sum_{i=1}^n 2 k L_0 M_i (e^{-kt_i})$$

where,

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

k = methane generation rate constant, year⁻¹

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

(iii) 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 paragraphs (a)(1) (i) and (ii) of this section. 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 paragraphs (a)(1) (i) or (ii) 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) For the purposes of determining sufficient density of gas collectors for compliance with §60.752(b)(2)(ii)(A)(2), 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 operational and performance standards.

(3) For the purpose of demonstrating whether the gas collection system flow rate is sufficient to determine compliance with §60.752(b)(2)(ii)(A)(3), the 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 §60.753(b). If negative pressure cannot be achieved without excess air infiltration within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial measurement of positive pressure. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(4) Owners or operators are not required to expand the system as required in paragraph (a)(3) of this section during the first 180 days after gas collection system startup.

(5) 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 §60.753(c). If a well exceeds one of these operating parameters, action shall be initiated to correct the exceedance within 5 calendar days. If correction of the exceedance cannot be achieved within 15 calendar days of the first measurement, the gas collection system shall be expanded to correct the exceedance within 120 days of the initial exceedance. Any attempted corrective measure shall not cause exceedances of other operational or performance standards. An alternative timeline for correcting the exceedance may be submitted to the Administrator for approval.

(6) An owner or operator seeking to demonstrate compliance with §60.752(b)(2)(ii)(A)(4) through the use of a collection system not conforming to the specifications provided in §60.759 shall provide information satisfactory to the Administrator as specified in §60.752(b)(2)(i)(C) demonstrating that off-site migration is being controlled.

(b) For purposes of compliance with §60.753(a), 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 §60.752(b)(2)(i). Each well shall be installed no later than 60 days after the date on which the initial solid waste has been in place for a period of:

(1) 5 years or more if active; or

(2) 2 years or more if closed or at final grade.

(c) The following procedures shall be used for compliance with the surface methane operational standard as provided in §60.753(d).

(1) 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 paragraph (d) of this section.

(2) 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.

(3) Surface emission monitoring shall be performed in accordance with section 4.3.1 of Method 21 of appendix A of this part, except that the probe inlet shall be placed within 5 to 10 centimeters of the ground. Monitoring shall be performed during typical meteorological conditions.

(4) Any reading of 500 parts per million or more above background at any location shall be recorded as a monitored exceedance and the actions specified in paragraphs (c)(4) (i) through (v) of this section shall be taken. As long as the specified actions are taken, the exceedance is not a violation of the operational requirements of §60.753(d).

(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 the location shall be monitored again within 10 days of the second exceedance. If the re-monitoring shows a third exceedance for the same location, the action specified in paragraph (c)(4)(v) of this section shall be taken, and no further monitoring of that location is required until the action specified in paragraph (c)(4)(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 paragraph (c)(4) (ii) or (iii) of this section shall be re-monitored 1 month from the initial exceedance. If the 1-month re-monitoring shows a concentration less than 500 parts per million above 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 paragraph (c)(4) (iii) or (v) shall be taken.

(v) For any location where monitored methane concentration equals or exceeds 500 parts per million 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. An alternative remedy to the exceedance, such as upgrading the blower, header pipes or control device, and a corresponding timeline for installation may be submitted to the Administrator for approval.

(5) The owner or operator shall implement a program to monitor for cover integrity and implement cover repairs as necessary on a monthly basis.

(d) Each owner or operator seeking to comply with the provisions in paragraph (c) of this section shall comply with the following instrumentation specifications and procedures for surface emission monitoring devices:

(1) The portable analyzer shall meet the instrument specifications provided in section 3 of Method 21 of appendix A of this part, except that "methane" shall replace all references to VOC.

(2) The calibration gas shall be methane, diluted to a nominal concentration of 500 parts per million in air.

(3) To meet the performance evaluation requirements in section 3.1.3 of Method 21 of appendix A of this part, the instrument evaluation procedures of section 4.4 of Method 21 of appendix A of this part shall be used.

(4) The calibration procedures provided in section 4.2 of Method 21 of appendix A of this part shall be followed immediately before commencing a surface monitoring survey.

(e) 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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998]

§ 60.756 Monitoring of operations.

Except as provided in §60.752(b)(2)(i)(B),

(a) Each owner or operator seeking to comply with §60.752(b)(2)(ii)(A) 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:

(1) Measure the gauge pressure in the gas collection header on a monthly basis as provided in §60.755(a)(3); and

(2) Monitor nitrogen or oxygen concentration in the landfill gas on a monthly basis as provided in §60.755(a)(5); and

(3) Monitor temperature of the landfill gas on a monthly basis as provided in §60.755(a)(5).

(c) Each owner or operator seeking to comply with §60.752(b)(2)(iii) using an open flare shall install, calibrate, maintain, and operate according to the manufacturer's specifications the following equipment:

(1) 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.

(f) Each owner or operator seeking to demonstrate compliance with §60.755(c), shall monitor surface concentrations of methane according to the instrument specifications and procedures provided in §60.755(d). Any closed landfill that has no monitored exceedances of the operational standard in three consecutive quarterly monitoring periods may skip to annual monitoring. Any methane reading of 500 ppm or more above background detected during the annual monitoring returns the frequency for that landfill to quarterly monitoring.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.757 Reporting requirements.

Except as provided in §60.752(b)(2)(i)(B),

(d) 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 as described under §60.7(a)(4).

(e) 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.

(1) The equipment removal report shall contain all of the following items:

(i) A copy of the closure report submitted in accordance with paragraph (d) of this section;

(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.

(2) The Administrator may request such additional information as may be necessary to verify that all of the conditions for removal in §60.752(b)(2)(v) have been met.

(f) Each owner or operator of a landfill seeking to comply with §60.752(b)(2) using an active collection system designed in accordance with §60.752(b)(2)(ii) shall submit to the Administrator annual reports of the recorded information in (f)(1) through (f)(6) of this paragraph. 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 §60.8. For enclosed combustion devices and flares, reportable exceedances are defined under §60.758(c).

(1) Value and length of time for exceedance of applicable parameters monitored under §60.756(a), (b), (c), and (d).

(3) 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.

(4) All periods when the collection system was not operating in excess of 5 days.

(5) The location of each exceedance of the 500 parts per million methane concentration as provided in §60.753(d) and the concentration recorded at each location for which an exceedance was recorded in the previous month.

(6) The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), and (c)(4) of §60.755.

Pursuant to 40 CFR 63.1980, the Permittee is required to submit the report required by 40 CFR 60.757(f) on a semi-annual basis.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.758 Recordkeeping requirements.

(a) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of an MSW landfill subject to the provisions of §60.752(b) shall keep for at least 5 years up-to-date, readily accessible, on-site

records of the design capacity report which triggered §60.752(b), the current amount of solid waste in-place, and the year-by-year waste acceptance rate. Off-site records may be maintained if they are retrievable within 4 hours. Either paper copy or electronic formats are acceptable.

(b) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill shall keep up-to-date, readily accessible records for the life of the control equipment of the data listed in paragraphs (b)(1) through (b)(4) of this section 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.

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

(i) The maximum expected gas generation flow rate as calculated in §60.755(a)(1). The owner or operator may use another method to determine the maximum gas generation flow rate, if the method has been approved by the Administrator.

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

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

(c) Except as provided in §60.752(b)(2)(i)(B), each owner or operator of a controlled landfill subject to the provisions of this subpart shall keep for 5 years up-to-date, readily accessible continuous records of the equipment operating parameters specified to be monitored in §60.756 as well as up-to-date, readily accessible records for periods of operation during which the parameter boundaries established during the most recent performance test are exceeded.

(4) Each owner or operator seeking to comply with the provisions of this subpart by use of an open flare shall keep up-to-date, readily accessible continuous records of the flame or flare pilot flame monitoring specified under §60.756(c), and up-to-date, readily accessible records of all periods of operation in which the flame or flare pilot flame is absent.

(d) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of this subpart 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.

(1) Each owner or operator subject to the provisions of this subpart shall keep up-to-date, readily accessible records of the installation date and location of all newly installed collectors as specified under §60.755(b).

(2) Each owner or operator subject to the provisions of this subpart shall keep readily accessible documentation of the nature, date of deposition, amount, and location of asbestos-containing or nondegradable waste excluded from collection as provided in §60.759(a)(3)(i) as well as any nonproductive areas excluded from collection as provided in §60.759(a)(3)(ii).

(e) Except as provided in §60.752(b)(2)(i)(B), each owner or operator subject to the provisions of

this subpart 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 §60.753, the reading in the subsequent month whether or not the second reading is an exceedance, and the location of each exceedance.

(f) 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.

[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32752, June 16, 1998; 65 FR 18909, Apr. 10, 2000]

§ 60.759 Specifications for active collection systems.

(a) Each owner or operator seeking to comply with §60.752(b)(2)(i) 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 §60.752(b)(2)(i)(C) and (D):

(1) 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.

(2) The sufficient density of gas collection devices determined in paragraph (a)(1) of this section 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.

(3) The placement of gas collection devices determined in paragraph (a)(1) of this section shall control all gas producing areas, except as provided by paragraphs (a)(3)(i) and (a)(3)(ii) of this section.

(i) Any segregated area of asbestos or nondegradable material may be excluded from collection if documented as provided under §60.758(d). The documentation shall provide the nature, date of deposition, location and amount of asbestos or nondegradable material deposited in the area, and shall be provided to the Administrator upon request.

(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:

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

where,

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

k = methane generation rate constant, year^{-1}

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 nonmethane organic compounds, parts per million by volume

3.6×10^{-9} = conversion factor

(iii) The values for k 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 (this distance from the well center to a point in the landfill where the pressure gradient applied by the blower or compressor approaches zero). If field testing has not been performed, the default values for k , L_o and C_{NMOC} provided in §60.754(a)(1) or the alternative values from §60.754(a)(5) shall be used. The mass of nondegradable solid waste contained within the given section may be subtracted from the total mass of the section when estimating emissions provided the nature, location, age, and amount of the nondegradable material is documented as provided in paragraph (a)(3)(i) of this section.

(b) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall construct the gas collection devices using the following equipment or procedures:

(1) 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.

(2) Vertical wells shall be placed so as not to endanger underlying liners and shall address the occurrence of water within the landfill. Holes and trenches constructed for piped wells and horizontal collectors shall be of sufficient cross-section so as to allow for their proper construction and completion including, for example, centering of pipes and placement of gravel backfill. Collection devices shall be designed so as not to allow indirect short circuiting of air into the cover or refuse into the collection system or gas into the air. Any gravel used around pipe perforations should be of a dimension so as not to penetrate or block perforations.

(3) 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.

(c) Each owner or operator seeking to comply with §60.752(b)(2)(i)(A) shall convey the landfill gas to a control system in compliance with §60.752(b)(2)(iii) through the collection header pipe(s). The gas mover equipment shall be sized to handle the maximum gas generation flow rate expected over the intended use period of the gas moving equipment using the following procedures:

(1) For existing collection systems, the flow data shall be used to project the maximum flow rate. If no flow data exists, the procedures in paragraph (c)(2) of this section shall be used.

(2) For new collection systems, the maximum flow rate shall be in accordance with §60.755(a)(1).

**[61 FR 9919, Mar. 12, 1996, as amended at 63 FR 32753, June 16, 1998; 64 FR 9262, Feb. 24, 1999;
65 FR 18909, Apr. 10, 2000]**

Attachment B, NESHAP Subpart AAAA

**Liberty Landfill, Inc.
8635 East State Road 16
Monticello, Indiana 47960**

Permit No.: 181-23367-00035

40 CFR 63, Subpart AAAA—National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills

What This Subpart Covers

§ 63.1930 What is the purpose of this subpart?

This subpart establishes national emission standards for hazardous air pollutants for existing and new municipal solid waste (MSW) landfills. This subpart requires all landfills described in §63.1935 to meet the requirements of 40 CFR part 60, subpart Cc or WWW and requires timely control of bioreactors. This subpart also requires such landfills to meet the startup, shutdown, and malfunction (SSM) requirements of the general provisions of this part and provides that compliance with the operating conditions shall be demonstrated by parameter monitoring results that are within the specified ranges. It also includes additional reporting requirements.

§ 63.1935 Am I subject to this subpart?

You are subject to this subpart if you meet the criteria in paragraph (a) or (b) of this section.

(a) You are subject to this subpart if you own or operate a MSW landfill that has accepted waste since November 8, 1987 or has additional capacity for waste deposition and meets any one of the three criteria in paragraphs (a)(1) through (3) of this section:

(3) Your MSW landfill is an area source landfill that has a design capacity equal to or greater than 2.5 million megagrams (Mg) and 2.5 million cubic meters (m³) and has estimated uncontrolled emissions equal to or greater than 50 megagrams per year (Mg/yr) NMOC as calculated according to §60.754(a) of the MSW landfills new source performance standards in 40 CFR part 60, subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan that applies to your landfill.

§ 63.1940 What is the affected source of this subpart?

(a) An affected source of this subpart is a MSW landfill, as defined in §63.1990, that meets the criteria in §63.1935(a) or (b). The affected source includes the entire disposal facility in a contiguous geographic space where household waste is placed in or on land, including any portion of the MSW landfill operated as a bioreactor.

(c) An affected source of this subpart is existing if it is not new.

§ 63.1945 When do I have to comply with this subpart?

(f) If your landfill is an existing affected source and is an area source meeting the criteria in §63.1935(a)(3), you must comply with the requirements in §§63.1955(b) and 63.1960 through 63.1980 by the date your landfill is required to install a collection and control system by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or EPA approved and effective State or tribal plan that applies to your landfill or by January 16, 2004, whichever occurs later.

§ 63.1950 When am I no longer required to comply with this subpart?

You are no longer required to comply with the requirements of this subpart when you are no longer required to apply controls as specified in 40 CFR 60.752(b)(2)(v) of subpart WWW, or the

Federal plan or EPA approved and effective State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill.

Standards

§ 63.1955 What requirements must I meet?

(a) You must fulfill one of the requirements in paragraph (a)(1) or (2) of this section, whichever is applicable:

(1) Comply with the requirements of 40 CFR part 60, subpart WWW.

(b) If you are required by 40 CFR 60.752(b)(2) of subpart WWW, the Federal plan, or an EPA approved and effective State or tribal plan to install a collection and control system, you must comply with the requirements in §§63.1960 through 63.1985 and with the general provisions of this part specified in table 1 of this subpart.

(c) For approval of collection and control systems that include any alternatives to the operational standards, test methods, procedures, compliance measures, monitoring, recordkeeping or reporting provisions, you must follow the procedures in 40 CFR 60.752(b)(2). If alternatives have already been approved under 40 CFR part 60 subpart WWW or the Federal plan, or EPA approved and effective State or tribal plan, these alternatives can be used to comply with this subpart, except that all affected sources must comply with the SSM requirements in Subpart A of this part as specified in Table 1 of this subpart and all affected sources must submit compliance reports every 6 months as specified in §63.1980(a) and (b), including information on all deviations that occurred during the 6-month reporting period. Deviations for continuous emission monitors or numerical continuous parameter monitors must be determined using a 3 hour monitoring block average.

General and Continuing Compliance Requirements

§ 63.1960 How is compliance determined?

Compliance is determined in the same way it is determined for 40 CFR part 60, subpart WWW, including performance testing, monitoring of the collection system, continuous parameter monitoring, and other credible evidence. In addition, continuous parameter monitoring data, collected under 40 CFR 60.756(b)(1), (c)(1), and (d) of subpart WWW, are used to demonstrate compliance with the operating conditions for control systems. If a deviation occurs, you have failed to meet the control device operating conditions described in this subpart and have deviated from the requirements of this subpart. Finally, you must develop a written SSM plan according to the provisions in 40 CFR 63.6(e)(3). A copy of the SSM plan must be maintained on site. Failure to write or maintain a copy of the SSM plan is a deviation from the requirements of this subpart.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

§ 63.1965 What is a deviation?

A deviation is defined in §63.1990. For the purposes of the landfill monitoring and SSM plan requirements, deviations include the items in paragraphs (a) through (c) of this section.

(a) A deviation occurs when the control device operating parameter boundaries described in 40 CFR 60.758(c)(1) of subpart WWW are exceeded.

(b) A deviation occurs when 1 hour or more of the hours during the 3-hour block averaging period does not constitute a valid hour of data. A valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.

(c) A deviation occurs when a SSM plan is not developed or maintained on site.

[68 FR 2238, Jan. 16, 2003, as amended at 71 FR 20462, Apr. 20, 2006]

§ 63.1975 How do I calculate the 3-hour block average used to demonstrate compliance?

Averages are calculated in the same way as they are calculated in 40 CFR part 60, subpart WWW, except that the data collected during the events listed in paragraphs (a), (b), (c), and (d) of this section are not to be included in any average computed under this subpart:

(a) Monitoring system breakdowns, repairs, calibration checks, and zero (low-level) and high-level adjustments.

(b) Startups.

(c) Shutdowns.

(d) Malfunctions.

Notifications, Records, and Reports

§ 63.1980 What records and reports must I keep and submit?

(a) Keep records and reports as specified in 40 CFR part 60, subpart WWW, or in the Federal plan, EPA approved State plan or tribal plan that implements 40 CFR part 60, subpart Cc, whichever applies to your landfill, with one exception: You must submit the annual report described in 40 CFR 60.757(f) every 6 months.

(b) You must also keep records and reports as specified in the general provisions of 40 CFR part 60 and this part as shown in Table 1 of this subpart. Applicable records in the general provisions include items such as SSM plans and the SSM plan reports.

Other Requirements and Information

§ 63.1985 Who enforces this subpart?

(a) This subpart can be implemented and enforced by the U.S. EPA, or a delegated authority such as the applicable State, local, or tribal agency. If the EPA Administrator has delegated authority to a State, local, or tribal agency, then that agency as well as the U.S. EPA has the authority to implement and enforce this subpart. Contact the applicable EPA Regional Office to find out if this subpart is delegated to a State, local, or tribal agency.

(b) In delegating implementation and enforcement authority of this subpart to a State, local, or tribal agency under subpart E of this part, the authorities contained in paragraph (c) of this section are retained by the EPA Administrator and are not transferred to the State, local, or tribal agency.

(c) The authorities that will not be delegated to State, local, or tribal agencies are as follows. Approval of alternatives to the standards in §63.1955. Where these standards reference another subpart, the cited provisions will be delegated according to the delegation provisions of the referenced subpart.

§ 63.1990 What definitions apply to this subpart?

Terms used in this subpart are defined in the Clean Air Act, 40 CFR part 60, subparts A, Cc, and WWW; 40 CFR part 62, subpart GGG, and subpart A of this part, and this section that follows:

Bioreactor means a MSW landfill or portion of a MSW landfill where any liquid other than leachate (leachate includes landfill gas condensate) is added in a controlled fashion into the waste mass (often in combination with recirculating leachate) to reach a minimum average moisture content of at least 40 percent by weight to accelerate or enhance the anaerobic (without oxygen)

biodegradation of the waste.

Deviation means any instance in which an affected source subject to this subpart, or an owner or operator of such a source:

- (1) Fails to meet any requirement or obligation established by this subpart, including, but not limited to, any emissions limitation (including any operating limit) or work practice standard;
- (2) Fails to meet any term or condition that is adopted to implement an applicable requirement in this subpart and that is included in the operating permit for any affected source required to obtain such a permit; or
- (3) Fails to meet any emission limitation, (including any operating limit), or work practice standard in this subpart during SSM, regardless of whether or not such failure is permitted by this subpart.

Emissions limitation means any emission limit, opacity limit, operating limit, or visible emissions limit.

EPA approved State plan means a State plan that EPA has approved based on the requirements in 40 CFR part 60, subpart B to implement and enforce 40 CFR part 60, subpart Cc. An approved State plan becomes effective on the date specified in the notice published in the Federal Register announcing EPA's approval.

Federal plan means the EPA plan to implement 40 CFR part 60, subpart Cc for existing MSW landfills located in States and Indian country where State plans or tribal plans are not currently in effect. On the effective date of an EPA approved State or tribal plan, the Federal plan no longer applies. The Federal plan is found at 40 CFR part 62, subpart GGG.

Municipal solid waste landfill or MSW landfill means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. A municipal solid waste landfill may also receive other types of RCRA Subtitle D wastes (see §257.2 of this chapter) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of a municipal solid waste landfill may be separated by access roads. A municipal solid waste landfill may be publicly or privately owned. A municipal solid waste landfill may be a new municipal solid waste landfill, an existing municipal solid waste landfill, or a lateral expansion.

Tribal plan means a plan submitted by a tribal authority pursuant to 40 CFR parts 9, 35, 49, 50, and 81 to implement and enforce 40 CFR part 60, subpart Cc.

Work practice standard means any design, equipment, work practice, or operational standard, or combination thereof, that is promulgated pursuant to section 112(h) of the Clean Air Act.

As stated in §§63.1955 and 63.1980, you must meet each requirement in the following table that applies to you.

Table 1 to Subpart AAAA of Part 63—Applicability of NESHAP General Provisions to Subpart AAAA

Part 63 Citation	Description	Explanation
63.1(a)	Applicability: general applicability of NESHAP in this part	Affected sources are already subject to the provisions of paragraphs

		(a)(10)–(12) through the same provisions under 40 CFR, part 60 subpart A.
63.1(b)	Applicability determination for stationary sources	
63.1(e)	Title V permitting	
63.2	Definitions	
63.4	Prohibited activities and circumvention	Affected sources are already subject to the provisions of paragraph (b) through the same provisions under 40 CFR, part 60 subpart A.
63.5(b)	Requirements for existing, newly constructed, and reconstructed sources	
63.6(e)	Operation and maintenance requirements, startup, shutdown and malfunction plan provisions	
63.6(f)	Compliance with nonopacity emission standards	Affected sources are already subject to the provisions of paragraphs (f)(1) and (2)(i) through the same provisions under 40 CFR, part 60 subpart A.
63.10(b)(2)(i)–(b)(2)(v)	General recordkeeping requirements	
63.10(d)(5)	If actions taken during a startup, shutdown and malfunction plan are consistent with the procedures in the startup, shutdown and malfunction plan, this information shall be included in a semi-annual startup, shutdown and malfunction plan report. Any time an action taken during a startup, shutdown and malfunction plan is not consistent with the startup, shutdown and malfunction plan, the source shall report actions taken within 2 working days after commencing such actions, followed by a letter 7 days after the event	
63.12(a)	These provisions do not preclude the State from adopting and enforcing any standard, limitation, etc., requiring permits, or requiring emissions reductions in excess of those specified	
63.15	Availability of information and confidentiality	

Attachment C, NESHAP Subpart M

Liberty Landfill, Inc.
8635 East State Road 16
Monticello, Indiana 47960

Permit No.: 181-23367-00035

40 CFR 61, Subpart M—National Emission Standard for Hazardous Air Pollutants for Asbestos

§ 61.140 Applicability.

The provisions of this subpart are applicable to those sources specified in §§61.142 through 61.151, 61.154, and 61.155.

[55 FR 48414, Nov. 20, 1990]

§ 61.141 Definitions.

All terms that are used in this subpart and are not defined below are given the same meaning as in the Act and in subpart A of this part.

Active waste disposal site means any disposal site other than an inactive site.

Adequately wet means sufficiently mix or penetrate with liquid to prevent the release of particulates. If visible emissions are observed coming from asbestos-containing material, then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.

Asbestos means the asbestiform varieties of serpentinite (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

Asbestos-containing waste materials means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of this subpart. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste and materials contaminated with asbestos including disposable equipment and clothing.

Asbestos mill means any facility engaged in converting, or in any intermediate step in converting, asbestos ore into commercial asbestos. Outside storage of asbestos material is not considered a part of the asbestos mill.

Asbestos tailings means any solid waste that contains asbestos and is a product of asbestos mining or milling operations.

Asbestos waste from control devices means any waste material that contains asbestos and is collected by a pollution control device.

Category I nonfriable asbestos-containing material (ACM) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II nonfriable ACM means any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined using the methods specified in appendix E, subpart

E, 40 CFR part 763, section 1, Polarized Light Microscopy that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Commercial asbestos means any material containing asbestos that is extracted from ore and has value because of its asbestos content.

Cutting means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.

Demolition means the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility.

Emergency renovation operation means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment.

Fabricating means any processing (e.g., cutting, sawing, drilling) of a manufactured product that contains commercial asbestos, with the exception of processing at temporary sites (field fabricating) for the construction or restoration of facilities. In the case of friction products, fabricating includes bonding, debonding, grinding, sawing, drilling, or other similar operations performed as part of fabricating.

Facility means any institutional, commercial, public, industrial, or residential structure, installation, or building (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative, but excluding residential buildings having four or fewer dwelling units); any ship; and any active or inactive waste disposal site. For purposes of this definition, any building, structure, or installation that contains a loft used as a dwelling is not considered a residential structure, installation, or building. Any structure, installation or building that was previously subject to this subpart is not excluded, regardless of its current use or function.

Facility component means any part of a facility including equipment.

Friable asbestos material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Fugitive source means any source of emissions not controlled by an air pollution control device.

Glove bag means a sealed compartment with attached inner gloves used for the handling of asbestos-containing materials. Properly installed and used, glove bags provide a small work area enclosure typically used for small-scale asbestos stripping operations. Information on glove-bag installation, equipment and supplies, and work practices is contained in the Occupational Safety and Health Administration's (OSHA's) final rule on occupational exposure to asbestos (appendix G to 29 CFR 1926.58).

Grinding means to reduce to powder or small fragments and includes mechanical chipping or drilling.

In poor condition means the binding of the material is losing its integrity as indicated by peeling,

cracking, or crumbling of the material.

Inactive waste disposal site means any disposal site or portion of it where additional asbestos-containing waste material has not been deposited within the past year.

Installation means any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).

Leak-tight means that solids or liquids cannot escape or spill out. It also means dust-tight.

Malfunction means any sudden and unavoidable failure of air pollution control equipment or process equipment or of a process to operate in a normal or usual manner so that emissions of asbestos are increased. Failures of equipment shall not be considered malfunctions if they are caused in any way by poor maintenance, careless operation, or any other preventable upset conditions, equipment breakdown, or process failure.

Manufacturing means the combining of commercial asbestos—or, in the case of woven friction products, the combining of textiles containing commercial asbestos—with any other material(s), including commercial asbestos, and the processing of this combination into a product. Chlorine production is considered a part of manufacturing.

Natural barrier means a natural object that effectively precludes or deters access. Natural barriers include physical obstacles such as cliffs, lakes or other large bodies of water, deep and wide ravines, and mountains. Remoteness by itself is not a natural barrier.

Nonfriable asbestos-containing material means any material containing more than 1 percent asbestos as determined using the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Nonscheduled renovation operation means a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted.

Outside air means the air outside buildings and structures, including, but not limited to, the air under a bridge or in an open air ferry dock.

Owner or operator of a demolition or renovation activity means any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

Particulate asbestos material means finely divided particles of asbestos or material containing asbestos.

Planned renovation operations means a renovation operation, or a number of such operations, in which some RACM will be removed or stripped within a given period of time and that can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

Regulated asbestos-containing material (RACM) means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations

regulated by this subpart.

Remove means to take out RACM or facility components that contain or are covered with RACM from any facility.

Renovation means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are demolitions.

Resilient floor covering means asbestos-containing floor tile, including asphalt and vinyl floor tile, and sheet vinyl floor covering containing more than 1 percent asbestos as determined using polarized light microscopy according to the method specified in appendix E, subpart E, 40 CFR part 763, section 1, Polarized Light Microscopy.

Roadways means surfaces on which vehicles travel. This term includes public and private highways, roads, streets, parking areas, and driveways.

Strip means to take off RACM from any part of a facility or facility components.

Structural member means any load-supporting member of a facility, such as beams and load supporting walls; or any nonload-supporting member, such as ceilings and nonload-supporting walls.

Visible emissions means any emissions, which are visually detectable without the aid of instruments, coming from RACM or asbestos-containing waste material, or from any asbestos milling, manufacturing, or fabricating operation. This does not include condensed, uncombined water vapor.

Waste generator means any owner or operator of a source covered by this subpart whose act or process produces asbestos-containing waste material.

Waste shipment record means the shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.

Working day means Monday through Friday and includes holidays that fall on any of the days Monday through Friday.

[49 FR 13661, Apr. 5, 1984; 49 FR 25453, June 21, 1984, as amended by 55 FR 48414, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991; 60 FR 31920, June 19, 1995]

§ 61.154 Standard for active waste disposal sites.

Each owner or operator of an active waste disposal site that receives asbestos-containing waste material from a source covered under §61.149, 61.150, or 61.155 shall meet the requirements of this section:

(a) Either there must be no visible emissions to the outside air from any active waste disposal site where asbestos-containing waste material has been deposited, or the requirements of paragraph (c) or (d) of this section must be met.

(b) Unless a natural barrier adequately deters access by the general public, either warning signs and fencing must be installed and maintained as follows, or the requirements of paragraph (c)(1) of this section must be met.

(1) Warning signs must be displayed at all entrances and at intervals of 100 m (330 ft) or less along

the property line of the site or along the perimeter of the sections of the site where asbestos-containing waste material is deposited. The warning signs must:

- (i) Be posted in such a manner and location that a person can easily read the legend; and**
- (ii) Conform to the requirements of 51 cm × 36 cm (20&inch;×14&inch;) upright format signs specified in 29 CFR 1910.145(d)(4) and this paragraph; and**
- (iii) Display the following legend in the lower panel with letter sizes and styles of a visibility at least equal to those specified in this paragraph.**

Legend Notation

Asbestos Waste Disposal Site 2.5 cm (1 inch) Sans Serif, Gothic or Block.

Do Not Create Dust 1.9 cm (3/4 inch) Sans Serif, Gothic or Block.

Breathing Asbestos is Hazardous to Your Health 14 Point Gothic.

Spacing between any two lines must be at least equal to the height of the upper of the two lines.

(2) The perimeter of the disposal site must be fenced in a manner adequate to deter access by the general public.

(3) Upon request and supply of appropriate information, the Administrator will determine whether a fence or a natural barrier adequately deters access by the general public.

(c) Rather than meet the no visible emission requirement of paragraph (a) of this section, at the end of each operating day, or at least once every 24-hour period while the site is in continuous operation, the asbestos-containing waste material that has been deposited at the site during the operating day or previous 24-hour period shall:

(1) Be covered with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, or

(2) Be covered with a resinous or petroleum-based dust suppression agent that effectively binds dust and controls wind erosion. Such an agent shall be used in the manner and frequency recommended for the particular dust by the dust suppression agent manufacturer to achieve and maintain dust control. Other equally effective dust suppression agents may be used upon prior approval by the Administrator. For purposes of this paragraph, any used, spent, or other waste oil is not considered a dust suppression agent.

(d) Rather than meet the no visible emission requirement of paragraph (a) of this section, use an alternative emissions control method that has received prior written approval by the Administrator according to the procedures described in §61.149(c)(2).

(e) For all asbestos-containing waste material received, the owner or operator of the active waste disposal site shall:

(1) Maintain waste shipment records, using a form similar to that shown in Figure 4, and include the following information:

(i) The name, address, and telephone number of the waste generator.

(ii) The name, address, and telephone number of the transporter(s).

(iii) The quantity of the asbestos-containing waste material in cubic meters (cubic yards).

(iv) The presence of improperly enclosed or uncovered waste, or any asbestos-containing waste material not sealed in leak-tight containers. Report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site, by the following working day, the presence of a significant amount of improperly enclosed or uncovered waste. Submit a copy of the waste shipment record along with the report.

(v) The date of the receipt.

(2) As soon as possible and no longer than 30 days after receipt of the waste, send a copy of the signed waste shipment record to the waste generator.

(3) Upon discovering a discrepancy between the quantity of waste designated on the waste shipment records and the quantity actually received, attempt to reconcile the discrepancy with the waste generator. If the discrepancy is not resolved within 15 days after receiving the waste, immediately report in writing to the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the waste generator (identified in the waste shipment record), and, if different, the local, State, or EPA Regional office responsible for administering the asbestos NESHAP program for the disposal site. Describe the discrepancy and attempts to reconcile it, and submit a copy of the waste shipment record along with the report.

(4) Retain a copy of all records and reports required by this paragraph for at least 2 years.

(f) Maintain, until closure, records of the location, depth and area, and quantity in cubic meters (cubic yards) of asbestos-containing waste material within the disposal site on a map or diagram of the disposal area.

(g) Upon closure, comply with all the provisions of §61.151.

(h) Submit to the Administrator, upon closure of the facility, a copy of records of asbestos waste disposal locations and quantities.

(i) Furnish upon request, and make available during normal business hours for inspection by the Administrator, all records required under this section.

(j) Notify the Administrator in writing at least 45 days prior to excavating or otherwise disturbing any asbestos-containing waste material that has been deposited at a waste disposal site and is covered. If the excavation will begin on a date other than the one contained in the original notice, notice of the new start date must be provided to the Administrator at least 10 working days before excavation begins and in no event shall excavation begin earlier than the date specified in the original notification. Include the following information in the notice:

(1) Scheduled starting and completion dates.

(2) Reason for disturbing the waste.

(3) Procedures to be used to control emissions during the excavation, storage, transport, and ultimate disposal of the excavated asbestos-containing waste material. If deemed necessary, the Administrator may require changes in the emission control procedures to be used.

(4) Location of any temporary storage site and the final disposal site.

(Secs. 112 and 301(a) of the Clean Air Act as amended (42 U.S.C. 7412, 7601(a))

[49 FR 13661, Apr. 5, 1990. Redesignated and amended at 55 FR 48431, Nov. 20, 1990; 56 FR 1669, Jan. 16, 1991]

§ 61.157 Delegation of authority.

(a) In delegating implementation and enforcement authority to a State under section 112(d) of the Act, the authorities contained in paragraph (b) of this section shall be retained by the Administrator and not transferred to a State.

(b) Authorities that will not be delegated to States:

(1) Section 61.149(c)(2)

(2) Section 61.150(a)(4)

(3) Section 61.151(c)

(4) Section 61.152(b)(3)

(5) Section 61.154(d)

(6) Section 61.155(a).

[55 FR 48433, Nov. 20, 1990]

2. IDEM, OAQ has updated its telephone numbers and decided to add the specific mail codes (MC) for each of the IDEM branches to improve mail delivery, as follows:

Telephone Number: 317-233-~~5674~~ **0178**

Facsimile Number: 317-233-~~5967~~ **6865**

Permits Branch: **MC 61-53 IGCN 1003**

Compliance Branch: **MC 61-53 IGCN 1003**

Air Compliance Section: **MC 61-53 IGCN 1003**

Compliance Data Section: **MC 61-53 IGCN 1003**

Asbestos Section: **MC 61-52 IGCN 1003**

Technical Support and Modeling: **MC 61-50 IGCN 1003**

3. IDEM, OAQ has removed the identification of the Responsible Official in Condition A.1. IDEM will continue to maintain records of the name, title, and contact information for the responsible official.

A.1 General Information [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)] [326 IAC 2-7-1(22)]

The Permittee owns and operates a stationary municipal solid waste landfill.

Responsible Official:	Director of Operations
Source Address:	8635 E. State Road 16, Monticello, IN 47960
Mailing Address:	8635 E. State Road 16, Monticello, IN 47960
SIC Code:	4953
County Location:	White
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Part 70 Permit Program
	Minor Source under PSD Rules
	Minor Source, Section 112 of the Clean Air Act
	Not 1 of 28 Source Categories

4. Condition C.4 has been revised to indicate that the incineration requirements are federally

enforceable under 326 IAC 9-1-2. 326 IAC 4-2 and 326 IAC 9-1-2 were incorporated into the Indiana SIP on January 31, 2005.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2. ~~This condition is not federally enforceable.~~

Conclusion and Recommendation

This proposed permit modification shall be subject to the conditions of the attached proposed Part 70 Significant Permit Modification 181-23367-00035. The staff recommend to the Commissioner that this Part 70 Significant Permit Modification be approved.

Appendix A: Emission Calculations
Fugitive Emissions From Unpaved Roads

Company Name: Liberty Landfill, Inc.
Address: 8635 East State Road 16, Monticello, Indiana 47960
SPM: 181-23367-00035
Reviewer: ERG/ST
Date: **February 14, 2008**

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.2 - Unpaved Roads (12/03), the PM/PM10 emission factors for unpaved roads can be estimated from the following equation:

$$E = k \times (s/12)^a \times (w/3)^b \times ((365 - p)/365)$$

where:

E = emission factor (lb/vehicle mile traveled)
s = surface material silt content (%) = 6.4 % (AP-42, Table
w = mean vehicle weight (tons) = **26.5** tons
k = empirical constant = 4.9 for PM and 1.5 for PM10
a = empirical constant = 0.7 for PM and 0.9 for PM10
b = empirical constant = 0.45 for PM and PM10
p = number of days per year with 0.01 inches precipitation 112

$$\begin{aligned} \text{PM Emission Factor} &= 4.9 \times (6.4/12)^{0.7} \times (26.5/3)^{0.45} \times ((365 - 112)/365) = 5.83 \text{ lbs/mile} \\ \text{PM10 Emission Factor} &= 1.5 \times (6.4/12)^{0.9} \times (26.5/3)^{0.45} \times ((365 - 112)/365) = 1.57 \text{ lbs/mile} \\ \text{Length of Unpaved Roads in One Direction} &= 0.50 \text{ miles} \end{aligned}$$

2. Potential to Emit (PTE) of PM/PM10 Before Control from Unpaved Roads:

Vehicle Type	Trucks per day	*Average Vehicle Weight (tons)	*Total Trip Number (trips/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	Vehicle Mile Traveled (VMT) (miles/yr)	PTE of PM (tons/yr)
Transfer Trailer	68	29	25,000	48.5%	14.08	25,000	72.9
Fron End Loader	19	24	7,000	13.6%	3.26	7,000	20.4
Rear End Loader	16	24	6,000	11.7%	2.80	6,000	17.5
Roll-Off Container	23	26	8,500	16.5%	4.29	8,500	24.8
Dump Truck	11	26	4,000	7.77%	2.02	4,000	11.66
Private Vehicle	3	2.5	1,000	1.94%	0.05	1,000	2.91
Total	141			100%	26.5	51,500	150

* This information is provided by the source. The landfill operates 24 hours per day and 365 days per year.

Methodology

Average Vehicle Weight (ton) = (Weight of Unloaded Vehicles + Weight of Loaded Vehicles) / 2

Total Trip Number (trips/yr) = Trucks per day x 365 (days/yr)

Traffic Component (%) = Trucks per Day (by type) / Total Trucks per Day

Component Vehicle Weight = Avg. Vehicle Weight (tons) x Traffic Component (%)

(Note that the summation of the component vehicle weight equals the Mean Vehicle Weight.)

VMT(miles/yr) = Length of Unpaved Roads in One Direction (miles) x 2 x Total Trip Numbers (trips/yr)

PTE of PM/PM10 (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors (lbs/mile) x 1 tons/ 2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Unpaved Roads:

The source proposed to use wet suppression to control fugitive dust emissions. The control efficiency from wet suppression is assumed to be 80%

$$\text{PTE of PM after Control} = 150 \text{ tons/yr} \times (1-80\%) = 30.0 \text{ tons/yr}$$

$$\text{PTE of PM10 after Control} = 40.5 \text{ tons/yr} \times (1-80\%) = 8.10 \text{ tons/yr}$$

Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads

Company Name: Liberty Landfill, Inc.
Address: 8635 East State Road 16, Monticello, Indiana 47960
SPM: 181-23367-00035
Reviewer: ERG/ST
Date: **February 14, 2008**

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E = emission factor (lb/vehicle mile traveled)
sL = road surface silt loading (g/m²) = 7.4 (g/m²) (AP-42, Table 13.2.1-4)
w = mean vehicle weight (tons) = 25.7 tons
k = empirical constant = 0.082 for PM and 0.016 for PM10
a = empirical constant = 0.65
b = empirical constant = 1.5
C = emission factor for exhaust, brake and tire wear 0.00047 for PM and PM10
p = number of days per year with 0.01 inches precipitation 112

PM Emission Factor = $(0.082 \times (7.4/2)^{0.65} \times (25.4/3)^{1.5} - 0.00047) \times (1 - 112/1460) = 4.45 \text{ lbs/mile}$

PM10 Emission Factor = $(0.016 \times (7.4/2)^{0.65} \times (25.4/3)^{1.5} - 0.00047) \times (1 - 112/1460) = 0.86 \text{ lbs/mile}$

Length of Paved Roads in One Direction = 0.08 miles

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	Trucks per day	*Average Vehicle Weight (tons)	*Total Trip Number (trips/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	Vehicle Mile Traveled (VMT) (miles/yr)	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Transfer Trailer	68	29	25,000	48.5%	14.08	4,000	8.90	1.72
Fronnd End Loader	19	24	7,000	13.6%	3.26	1,120	2.49	0.48
Rear End Loader	16	24	6,000	11.7%	2.80	960	2.13	0.41
Roll-Off Container	23	26	8,500	16.5%	4.29	1,360	3.02	0.59
Dump Truck	11	16	4,000	7.77%	1.24	640	1.42	0.28
Private Vehicle	3	2.5	1,000	1.94%	0.05	160	0.36	0.07
Total	141			100%	25.7	8,240	18.3	3.55

* This information is provided by the source. The landfill operates 24 hours per day and 365 days per year.

Methodology

Average Vehicle Weight (ton) = (Weight of Unloaded Vehicles + Weight of Loaded Vehicles) / 2

Total Trip Number (trips/yr) = Trucks per day x 365 (days/yr)

Traffic Component (%) = Trucks per Day (by type) / Total Trucks per Day

Component Vehicle Weight = Avg. Vehicle Weight (tons) x Traffic Component (%)

(Note that the summation of the component vehicle weight equals the Mean Vehicle Weight.)

VMT(miles/yr) = Length of Paved Roads in One Direction (miles) x 2 x Total Trip Numbers (trips/yr)

PTE of PM/PM10 (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors (lbs/mile) x 1 tons/ 2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source proposed to use sweeping and wet suppression to control fugitive dust emissions. The control efficiency from sweeping and wet suppression

PTE of PM after Control = 18.3 tons/yr x (1-80%) = 3.66 tons/yr

PTE of PM10 after Control = 3.55 tons/yr x (1-80%) = 0.71 tons/yr

Appendix A: Emission Calculations
Summary

Company Name: Liberty Landfill, Inc.
 Address: 8635 East State Road 16, Monticello, Indiana 47960
 SPM: 181-23367-00035
 Reviewer: ERG/ST
 Date: **February 14, 2008**

Emission Unit	Potential to Emit (tons/year)								
	PM	PM10	SO ₂	NO _x	CO	VOC	Single HAP (hydrogen chloride)	Single HAP (toluene)	Total HAPs
Landfill and Roads (fugitive)	33.7	8.82	--	--	#REF!	#REF!	0.0	#REF!	#REF!
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
Totals	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!	#REF!

Liberty Landfill is not in one of the 28 source categories. Fugitive emissions of PM, PM10, CO, VOC, and HAP from the landfill are not counted towards Part 70 applicability. Fugitive emissions are not counted towards applicability of PSD and Emission Offset.

Appendix A: Emission Calculations
Landfill Gas Produced by the Landfill

Company Name: Liberty Landfill, Inc.
Address: 8635 East State Road 16, Monticello, Indiana 47960
SPM: 181-23367-00035
Reviewer: ERG/ST
Date: January 7, 2008

Inputs from Landfill Gas Model (Emissions Before Controls)			
Product	m ³ /yr	mg/yr	tons/year
Methane	5.73E+07	3.83E+04	42,075
CO ₂	5.73E+07	1.05E+05	115,390
CO	1.61E+04	1.87E+01	20.6
NMOC	6.88E+04	2.47E+02	271
VOC	2.68E+04	9.62E+01	105.8
Fugitive Emissions from Landfill after Controls			tons/yr
CO			4.11
VOC			21.2

(AP 42, Chapter 2.4, Table 2.4-2, footnote c: VOC = 39% of

- | | | |
|---|-----------------|---|
| 1. Landfill Gas (LFG) Production Rate: | 1.15E+08 | m ³ /yr (= CH ₄ + CO ₂ production rate: LandGEM2.01) |
| 2. Collection Efficiency*: | 80% | (AP 42, Chapter 2.4) |
| 3. Landfill Gas Available for Use in Engines and Flare: | 6,165 | scfm |

Methodology

Uncontrolled Emissions of CO and NMOC (tons/yr) = CO / NMOC emissions at closure (Mg/yr)(from LandGEM 2.01) x 1.1 tons/Mg

Uncontrolled Emissions of VOC (tons/yr) = NMOC emissions at closure (Mg/yr)(from LandGEM 2.01) x 39 %

Fugitive CO and VOC Emissions from Landfill emissions = Uncontrolled Emissions of CO and VOC (tons/yr) x (1 - Collection Efficiency)

Landfill Gas Available (scfm) = LFG Production Rate m³/yr x 35.31467 ft³/m³ x 1 yr/8,760 hr x 1 hr/60 min

Notes:

* AP 42, Chapter 2.4 reports that landfill gas collection efficiencies range from 65% to 85%. Given Liberty Landfill's management practices, 80% collection is taken as the amount of landfill gas available for combustion in the engines and flare.

Appendix A: Emission Calculations
HAP Emissions from the Landfill (fugitive), Generator Engines, and Flare

Company Name: Liberty Landfill, Inc.
Address: 8635 East State Road 16, Monticello, Indiana 47960
SPM: 181-23367-00035
Reviewer: ERG/ST
Date: January 7, 2008

- Landfill Gas (LFG) Production Rate: 114,700,000 m³/yr (= CH₄ + CO₂ production rate: LandGEM2.01)
- Collection Efficiency*: 80.00% (AP 42, Chapter 2.4)
- Landfill Gas Available for Use in Engines and Flare: 6,165 scfm
- Max. LFG Flow Rate to generator engines at Liberty Landfill: 1,228 scfm
- Max. LFG Flow Rate to flare at Liberty Landfill: 1,362 scfm

LFG Compound	HAP	VOC	CAS	Molecular Weight (lb/lb-mol)	Default Conc. (ppmv)	Uncontrolled HAPs Emissions (ton/yr)	Fugitive HAPs Emissions (tons/yr)	Destruction Efficiency (flare) (%)	Destruction Efficiency (IC engines) (%)	Controlled HAPs Emissions (ton/yr)	Total HAP Emissions (tons/yr)
1,1,1-Trichloroethane (methyl chloroform)	x	-	71-55-6	133.41	0.48	0.342	0.068	98.0	93.0	0.005	0.073
1,1,2,2-Tetrachloroethane	x	x	79-34-5	167.85	1.11	0.994	0.199	98.0	93.0	0.015	0.213
1,1,2 - Trichloroethane (1,1,2 TCA)	x	x	79-00-5	133.41	0.1	0.071	0.014	98.0	93.0	0.001	0.015
1,1-Dichloroethane (ethylidene dichloride)	x	x	75-34-3	98.97	2.35	1.240	0.248	98.0	93.0	0.018	0.266
1,1-Dichloroethene (vinylidene chloride)	x	x	75-35-4	96.94	0.2	0.103	0.021	98.0	93.0	0.002	0.022
1,2-Dichloroethane (ethylene dichloride)	x	x	107-06-2	98.96	0.41	0.216	0.043	98.0	93.0	0.003	0.046
1,2-Dichloropropane (propylene dichloride)	x	x	78-87-5	112.99	0.18	0.108	0.022	98.0	93.0	0.002	0.023
2-Propanol (isopropyl alcohol)	-	y	67-63-0	60.11	50.1	0.000	0.000	99.7	86.1	0.000	0.000
Acetone (2-propanone)	-	-	67-64-1	58.08	7.01	0.000	0.000	99.7	86.1	0.000	0.000
Acrylonitrile (Propenenitrile)	x	x	107-13-1	53.06	6.33	1.791	0.358	99.7	86.1	0.041	0.399
Benzene	x	x	71-43-2	78.12	1.91	0.796	0.159	99.7	86.1	0.018	0.177
Bromodichloromethane	-	y	75-27-4	163.83	3.13	0.000	0.000	98.0	93.0	0.000	0.000
Butane	-	y	106-97-8	58.12	5.03	0.000	0.000	99.7	86.1	0.000	0.000
Carbon disulfide	x	x	75-15-0	76.13	0.58	0.235	0.047	99.7	86.1	0.005	0.052
Carbon tetrachloride	x	x	56-23-5	153.84	0.004	0.003	0.001	98.0	93.0	0.000	0.001
Carbonyl sulfide	x	x	463-58-1	60.07	0.49	0.157	0.031	99.7	86.1	0.004	0.035
Chlorobenzene (monochlorobenzene)	x	x	108-90-7	112.56	0.25	0.150	0.030	98.0	93.0	0.002	0.032
Chlorodifluoromethane (CFC-22, freon-22)	-	-	75-45-6	86.47	1.3	0.000	0.000	98.0	93.0	0.000	0.000
Chloroethane (ethyl chloride)	x	x	75-00-3	64.52	1.25	0.430	0.086	98.0	93.0	0.006	0.092
Chloroform (trichloromethane)	x	x	67-66-3	119.39	0.03	0.019	0.004	98.0	93.0	0.000	0.004
Chloromethane (methyl chloride)	x	x	74-87-3	50.49	1.25	0.337	0.067	98.0	93.0	0.005	0.072
1,4 Dichlorobenzene (p-dichlorobenzene)	x	x	106-46-7	147	0.21	0.165	0.033	98.0	93.0	0.002	0.035
Dichlorodifluoromethane (CFC-12, freon-12)	-	-	75-71-8	120.91	15.7	0.000	0.000	98.0	93.0	0.000	0.000
Dichlorofluoromethane (freon-21)	-	-	75-43-4	102.92	2.62	0.000	0.000	98.0	93.0	0.000	0.000
Dichloromethane (methylene chloride)	x	-	75-09-2	84.94	14.3	6.478	1.296	98.0	93.0	0.095	1.391
Dimethyl Sulfide (methyl sulfide)	-	y	75-18-3	62.13	7.82	0.000	0.000	99.7	86.1	0.000	0.000
Ethane	-	-	74-84-0	30.07	899	0.000	0.000	99.7	86.1	0.000	0.000
Ethanol (ethyl alcohol)	-	y	64-17-5	46.08	27.2	0.000	0.000	99.7	86.1	0.000	0.000
Ethylbenzene	x	x	100-41-4	106.17	4.61	2.610	0.522	99.7	86.1	0.059	0.581
Ethyl Mercaptan (ethanethiol)	-	y	75-08-1	62.13	1.25	0.000	0.000	99.7	86.1	0.000	0.000
Ethylene dibromide (1,2 dibromoethane)	x	x	106-93-4	187.88	0.001	0.001	0.000	98.0	93.0	0.000	0.000
Fluorotrichloromethane (CFC-11, freon-11)	-	-	75-69-4	137.38	0.76	0.000	0.000	98.0	93.0	0.000	0.000
Hexane	x	x	110-54-3	86.18	6.57	3.020	0.604	99.7	86.1	0.068	0.672
Hydrogen Sulfide	-	-	7783-06-4	34.08	35.5	0.000	0.000	97.0	97.0	0.000	0.000
Mercury	x	-	7439-97-6	200.61	0.000292	0.0003	0.0001	0.0	0.0	0.000	0.0002
Methyl ethyl ketone (2-butanone)	-	x	78-93-3	72.11	7.09	0.000	0.000	99.7	86.1	0.000	0.000
Methyl isobutyl ketone (hexone)	x	x	107-10-1	100.16	1.87	0.999	0.200	99.7	86.1	0.023	0.222
Methyl Mercaptan	-	y	74-93-1	48.11	2.49	0.000	0.000	99.7	86.1	0.000	0.000
Pentane	-	y	109-66-0	72.15	3.29	0.000	0.000	99.7	86.1	0.000	0.000
Perchloroethylene	-	-	127-18-4	165.83	3.73	0.000	0.000	98.0	93.0	0.000	0.000
Propane	-	y	74-98-6	44.09	11.1	0.000	0.000	99.7	86.1	0.000	0.000
Toluene (methylbenzene)	x	x	108-88-3	92.1	39.3	19.304	3.861	99.7	86.1	0.438	4.299
Trichloroethylene (trichloroethene)	x	x	79-01-6	131.4	2.82	1.976	0.395	98.0	93.0	0.029	0.424
t - 1,2 - Dichloroethene (1,2 dichloroethylene)	-	-	156-60-5	96.94	2.84	0.000	0.000	98.0	93.0	0.000	0.000
Vinyl Chloride (chloroethylene, VCM)	x	x	75-01-4	62.5	7.34	2.447	0.489	98.0	93.0	0.036	0.525
Xylenes (m,o,p)	x	x	1330-20-7	106.16	12.1	6.851	1.370	99.7	86.1	0.155	1.526
Hydrogen Chloride (Hydrochloric acid)	x	-	7647-01-0	36.5	42	--	--	--	--	2.75	2.75
Total HAP						50.84	10.17			3.78	13.95
Maximum Single HAP											4.30

Note: Default concentrations are taken from AP-42 Table 2.4-1. Destruction efficiencies are taken from Table 2.4-3. Assume worst case destruction efficiencies in IC engines.

Key to HAP and VOC list: "x" denotes a HAP only or a HAP and VOC; "y" denotes a VOC only
HCl concentration is from AP-42, Chapter 2.4, Section 2.4.4.2. HCl only occurs in the combustion process of the control device.

Methodology

Uncontrolled HAPs Emissions (tons/yr) = LFG Production Rate (m³/yr) x 35.31 ft³/m³ (Concentration (ppmv) /1000,000) x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of HAPs (lbs/lbs mole) x (1 ton/2000 lbs)

Fugitive HAP Emissions = Uncontrolled HAPs Emissions (tons/yr) x (1 - Collection Efficiency)

Controlled HAPs Emissions = Max. LFG Flow Rate to control devices (scfm) x HAP Concentrations (ppmv) /1000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of HAP (lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs x (1 - Control Efficiency)

HCl Emissions (tons/yr) = Max. LFG Flow Rate to control devices (scfm) x Chloride Concentration (ppmv) /1,000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of Chloride (lbs/lbs mole) x ratio of mole weight of HCL to chloride x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs

Total HAP Emissions (tons/yr) = Fugitive HAP Emissions (tons/yr) + Controlled HAPs Emissions (tons/yr)

Appendix A: Emission Calculations
 Combustion Emissions from the Generator Engines and Flare

Company Name: Liberty Landfill, Inc.
 Address: 8635 East State Road 16, Monticello, Indiana 47960
 SPM: 181-23367-00035
 Reviewer: ERG/ST
 Date: January 7, 2008

Fuel Input MMBtu/hr	VOC ppmv	Flow Rate scfm	Facility Description:	Emissions Unit ID #
35.6	235	1,228	Four (4) 1,148 HP landfill gas-fueled generator engines (307 scfm each)	EG1 - EG4
37.1	235	1,362	Open Flare with a maximum capacity of 1,362 scfm	FL2

645,436,800
 715,867,200

Pollutant Emission Factors						
Emission Unit	PM ^a	PM10 ^a	SO ₂ ^b	NOx ^a	CO ^a	VOC ^c
IC Engines	48	48	46.9	250	470	235
Flare	17	17	46.9	61.5	336	235
	(lb/10 ⁶ dscf)	(lb/10 ⁶ dscf)	(ppmv)	(lb/10 ⁶ dscf)	(lb/10 ⁶ dscf)	(ppmv)

Potential To Emit (tons/year)						
Emission Unit	PM	PM10	SO ₂	NOx	CO	VOC
EG1 - EG4	7.75	7.75	2.55	40.3	75.8	1.37
FL2	3.04	3.04	2.83	11.0	60.1	0.53
PTE Total	10.8	10.8	5.38	51.3	136	1.91

^a Emission factors are from AP-42, Chapter 2.4 - Municipal Solid Waste Landfills, Table 2.4-4 (11/98).

Assume PM emissions equal to PM10 emissions.

Assume 99.2% control of VOC in flare. Assume 97.2% control of VOC in engines (AP 42, Chapter 2.4, Table 2.4-3)

^b Total inlet concentration of sulfur content compounds is from AP-42, Chapter 2.4 - Municipal Solid Waste Landfills - Page 8 (AP-42, 11/98).

^c The VOC concentration is from AP-42, table 2.4-2, footnote c.

Methodology

PM / PM10 / NOx / CO Emissions (tons/yr) = Flow Rate (scfm landfill gas) / 10⁶ x Emission Factor (lb/10⁶ dscf) x 50% (Methane % in landfill gas) x 60 min/hr x 8760 hrs/yr x 1 ton/2000 lbs

SO₂ Emissions (tons/yr) = Flow Rate (scfm) x Emission Factor (ppmv) / 1,000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of SO₂ (64 lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs

VOC Emissions (tons/yr) = Flow Rate (scfm) x Emission Factor (ppmv) / 1,000,000 x 1 atm / Gas Constant (0.7302 atm-cf/lb mole-R) / Temp (60F+ 460) x Mole weight of Hexane (lbs/lbs mole) x 60 min/hr x 8760 hr/yr x 1 ton/2000 lbs x (1 - Control Efficiency)

Appendix A: Emission Calculations
Fugitive Emissions From Unpaved Roads

Company Name: Liberty Landfill, Inc.
Address: 8635 East State Road 16, Monticello, Indiana 47960
SPM: 181-23367-00035
Reviewer: ERG/ST
Date: January 7, 2008

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.2 - Unpaved Roads (12/03), the PM/PM10 emission factors for unpaved roads can be estimated from the following equation:

$$E = k \times (s/12)^a \times (w/3)^b \times ((365 - p)/365)$$

where:

E = emission factor (lb/vehicle mile traveled)
s = surface material silt content (%) = 6.4 % (AP-42, Table 25.4 tons)
w = mean vehicle weight (tons) = 25.4 tons
k = empirical constant = 4.9 for PM and 1.5 for PM10
a = empirical constant = 0.7 for PM and 0.9 for PM10
b = empirical constant = 0.45 for PM and PM10
p = number of days per year with 0.01 inches precipitation 112

$$\text{PM Emission Factor} = 4.9 \times (6.4/12)^{0.7} \times (25.4/3)^{0.45} \times ((365 - 112)/365) = 5.72 \text{ lbs/mile}$$

$$\text{PM10 Emission Factor} = 1.5 \times (6.4/12)^{0.9} \times (25.4/3)^{0.45} \times ((365 - 112)/365) = 1.54 \text{ lbs/mile}$$

$$\text{Length of Unpaved Roads in One Direction} = 0.50 \text{ miles}$$

2. Potential to Emit (PTE) of PM/PM10 Before Control from Unpaved Roads:

Vehicle Type	Trucks per day	*Average Vehicle Weight (tons)	*Total Trip Number (trips/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	Vehicle Mile Traveled (VMT) (miles/yr)	PTE of PM (tons/yr)
Transfer Trailer	26	29	9,500	27.1%	7.87	9,500	27.2
Fronnd End Loader	19	24	7,000	20.0%	4.80	7,000	20.0
Rear End Loader	16	24	6,000	17.1%	4.11	6,000	17.2
Roll-Off Container	23	26	8,500	24.3%	6.31	8,500	24.3
Dump Truck	8	26	3,000	8.57%	2.23	3,000	8.58
Private Vehicle	3	2.5	1,000	2.86%	0.07	1,000	2.86
Total	96			100%	25.4	35,000	100

* This information is provided by the source. The landfill operates 24 hours per day and 365 days per year.

Methodology

Average Vehicle Weight (ton) = (Weight of Unloaded Vehicles + Weight of Loaded Vehicles) / 2

Total Trip Number (trips/yr) = Trucks per day x 365 (days/yr)

Traffic Component (%) = Trucks per Day (by type) / Total Trucks per Day

Component Vehicle Weight = Avg. Vehicle Weight (tons) x Traffic Component (%)

(Note that the summation of the component vehicle weight equals the Mean Vehicle Weight.)

VMT(miles/yr) = Length of Unpaved Roads in One Direction (miles) x 2 x Total Trip Numbers (trips/yr)

PTE of PM/PM10 (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors (lbs/mile) x 1 tons/ 2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Unpaved Roads:

The source proposed to use wet suppression to control fugitive dust emissions. The control efficiency from wet suppression is assumed to be 80

$$\text{PTE of PM after Control} = 100 \text{ tons/yr} \times (1-80\%) = 20.0 \text{ tons/yr}$$

$$\text{PTE of PM10 after Control} = 27.0 \text{ tons/yr} \times (1-80\%) = 5.40 \text{ tons/yr}$$

Appendix A: Emission Calculations
Fugitive Emissions From Paved Roads

Company Name: Liberty Landfill, Inc.
Address: 8635 East State Road 16, Monticello, Indiana 47960
SPM: 181-23367-00035
Reviewer: ERG/ST
Date: January 7, 2008

1. Emission Factors: AP-42

According to AP-42, Chapter 13.2.1 - Paved Roads (12/03), the PM/PM10 emission factors for paved roads can be estimated from the following equation:

$$E = (k \times (sL/2)^a \times (w/3)^b - C) \times (1 - p/(4 \times 365))$$

where:

E = emission factor (lb/vehicle mile traveled)
 sL = road surface silt loading (g/m²) = 7.4 (g/m²) (AP-42, Table 13.2.1-4)
 w = mean vehicle weight (tons) = 24.5 tons
 k = empirical constant = 0.082 for PM and 0.016 for PM10
 a = empirical constant = 0.65
 b = empirical constant = 1.5
 C = emission factor for exhaust, brake and tire wear 0.00047 for PM and PM10
 p = number of days per year with 0.01 inches precipitation 112

PM Emission Factor = $(0.082 \times (7.4/2)^{0.65} \times (25.4/3)^{1.5} - 0.00047) \times (1 - 112/1460) = 4.15$ lbs/mile

PM10 Emission Factor = $(0.016 \times (7.4/2)^{0.65} \times (25.4/3)^{1.5} - 0.00047) \times (1 - 112/1460) = 0.80$ lbs/mile

Length of Paved Roads in One Direction = 0.08 miles

2. Potential to Emit (PTE) of PM/PM10 Before Control from Paved Roads:

Vehicle Type	Trucks per day	*Average Vehicle Weight (tons)	*Total Trip Number (trips/yr)	Traffic Component (%)	Component Vehicle Weight (tons)	Vehicle Mile Traveled (VMT) (miles/yr)	PTE of PM (tons/yr)	PTE of PM10 (tons/yr)
Transfer Trailer	26	29	9,500	27.1%	7.87	1,520	3.15	0.61
Fronnd End Loader	19	24	7,000	20.0%	4.80	1,120	2.32	0.45
Rear End Loader	16	24	6,000	17.1%	4.11	960	1.99	0.39
Roll-Off Container	23	26	8,500	24.3%	6.31	1,360	2.82	0.55
Dump Truck	8	16	3,000	8.57%	1.37	480	1.00	0.19
Private Vehicle	3	2.5	1,000	2.86%	0.07	160	0.33	0.06
Total	96			100%	24.5	5,600	11.6	2.25

* This information is provided by the source. The landfill operates 24 hours per day and 365 days per year.

Methodology

Average Vehicle Weight (ton) = (Weight of Unloaded Vehicles + Weight of Loaded Vehicles) / 2
 Total Trip Number (trips/yr) = Trucks per day x 365 (days/yr)
 Traffic Component (%) = Trucks per Day (by type) / Total Trucks per Day
 Component Vehicle Weight = Avg. Vehicle Weight (tons) x Traffic Component (%)
 (Note that the summation of the component vehicle weight equals the Mean Vehicle Weight.)
 VMT(miles/yr) = Length of Paved Roads in One Direction (miles) x 2 x Total Trip Numbers (trips/yr)
 PTE of PM/PM10 (tons/yr) = VMT (miles/yr) x PM/PM10 Emission Factors (lbs/mile) x 1 tons/ 2000 lbs

3. Potential to Emit (PTE) of PM/PM10 after Control from Paved Roads:

The source proposed to use sweeping and wet suppression to control fugitive dust emissions. The control efficiency from sweeping and wet suppression

PTE of PM after Control = 11.6 tons/yr x (1-80%) = 2.32 tons/yr

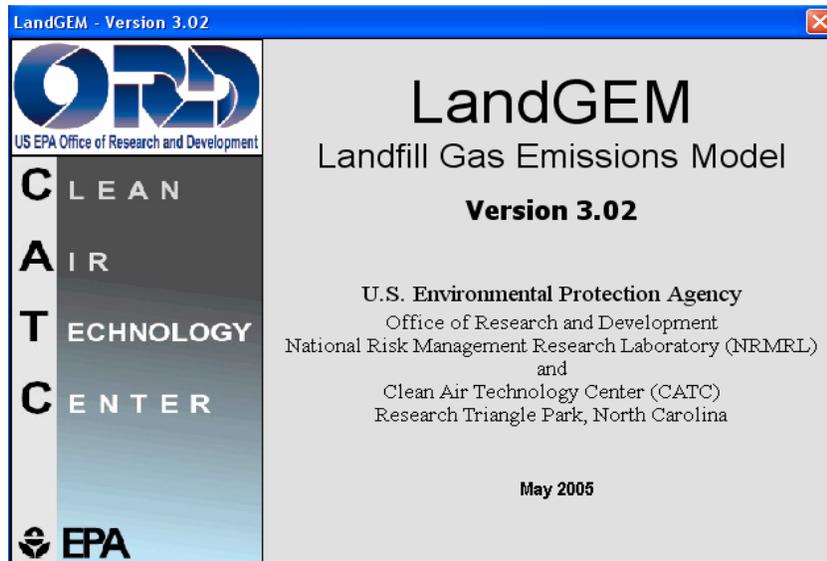
PTE of PM10 after Control = 2.25 tons/yr x (1-80%) = 0.45 tons/yr

Appendix A: Emission Calculations
Summary

Company Name: Liberty Landfill, Inc.
Address: 8635 East State Road 16, Monticello, Indiana 47960
SPM: 181-23367-00035
Reviewer: ERG/ST
Date: January 7, 2008

Emission Unit	Potential to Emit (tons/year)								
	PM	PM10	SO ₂	NO _x	CO	VOC	Single HAP (hydrogen chloride)	Single HAP (toluene)	Total HAPs
Landfill and Roads (fugitive)	22.3	5.85	--	--	4.11	21.2	0.0	3.86	10.2
EG1 - EG4	7.75	7.75	2.55	40.3	75.8	1.37	2.75	0.44	3.78
FL2	3.04	3.04	2.83	11.0	60.1	0.53			
Totals	33.1	16.6	5.38	51.3	140	23.1	2.75	4.30	13.9

Liberty Landfill is not in one of the 28 source categories. Fugitive emissions of PM, PM10, CO, VOC, and HAP from the landfill are not counted towards Part 70 applicability. Fugitive emissions are not counted towards applicability of PSD and Emission Offset.



Summary Report

Landfill Name or Identifier: Liberty Landfill Expansion

Date: Monday, March 17, 2008

Description/Comments:

About LandGEM:

First-Order Decomposition Rate Equation:

$$Q_{CH_4} = \sum_{i=1}^n \sum_{j=0.1}^1 kL_o \left(\frac{M_i}{10} \right) e^{-kt_{ij}}$$

Where,

Q_{CH_4} = annual methane generation in the year of the calculation ($m^3/year$)

i = 1-year time increment

n = (year of the calculation) - (initial year of waste acceptance)

j = 0.1-year time increment

k = methane generation rate ($year^{-1}$)

L_o = potential methane generation capacity (m^3/Mg)

M_i = mass of waste accepted in the i^{th} year (Mg)

t_{ij} = age of the j^{th} section of waste mass M_i accepted in the i^{th} year (*decimal years*, e.g., 3.2 years)

LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of landfilled waste in municipal solid waste (MSW) landfills. The software provides a relatively simple approach to estimating landfill gas emissions. Model defaults are based on empirical data from U.S. landfills. Field test data can also be used in place of model defaults when available. Further guidance on EPA test methods, Clean Air Act (CAA) regulations, and other guidance regarding landfill gas emissions and control technology requirements can be found at <http://www.epa.gov/ttnatw01/landfill/landflpg.html>.

LandGEM is considered a screening tool — the better the input data, the better the estimates. Often, there are limitations with the available data regarding waste quantity and composition, variation in design and operating practices over time, and changes occurring over time that impact the emissions potential. Changes to landfill operation, such as operating under wet conditions through leachate recirculation or other liquid additions, will result in generating more gas at a faster rate. Defaults for estimating emissions for this type of operation are being developed to include in LandGEM along with defaults for conventional landfills (no leachate or liquid additions) for developing emission inventories and determining CAA applicability. Refer to the Web site identified above for future updates.

Input Review

LANDFILL CHARACTERISTICS

Landfill Open Year	1982	
Landfill Closure Year (with 80-year limit)	2034	
Actual Closure Year (without limit)	2034	
Have Model Calculate Closure Year?	Yes	
Waste Design Capacity	26,512,500	<i>short tons</i>

MODEL PARAMETERS

Methane Generation Rate, k	0.027	<i>year⁻¹</i>
Potential Methane Generation Capacity, L ₀	140	<i>m³/Mg</i>
NMOC Concentration	600	<i>ppmv as hexane</i>
Methane Content	50	<i>% by volume</i>

GASES / POLLUTANTS SELECTED

Gas / Pollutant #1:	Total landfill gas
Gas / Pollutant #2:	Methane
Gas / Pollutant #3:	Carbon dioxide
Gas / Pollutant #4:	Carbon monoxide

WASTE ACCEPTANCE RATES

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
1982	8,145	8,960	0	0
1983	48,979	53,877	8,145	8,960
1984	48,979	53,877	57,125	62,837
1985	48,979	53,877	106,104	116,714
1986	48,979	53,877	155,083	170,591
1987	48,979	53,877	204,062	224,468
1988	48,979	53,877	253,041	278,345
1989	48,979	53,877	302,020	332,222
1990	48,979	53,877	350,999	386,099
1991	94,415	103,857	399,978	439,976
1992	170,992	188,091	494,394	543,833
1993	225,125	247,637	665,385	731,924
1994	368,398	405,238	890,510	979,561
1995	397,013	436,714	1,258,908	1,384,799
1996	550,372	605,409	1,655,921	1,821,513
1997	704,045	774,450	2,206,293	2,426,922
1998	599,989	659,988	2,910,338	3,201,372
1999	91,435	100,578	3,510,327	3,861,360
2000	0	0	3,601,762	3,961,938
2001	0	0	3,601,762	3,961,938
2002	129,716	142,688	3,601,762	3,961,938
2003	282,492	310,741	3,731,478	4,104,626
2004	600,593	660,652	4,013,970	4,415,367
2005	536,305	589,936	4,614,563	5,076,019
2006	527,605	580,365	5,150,868	5,665,955
2007	681,818	750,000	5,678,473	6,246,320
2008	681,818	750,000	6,360,291	6,996,320
2009	681,818	750,000	7,042,109	7,746,320
2010	681,818	750,000	7,723,927	8,496,320
2011	681,818	750,000	8,405,745	9,246,320
2012	681,818	750,000	9,087,564	9,996,320
2013	681,818	750,000	9,769,382	10,746,320
2014	681,818	750,000	10,451,200	11,496,320
2015	681,818	750,000	11,133,018	12,246,320
2016	681,818	750,000	11,814,836	12,996,320
2017	681,818	750,000	12,496,655	13,746,320
2018	681,818	750,000	13,178,473	14,496,320
2019	681,818	750,000	13,860,291	15,246,320
2020	681,818	750,000	14,542,109	15,996,320
2021	681,818	750,000	15,223,927	16,746,320

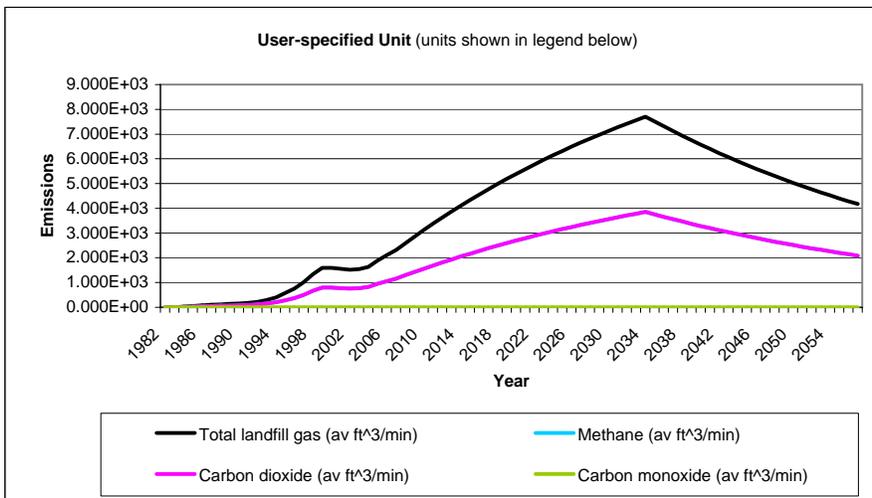
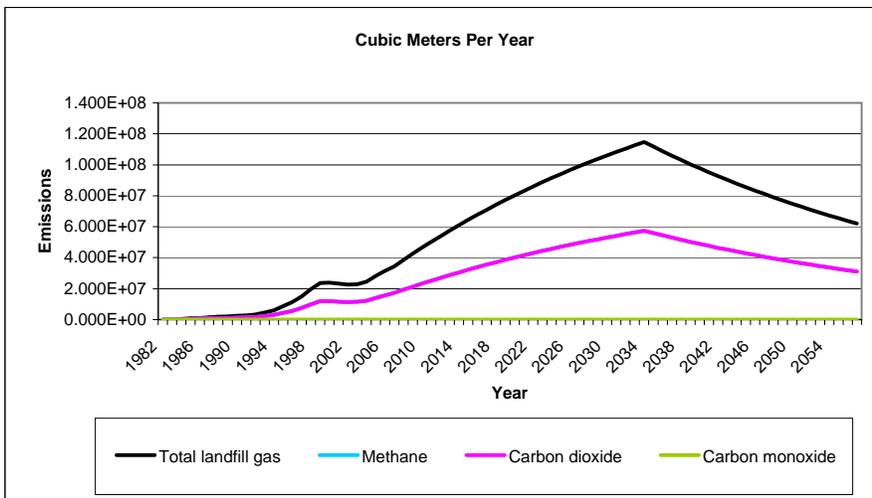
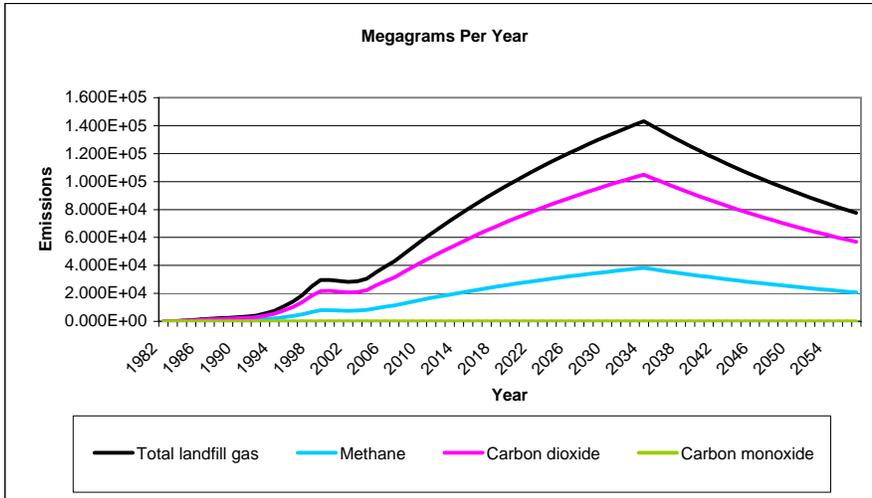
WASTE ACCEPTANCE RATES (Continued)

Year	Waste Accepted		Waste-In-Place	
	(Mg/year)	(short tons/year)	(Mg)	(short tons)
2022	681,818	750,000	15,905,745	17,496,320
2023	681,818	750,000	16,587,564	18,246,320
2024	681,818	750,000	17,269,382	18,996,320
2025	681,818	750,000	17,951,200	19,746,320
2026	681,818	750,000	18,633,018	20,496,320
2027	681,818	750,000	19,314,836	21,246,320
2028	681,818	750,000	19,996,655	21,996,320
2029	681,818	750,000	20,678,473	22,746,320
2030	681,818	750,000	21,360,291	23,496,320
2031	681,818	750,000	22,042,109	24,246,320
2032	681,818	750,000	22,723,927	24,996,320
2033	681,818	750,000	23,405,745	25,746,320
2034	14,709	16,180	24,087,564	26,496,320
2035	0	0	24,102,273	26,512,500
2036	0	0	24,102,273	26,512,500
2037	0	0	24,102,273	26,512,500
2038	0	0	24,102,273	26,512,500
2039	0	0	24,102,273	26,512,500
2040	0	0	24,102,273	26,512,500
2041	0	0	24,102,273	26,512,500
2042	0	0	24,102,273	26,512,500
2043	0	0	24,102,273	26,512,500
2044	0	0	24,102,273	26,512,500
2045	0	0	24,102,273	26,512,500
2046	0	0	24,102,273	26,512,500
2047	0	0	24,102,273	26,512,500
2048	0	0	24,102,273	26,512,500
2049	0	0	24,102,273	26,512,500
2050	0	0	24,102,273	26,512,500
2051	0	0	24,102,273	26,512,500
2052	0	0	24,102,273	26,512,500
2053	0	0	24,102,273	26,512,500
2054	0	0	24,102,273	26,512,500
2055	0	0	24,102,273	26,512,500
2056	0	0	24,102,273	26,512,500
2057	0	0	24,102,273	26,512,500
2058	0	0	24,102,273	26,512,500
2059	0	0	24,102,273	26,512,500
2060	0	0	24,102,273	26,512,500
2061	0	0	24,102,273	26,512,500

Pollutant Parameters

<i>Gas / Pollutant Default Parameters:</i>				<i>User-specified Pollutant Parameters:</i>	
	Compound	Concentration (ppmv)	Molecular Weight	Concentration (ppmv)	Molecular Weight
Gases	Total landfill gas		0.00		
	Methane		16.04		
	Carbon dioxide		44.01		
	NMOC	4,000	86.18		
Pollutants	1,1,1-Trichloroethane (methyl chloroform) - HAP	0.48	133.41		
	1,1,1,2,2-Tetrachloroethane - HAP/VOC	1.1	167.85		
	1,1-Dichloroethane (ethylidene dichloride) - HAP/VOC	2.4	98.97		
	1,1-Dichloroethene (vinylidene chloride) - HAP/VOC	0.20	96.94		
	1,2-Dichloroethane (ethylene dichloride) - HAP/VOC	0.41	98.96		
	1,2-Dichloropropane (propylene dichloride) - HAP/VOC	0.18	112.99		
	2-Propanol (isopropyl alcohol) - VOC	50	60.11		
	Acetone	7.0	58.08		
	Acrylonitrile - HAP/VOC	6.3	53.06		
	Benzene - No or Unknown Co-disposal - HAP/VOC	1.9	78.11		
	Benzene - Co-disposal - HAP/VOC	11	78.11		
	Bromodichloromethane - VOC	3.1	163.83		
	Butane - VOC	5.0	58.12		
	Carbon disulfide - HAP/VOC	0.58	76.13		
	Carbon monoxide	140	28.01		
	Carbon tetrachloride - HAP/VOC	4.0E-03	153.84		
	Carbonyl sulfide - HAP/VOC	0.49	60.07		
	Chlorobenzene - HAP/VOC	0.25	112.56		
	Chlorodifluoromethane	1.3	86.47		
	Chloroethane (ethyl chloride) - HAP/VOC	1.3	64.52		
	Chloroform - HAP/VOC	0.03	119.39		
	Chloromethane - VOC	1.2	50.49		
	Dichlorobenzene - (HAP for para isomer/VOC)	0.21	147		
	Dichlorodifluoromethane	16	120.91		
	Dichlorofluoromethane - VOC	2.6	102.92		
	Dichloromethane (methylene chloride) - HAP	14	84.94		
	Dimethyl sulfide (methyl sulfide) - VOC	7.8	62.13		
	Ethane	890	30.07		
	Ethanol - VOC	27	46.08		

Graphs



Results

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1982	0	0	0	0	0	0
1983	7.493E+01	6.000E+04	4.031E+00	2.001E+01	3.000E+04	2.016E+00
1984	5.235E+02	4.192E+05	2.817E+01	1.398E+02	2.096E+05	1.408E+01
1985	9.602E+02	7.689E+05	5.166E+01	2.565E+02	3.845E+05	2.583E+01
1986	1.385E+03	1.109E+06	7.454E+01	3.701E+02	5.547E+05	3.727E+01
1987	1.800E+03	1.441E+06	9.682E+01	4.807E+02	7.205E+05	4.841E+01
1988	2.203E+03	1.764E+06	1.185E+02	5.884E+02	8.819E+05	5.925E+01
1989	2.595E+03	2.078E+06	1.396E+02	6.932E+02	1.039E+06	6.981E+01
1990	2.977E+03	2.384E+06	1.602E+02	7.953E+02	1.192E+06	8.009E+01
1991	3.349E+03	2.682E+06	1.802E+02	8.947E+02	1.341E+06	9.010E+01
1992	4.130E+03	3.307E+06	2.222E+02	1.103E+03	1.653E+06	1.111E+02
1993	5.594E+03	4.479E+06	3.010E+02	1.494E+03	2.240E+06	1.505E+02
1994	7.517E+03	6.019E+06	4.044E+02	2.008E+03	3.010E+06	2.022E+02
1995	1.071E+04	8.574E+06	5.741E+02	2.860E+03	4.287E+06	2.881E+02
1996	1.408E+04	1.127E+07	7.574E+02	3.760E+03	5.636E+06	3.787E+02
1997	1.877E+04	1.503E+07	1.010E+03	5.014E+03	7.515E+06	5.049E+02
1998	2.475E+04	1.982E+07	1.332E+03	6.611E+03	9.910E+06	6.658E+02
1999	2.962E+04	2.372E+07	1.594E+03	7.911E+03	1.186E+07	7.968E+02
2000	2.968E+04	2.377E+07	1.597E+03	7.928E+03	1.188E+07	7.984E+02
2001	2.890E+04	2.314E+07	1.555E+03	7.719E+03	1.157E+07	7.774E+02
2002	2.814E+04	2.253E+07	1.514E+03	7.515E+03	1.126E+07	7.569E+02
2003	2.859E+04	2.289E+07	1.538E+03	7.636E+03	1.145E+07	7.690E+02
2004	3.043E+04	2.437E+07	1.637E+03	8.129E+03	1.218E+07	8.187E+02
2005	3.516E+04	2.815E+07	1.891E+03	9.390E+03	1.408E+07	9.457E+02
2006	3.916E+04	3.136E+07	2.107E+03	1.046E+04	1.568E+07	1.054E+03
2007	4.298E+04	3.442E+07	2.313E+03	1.148E+04	1.721E+07	1.156E+03
2008	4.812E+04	3.854E+07	2.589E+03	1.285E+04	1.927E+07	1.295E+03
2009	5.313E+04	4.254E+07	2.858E+03	1.419E+04	2.127E+07	1.429E+03
2010	5.800E+04	4.644E+07	3.121E+03	1.549E+04	2.322E+07	1.560E+03
2011	6.274E+04	5.024E+07	3.376E+03	1.676E+04	2.512E+07	1.688E+03
2012	6.736E+04	5.394E+07	3.624E+03	1.799E+04	2.697E+07	1.812E+03
2013	7.186E+04	5.754E+07	3.866E+03	1.919E+04	2.877E+07	1.933E+03
2014	7.624E+04	6.105E+07	4.102E+03	2.036E+04	3.052E+07	2.051E+03
2015	8.050E+04	6.446E+07	4.331E+03	2.150E+04	3.223E+07	2.166E+03
2016	8.465E+04	6.778E+07	4.554E+03	2.261E+04	3.389E+07	2.277E+03
2017	8.869E+04	7.102E+07	4.772E+03	2.369E+04	3.551E+07	2.386E+03
2018	9.263E+04	7.417E+07	4.984E+03	2.474E+04	3.709E+07	2.492E+03
2019	9.646E+04	7.724E+07	5.190E+03	2.577E+04	3.862E+07	2.595E+03
2020	1.002E+05	8.023E+07	5.390E+03	2.676E+04	4.011E+07	2.695E+03
2021	1.038E+05	8.314E+07	5.586E+03	2.773E+04	4.157E+07	2.793E+03
2022	1.074E+05	8.597E+07	5.776E+03	2.868E+04	4.298E+07	2.888E+03
2023	1.108E+05	8.872E+07	5.961E+03	2.960E+04	4.436E+07	2.981E+03
2024	1.142E+05	9.141E+07	6.142E+03	3.049E+04	4.570E+07	3.071E+03
2025	1.174E+05	9.402E+07	6.317E+03	3.136E+04	4.701E+07	3.159E+03
2026	1.206E+05	9.657E+07	6.488E+03	3.221E+04	4.828E+07	3.244E+03
2027	1.237E+05	9.905E+07	6.655E+03	3.304E+04	4.952E+07	3.327E+03
2028	1.267E+05	1.015E+08	6.817E+03	3.384E+04	5.073E+07	3.408E+03
2029	1.296E+05	1.038E+08	6.975E+03	3.463E+04	5.190E+07	3.487E+03
2030	1.325E+05	1.061E+08	7.128E+03	3.539E+04	5.305E+07	3.564E+03
2031	1.353E+05	1.083E+08	7.278E+03	3.613E+04	5.416E+07	3.639E+03

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2032	1.380E+05	1.105E+08	7.424E+03	3.686E+04	5.524E+07	3.712E+03
2033	1.406E+05	1.126E+08	7.566E+03	3.756E+04	5.630E+07	3.783E+03
2034	1.432E+05	1.147E+08	7.704E+03	3.825E+04	5.733E+07	3.852E+03
2035	1.395E+05	1.117E+08	7.508E+03	3.727E+04	5.587E+07	3.754E+03
2036	1.359E+05	1.088E+08	7.310E+03	3.629E+04	5.440E+07	3.655E+03
2037	1.323E+05	1.059E+08	7.118E+03	3.534E+04	5.297E+07	3.559E+03
2038	1.288E+05	1.031E+08	6.930E+03	3.441E+04	5.157E+07	3.465E+03
2039	1.254E+05	1.004E+08	6.748E+03	3.350E+04	5.021E+07	3.374E+03
2040	1.221E+05	9.778E+07	6.570E+03	3.262E+04	4.889E+07	3.285E+03
2041	1.189E+05	9.520E+07	6.397E+03	3.176E+04	4.760E+07	3.198E+03
2042	1.158E+05	9.269E+07	6.228E+03	3.092E+04	4.635E+07	3.114E+03
2043	1.127E+05	9.025E+07	6.064E+03	3.011E+04	4.513E+07	3.032E+03
2044	1.097E+05	8.787E+07	5.904E+03	2.931E+04	4.394E+07	2.952E+03
2045	1.068E+05	8.556E+07	5.749E+03	2.854E+04	4.278E+07	2.874E+03
2046	1.040E+05	8.331E+07	5.597E+03	2.779E+04	4.165E+07	2.799E+03
2047	1.013E+05	8.111E+07	5.450E+03	2.706E+04	4.056E+07	2.725E+03
2048	9.862E+04	7.897E+07	5.306E+03	2.634E+04	3.949E+07	2.653E+03
2049	9.603E+04	7.689E+07	5.166E+03	2.565E+04	3.845E+07	2.583E+03
2050	9.350E+04	7.487E+07	5.030E+03	2.497E+04	3.743E+07	2.515E+03
2051	9.103E+04	7.289E+07	4.898E+03	2.432E+04	3.645E+07	2.449E+03
2052	8.863E+04	7.097E+07	4.769E+03	2.368E+04	3.549E+07	2.384E+03
2053	8.630E+04	6.910E+07	4.643E+03	2.305E+04	3.455E+07	2.322E+03
2054	8.402E+04	6.728E+07	4.521E+03	2.244E+04	3.364E+07	2.260E+03
2055	8.181E+04	6.551E+07	4.402E+03	2.185E+04	3.276E+07	2.201E+03
2056	7.966E+04	6.378E+07	4.286E+03	2.128E+04	3.189E+07	2.143E+03
2057	7.756E+04	6.210E+07	4.173E+03	2.072E+04	3.105E+07	2.086E+03
2058	7.551E+04	6.047E+07	4.063E+03	2.017E+04	3.023E+07	2.031E+03
2059	7.352E+04	5.887E+07	3.956E+03	1.964E+04	2.944E+07	1.978E+03
2060	7.159E+04	5.732E+07	3.852E+03	1.912E+04	2.866E+07	1.926E+03
2061	6.970E+04	5.581E+07	3.750E+03	1.862E+04	2.791E+07	1.875E+03
2062	6.786E+04	5.434E+07	3.651E+03	1.813E+04	2.717E+07	1.826E+03
2063	6.608E+04	5.291E+07	3.555E+03	1.765E+04	2.646E+07	1.778E+03
2064	6.434E+04	5.152E+07	3.461E+03	1.718E+04	2.576E+07	1.731E+03
2065	6.264E+04	5.016E+07	3.370E+03	1.673E+04	2.508E+07	1.685E+03
2066	6.099E+04	4.884E+07	3.281E+03	1.629E+04	2.442E+07	1.641E+03
2067	5.938E+04	4.755E+07	3.195E+03	1.586E+04	2.378E+07	1.597E+03
2068	5.782E+04	4.630E+07	3.111E+03	1.544E+04	2.315E+07	1.555E+03
2069	5.630E+04	4.508E+07	3.029E+03	1.504E+04	2.254E+07	1.514E+03
2070	5.481E+04	4.389E+07	2.949E+03	1.464E+04	2.195E+07	1.475E+03
2071	5.337E+04	4.273E+07	2.871E+03	1.426E+04	2.137E+07	1.436E+03
2072	5.196E+04	4.161E+07	2.796E+03	1.388E+04	2.080E+07	1.398E+03
2073	5.059E+04	4.051E+07	2.722E+03	1.351E+04	2.026E+07	1.361E+03
2074	4.926E+04	3.945E+07	2.650E+03	1.316E+04	1.972E+07	1.325E+03
2075	4.796E+04	3.841E+07	2.580E+03	1.281E+04	1.920E+07	1.290E+03
2076	4.670E+04	3.739E+07	2.512E+03	1.247E+04	1.870E+07	1.256E+03
2077	4.547E+04	3.641E+07	2.446E+03	1.215E+04	1.820E+07	1.223E+03
2078	4.427E+04	3.545E+07	2.382E+03	1.183E+04	1.772E+07	1.191E+03
2079	4.310E+04	3.452E+07	2.319E+03	1.151E+04	1.726E+07	1.160E+03
2080	4.197E+04	3.361E+07	2.258E+03	1.121E+04	1.680E+07	1.129E+03
2081	4.086E+04	3.272E+07	2.199E+03	1.091E+04	1.636E+07	1.099E+03
2082	3.979E+04	3.186E+07	2.141E+03	1.063E+04	1.593E+07	1.070E+03

Results (Continued)

Year	Total landfill gas			Methane		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2083	3.874E+04	3.102E+07	2.084E+03	1.035E+04	1.551E+07	1.042E+03
2084	3.772E+04	3.020E+07	2.029E+03	1.007E+04	1.510E+07	1.015E+03
2085	3.672E+04	2.941E+07	1.976E+03	9.809E+03	1.470E+07	9.879E+02
2086	3.576E+04	2.863E+07	1.924E+03	9.551E+03	1.432E+07	9.619E+02
2087	3.481E+04	2.788E+07	1.873E+03	9.299E+03	1.394E+07	9.365E+02
2088	3.390E+04	2.714E+07	1.824E+03	9.054E+03	1.357E+07	9.119E+02
2089	3.300E+04	2.643E+07	1.776E+03	8.816E+03	1.321E+07	8.878E+02
2090	3.213E+04	2.573E+07	1.729E+03	8.583E+03	1.287E+07	8.644E+02
2091	3.129E+04	2.505E+07	1.683E+03	8.357E+03	1.253E+07	8.417E+02
2092	3.046E+04	2.439E+07	1.639E+03	8.137E+03	1.220E+07	8.195E+02
2093	2.966E+04	2.375E+07	1.596E+03	7.923E+03	1.188E+07	7.979E+02
2094	2.888E+04	2.312E+07	1.554E+03	7.714E+03	1.156E+07	7.769E+02
2095	2.812E+04	2.252E+07	1.513E+03	7.511E+03	1.126E+07	7.564E+02
2096	2.738E+04	2.192E+07	1.473E+03	7.313E+03	1.096E+07	7.365E+02
2097	2.666E+04	2.134E+07	1.434E+03	7.120E+03	1.067E+07	7.171E+02
2098	2.595E+04	2.078E+07	1.396E+03	6.933E+03	1.039E+07	6.982E+02
2099	2.527E+04	2.023E+07	1.360E+03	6.750E+03	1.012E+07	6.798E+02
2100	2.460E+04	1.970E+07	1.324E+03	6.572E+03	9.851E+06	6.619E+02
2101	2.396E+04	1.918E+07	1.289E+03	6.399E+03	9.591E+06	6.444E+02
2102	2.332E+04	1.868E+07	1.255E+03	6.230E+03	9.339E+06	6.275E+02
2103	2.271E+04	1.819E+07	1.222E+03	6.066E+03	9.093E+06	6.109E+02
2104	2.211E+04	1.771E+07	1.190E+03	5.906E+03	8.853E+06	5.948E+02
2105	2.153E+04	1.724E+07	1.158E+03	5.751E+03	8.620E+06	5.792E+02
2106	2.096E+04	1.679E+07	1.128E+03	5.599E+03	8.393E+06	5.639E+02
2107	2.041E+04	1.634E+07	1.098E+03	5.452E+03	8.172E+06	5.490E+02
2108	1.987E+04	1.591E+07	1.069E+03	5.308E+03	7.956E+06	5.346E+02
2109	1.935E+04	1.549E+07	1.041E+03	5.168E+03	7.747E+06	5.205E+02
2110	1.884E+04	1.509E+07	1.014E+03	5.032E+03	7.543E+06	5.068E+02
2111	1.834E+04	1.469E+07	9.869E+02	4.899E+03	7.344E+06	4.934E+02
2112	1.786E+04	1.430E+07	9.609E+02	4.770E+03	7.150E+06	4.804E+02
2113	1.739E+04	1.392E+07	9.355E+02	4.645E+03	6.962E+06	4.678E+02
2114	1.693E+04	1.356E+07	9.109E+02	4.522E+03	6.779E+06	4.555E+02
2115	1.648E+04	1.320E+07	8.869E+02	4.403E+03	6.600E+06	4.435E+02
2116	1.605E+04	1.285E+07	8.635E+02	4.287E+03	6.426E+06	4.318E+02
2117	1.563E+04	1.251E+07	8.408E+02	4.174E+03	6.257E+06	4.204E+02
2118	1.522E+04	1.218E+07	8.186E+02	4.064E+03	6.092E+06	4.093E+02
2119	1.481E+04	1.186E+07	7.971E+02	3.957E+03	5.931E+06	3.985E+02
2120	1.442E+04	1.155E+07	7.761E+02	3.853E+03	5.775E+06	3.880E+02
2121	1.404E+04	1.125E+07	7.556E+02	3.751E+03	5.623E+06	3.778E+02
2122	1.367E+04	1.095E+07	7.357E+02	3.653E+03	5.475E+06	3.679E+02

Results (Continued)

Year	Carbon dioxide			Carbon monoxide		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
1982	0	0	0	0	0	0
1983	5.491E+01	3.000E+04	2.016E+00	9.786E-03	8.400E+00	5.644E-04
1984	3.837E+02	2.096E+05	1.408E+01	6.837E-02	5.869E+01	3.943E-03
1985	7.037E+02	3.845E+05	2.583E+01	1.254E-01	1.076E+02	7.233E-03
1986	1.015E+03	5.547E+05	3.727E+01	1.810E-01	1.553E+02	1.044E-02
1987	1.319E+03	7.205E+05	4.841E+01	2.350E-01	2.017E+02	1.355E-02
1988	1.614E+03	8.819E+05	5.925E+01	2.877E-01	2.469E+02	1.659E-02
1989	1.902E+03	1.039E+06	6.981E+01	3.389E-01	2.909E+02	1.955E-02
1990	2.182E+03	1.192E+06	8.009E+01	3.889E-01	3.338E+02	2.243E-02
1991	2.455E+03	1.341E+06	9.010E+01	4.374E-01	3.755E+02	2.523E-02
1992	3.027E+03	1.653E+06	1.111E+02	5.394E-01	4.630E+02	3.111E-02
1993	4.100E+03	2.240E+06	1.505E+02	7.306E-01	6.271E+02	4.213E-02
1994	5.509E+03	3.010E+06	2.022E+02	9.818E-01	8.427E+02	5.662E-02
1995	7.848E+03	4.287E+06	2.881E+02	1.399E+00	1.200E+03	8.066E-02
1996	1.032E+04	5.636E+06	3.787E+02	1.839E+00	1.578E+03	1.060E-01
1997	1.376E+04	7.515E+06	5.049E+02	2.451E+00	2.104E+03	1.414E-01
1998	1.814E+04	9.910E+06	6.658E+02	3.233E+00	2.775E+03	1.864E-01
1999	2.171E+04	1.186E+07	7.968E+02	3.868E+00	3.320E+03	2.231E-01
2000	2.175E+04	1.188E+07	7.984E+02	3.876E+00	3.327E+03	2.236E-01
2001	2.118E+04	1.157E+07	7.774E+02	3.774E+00	3.240E+03	2.177E-01
2002	2.062E+04	1.126E+07	7.569E+02	3.675E+00	3.154E+03	2.119E-01
2003	2.095E+04	1.145E+07	7.690E+02	3.734E+00	3.205E+03	2.153E-01
2004	2.230E+04	1.218E+07	8.187E+02	3.975E+00	3.412E+03	2.292E-01
2005	2.577E+04	1.408E+07	9.457E+02	4.591E+00	3.941E+03	2.648E-01
2006	2.870E+04	1.568E+07	1.054E+03	5.115E+00	4.390E+03	2.950E-01
2007	3.150E+04	1.721E+07	1.156E+03	5.614E+00	4.819E+03	3.238E-01
2008	3.527E+04	1.927E+07	1.295E+03	6.285E+00	5.395E+03	3.625E-01
2009	3.894E+04	2.127E+07	1.429E+03	6.939E+00	5.956E+03	4.002E-01
2010	4.251E+04	2.322E+07	1.560E+03	7.575E+00	6.502E+03	4.369E-01
2011	4.598E+04	2.512E+07	1.688E+03	8.195E+00	7.034E+03	4.726E-01
2012	4.937E+04	2.697E+07	1.812E+03	8.798E+00	7.552E+03	5.074E-01
2013	5.266E+04	2.877E+07	1.933E+03	9.385E+00	8.056E+03	5.413E-01
2014	5.587E+04	3.052E+07	2.051E+03	9.957E+00	8.547E+03	5.742E-01
2015	5.900E+04	3.223E+07	2.166E+03	1.051E+01	9.025E+03	6.064E-01
2016	6.204E+04	3.389E+07	2.277E+03	1.106E+01	9.490E+03	6.376E-01
2017	6.500E+04	3.551E+07	2.386E+03	1.158E+01	9.943E+03	6.681E-01
2018	6.789E+04	3.709E+07	2.492E+03	1.210E+01	1.038E+04	6.977E-01
2019	7.069E+04	3.862E+07	2.595E+03	1.260E+01	1.081E+04	7.266E-01
2020	7.343E+04	4.011E+07	2.695E+03	1.309E+01	1.123E+04	7.547E-01
2021	7.609E+04	4.157E+07	2.793E+03	1.356E+01	1.164E+04	7.820E-01
2022	7.868E+04	4.298E+07	2.888E+03	1.402E+01	1.204E+04	8.087E-01
2023	8.121E+04	4.436E+07	2.981E+03	1.447E+01	1.242E+04	8.346E-01
2024	8.366E+04	4.570E+07	3.071E+03	1.491E+01	1.280E+04	8.598E-01
2025	8.605E+04	4.701E+07	3.159E+03	1.534E+01	1.316E+04	8.844E-01
2026	8.838E+04	4.828E+07	3.244E+03	1.575E+01	1.352E+04	9.084E-01
2027	9.065E+04	4.952E+07	3.327E+03	1.615E+01	1.387E+04	9.317E-01
2028	9.286E+04	5.073E+07	3.408E+03	1.655E+01	1.420E+04	9.544E-01
2029	9.501E+04	5.190E+07	3.487E+03	1.693E+01	1.453E+04	9.765E-01
2030	9.710E+04	5.305E+07	3.564E+03	1.730E+01	1.485E+04	9.980E-01
2031	9.914E+04	5.416E+07	3.639E+03	1.767E+01	1.517E+04	1.019E+00

Results (Continued)

Year	Carbon dioxide			Carbon monoxide		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2032	1.011E+05	5.524E+07	3.712E+03	1.802E+01	1.547E+04	1.039E+00
2033	1.031E+05	5.630E+07	3.783E+03	1.837E+01	1.576E+04	1.059E+00
2034	1.049E+05	5.733E+07	3.852E+03	1.870E+01	1.605E+04	1.079E+00
2035	1.023E+05	5.587E+07	3.754E+03	1.823E+01	1.564E+04	1.051E+00
2036	9.958E+04	5.440E+07	3.655E+03	1.775E+01	1.523E+04	1.023E+00
2037	9.696E+04	5.297E+07	3.559E+03	1.728E+01	1.483E+04	9.965E-01
2038	9.440E+04	5.157E+07	3.465E+03	1.682E+01	1.444E+04	9.702E-01
2039	9.191E+04	5.021E+07	3.374E+03	1.638E+01	1.406E+04	9.447E-01
2040	8.949E+04	4.889E+07	3.285E+03	1.595E+01	1.369E+04	9.198E-01
2041	8.713E+04	4.760E+07	3.198E+03	1.553E+01	1.333E+04	8.955E-01
2042	8.484E+04	4.635E+07	3.114E+03	1.512E+01	1.298E+04	8.719E-01
2043	8.260E+04	4.513E+07	3.032E+03	1.472E+01	1.264E+04	8.490E-01
2044	8.043E+04	4.394E+07	2.952E+03	1.433E+01	1.230E+04	8.266E-01
2045	7.831E+04	4.278E+07	2.874E+03	1.395E+01	1.198E+04	8.048E-01
2046	7.625E+04	4.165E+07	2.799E+03	1.359E+01	1.166E+04	7.836E-01
2047	7.424E+04	4.056E+07	2.725E+03	1.323E+01	1.136E+04	7.630E-01
2048	7.228E+04	3.949E+07	2.653E+03	1.288E+01	1.106E+04	7.429E-01
2049	7.038E+04	3.845E+07	2.583E+03	1.254E+01	1.076E+04	7.233E-01
2050	6.852E+04	3.743E+07	2.515E+03	1.221E+01	1.048E+04	7.042E-01
2051	6.672E+04	3.645E+07	2.449E+03	1.189E+01	1.021E+04	6.857E-01
2052	6.496E+04	3.549E+07	2.384E+03	1.158E+01	9.936E+03	6.676E-01
2053	6.325E+04	3.455E+07	2.322E+03	1.127E+01	9.675E+03	6.500E-01
2054	6.158E+04	3.364E+07	2.260E+03	1.097E+01	9.420E+03	6.329E-01
2055	5.996E+04	3.276E+07	2.201E+03	1.068E+01	9.171E+03	6.162E-01
2056	5.838E+04	3.189E+07	2.143E+03	1.040E+01	8.930E+03	6.000E-01
2057	5.684E+04	3.105E+07	2.086E+03	1.013E+01	8.695E+03	5.842E-01
2058	5.534E+04	3.023E+07	2.031E+03	9.862E+00	8.465E+03	5.688E-01
2059	5.388E+04	2.944E+07	1.978E+03	9.603E+00	8.242E+03	5.538E-01
2060	5.247E+04	2.866E+07	1.926E+03	9.350E+00	8.025E+03	5.392E-01
2061	5.108E+04	2.791E+07	1.875E+03	9.103E+00	7.814E+03	5.250E-01
2062	4.974E+04	2.717E+07	1.826E+03	8.863E+00	7.608E+03	5.112E-01
2063	4.843E+04	2.646E+07	1.778E+03	8.630E+00	7.408E+03	4.977E-01
2064	4.715E+04	2.576E+07	1.731E+03	8.403E+00	7.212E+03	4.846E-01
2065	4.591E+04	2.508E+07	1.685E+03	8.181E+00	7.022E+03	4.718E-01
2066	4.470E+04	2.442E+07	1.641E+03	7.966E+00	6.837E+03	4.594E-01
2067	4.352E+04	2.378E+07	1.597E+03	7.756E+00	6.657E+03	4.473E-01
2068	4.237E+04	2.315E+07	1.555E+03	7.551E+00	6.482E+03	4.355E-01
2069	4.126E+04	2.254E+07	1.514E+03	7.352E+00	6.311E+03	4.240E-01
2070	4.017E+04	2.195E+07	1.475E+03	7.159E+00	6.145E+03	4.129E-01
2071	3.911E+04	2.137E+07	1.436E+03	6.970E+00	5.983E+03	4.020E-01
2072	3.808E+04	2.080E+07	1.398E+03	6.786E+00	5.825E+03	3.914E-01
2073	3.708E+04	2.026E+07	1.361E+03	6.608E+00	5.672E+03	3.811E-01
2074	3.610E+04	1.972E+07	1.325E+03	6.434E+00	5.522E+03	3.710E-01
2075	3.515E+04	1.920E+07	1.290E+03	6.264E+00	5.377E+03	3.613E-01
2076	3.422E+04	1.870E+07	1.256E+03	6.099E+00	5.235E+03	3.517E-01
2077	3.332E+04	1.820E+07	1.223E+03	5.938E+00	5.097E+03	3.425E-01
2078	3.245E+04	1.772E+07	1.191E+03	5.782E+00	4.963E+03	3.335E-01
2079	3.159E+04	1.726E+07	1.160E+03	5.630E+00	4.832E+03	3.247E-01
2080	3.076E+04	1.680E+07	1.129E+03	5.481E+00	4.705E+03	3.161E-01
2081	2.995E+04	1.636E+07	1.099E+03	5.337E+00	4.581E+03	3.078E-01
2082	2.916E+04	1.593E+07	1.070E+03	5.196E+00	4.460E+03	2.997E-01

Results (Continued)

Year	Carbon dioxide			Carbon monoxide		
	(Mg/year)	(m ³ /year)	(av ft ³ /min)	(Mg/year)	(m ³ /year)	(av ft ³ /min)
2083	2.839E+04	1.551E+07	1.042E+03	5.059E+00	4.343E+03	2.918E-01
2084	2.764E+04	1.510E+07	1.015E+03	4.926E+00	4.228E+03	2.841E-01
2085	2.691E+04	1.470E+07	9.879E+02	4.796E+00	4.117E+03	2.766E-01
2086	2.621E+04	1.432E+07	9.619E+02	4.670E+00	4.008E+03	2.693E-01
2087	2.551E+04	1.394E+07	9.365E+02	4.547E+00	3.903E+03	2.622E-01
2088	2.484E+04	1.357E+07	9.119E+02	4.427E+00	3.800E+03	2.553E-01
2089	2.419E+04	1.321E+07	8.878E+02	4.310E+00	3.700E+03	2.486E-01
2090	2.355E+04	1.287E+07	8.644E+02	4.197E+00	3.602E+03	2.420E-01
2091	2.293E+04	1.253E+07	8.417E+02	4.086E+00	3.507E+03	2.357E-01
2092	2.233E+04	1.220E+07	8.195E+02	3.979E+00	3.415E+03	2.295E-01
2093	2.174E+04	1.188E+07	7.979E+02	3.874E+00	3.325E+03	2.234E-01
2094	2.117E+04	1.156E+07	7.769E+02	3.772E+00	3.237E+03	2.175E-01
2095	2.061E+04	1.126E+07	7.564E+02	3.672E+00	3.152E+03	2.118E-01
2096	2.006E+04	1.096E+07	7.365E+02	3.576E+00	3.069E+03	2.062E-01
2097	1.954E+04	1.067E+07	7.171E+02	3.481E+00	2.988E+03	2.008E-01
2098	1.902E+04	1.039E+07	6.982E+02	3.390E+00	2.910E+03	1.955E-01
2099	1.852E+04	1.012E+07	6.798E+02	3.300E+00	2.833E+03	1.903E-01
2100	1.803E+04	9.851E+06	6.619E+02	3.213E+00	2.758E+03	1.853E-01
2101	1.756E+04	9.591E+06	6.444E+02	3.129E+00	2.686E+03	1.804E-01
2102	1.709E+04	9.339E+06	6.275E+02	3.046E+00	2.615E+03	1.757E-01
2103	1.664E+04	9.093E+06	6.109E+02	2.966E+00	2.546E+03	1.711E-01
2104	1.621E+04	8.853E+06	5.948E+02	2.888E+00	2.479E+03	1.666E-01
2105	1.578E+04	8.620E+06	5.792E+02	2.812E+00	2.414E+03	1.622E-01
2106	1.536E+04	8.393E+06	5.639E+02	2.738E+00	2.350E+03	1.579E-01
2107	1.496E+04	8.172E+06	5.490E+02	2.666E+00	2.288E+03	1.537E-01
2108	1.456E+04	7.956E+06	5.346E+02	2.595E+00	2.228E+03	1.497E-01
2109	1.418E+04	7.747E+06	5.205E+02	2.527E+00	2.169E+03	1.457E-01
2110	1.381E+04	7.543E+06	5.068E+02	2.460E+00	2.112E+03	1.419E-01
2111	1.344E+04	7.344E+06	4.934E+02	2.396E+00	2.056E+03	1.382E-01
2112	1.309E+04	7.150E+06	4.804E+02	2.332E+00	2.002E+03	1.345E-01
2113	1.274E+04	6.962E+06	4.678E+02	2.271E+00	1.949E+03	1.310E-01
2114	1.241E+04	6.779E+06	4.555E+02	2.211E+00	1.898E+03	1.275E-01
2115	1.208E+04	6.600E+06	4.435E+02	2.153E+00	1.848E+03	1.242E-01
2116	1.176E+04	6.426E+06	4.318E+02	2.096E+00	1.799E+03	1.209E-01
2117	1.145E+04	6.257E+06	4.204E+02	2.041E+00	1.752E+03	1.177E-01
2118	1.115E+04	6.092E+06	4.093E+02	1.987E+00	1.706E+03	1.146E-01
2119	1.086E+04	5.931E+06	3.985E+02	1.935E+00	1.661E+03	1.116E-01
2120	1.057E+04	5.775E+06	3.880E+02	1.884E+00	1.617E+03	1.086E-01
2121	1.029E+04	5.623E+06	3.778E+02	1.834E+00	1.574E+03	1.058E-01
2122	1.002E+04	5.475E+06	3.679E+02	1.786E+00	1.533E+03	1.030E-01