



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

TO: Interested Parties / Applicant

DATE: October 22, 2009

RE: Munster Landfill / 089-28417-00412

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

Notice of Decision: Approval - Registration

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 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires 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 of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar 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.

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.

Enclosures
FN-REGIS.dot 1/2/08



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Re-REGISTRATION OFFICE OF AIR QUALITY

Munster Landfill
9351 Calumet Ave.
Munster, Indiana 46321

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. R089-28417-00412	
Issued by:  Alfred C. Dumaul, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: October 22, 2009

SECTION A

SOURCE SUMMARY

This registration 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 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant 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 Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary solid waste landfill

Source Address:	9351 Calumet Ave, Munster, IN 46321
Mailing Address:	Munster Town Hall, 1005 Ridge Road, Munster, IN 46321
General Source Phone Number:	(219) 836-6995
SIC Code:	4953
County Location:	Lake County
Source Location Status:	Nonattainment for 8-hour ozone standard Nonattainment for PM 2.5 standard Attainment for all other criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

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

- (a) One (1) landfill gas recovery system with control equipment open flare, permitted in 1994, with the capacity to collect and combust fifty (50) scfm of landfill gas.
- (b) Two (2) landfill gas-fired microturbines, identified as TB-1 and TB-2, approved for construction in 2009, with a maximum capacity of 0.84 MMBtu/hr, each, and exhausting to stacks TBS-1 and TBS-2, respectively.

SECTION B

GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration 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 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 089-28417-00412 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

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

- (c) The notification 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.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), an application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 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 registration:

- (a) Opacity shall not exceed an average of twenty percent (20%) 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.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant 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).

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Department of Public Works, Town of Munster
Address:	9351 Calumet Ave.
City:	Munster, IN 46321
Phone Number:	(219) 836-6995
Registration No.:	R089-28417-00412

I hereby certify that Munster Landfill is :

- still in operation.
- no longer in operation.
- in compliance with the requirements of Registration No. 089-28417-00412.
- not in compliance with the requirements of Registration No. 089-28417-00412.

I hereby certify that Munster Landfill is :

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

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

Technical Support Document (TSD) for a Re-Registration

Source Description and Location
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Source Name:	Munster Landfill
Source Location:	9351 Calumet Ave, Munster, IN 46321
County:	Lake
SIC Code:	4953
Registration No.:	R089-28417-00412
Permit Reviewer:	Summer Keown

On August 31, 2009, the Office of Air Quality (OAQ) received an application from Munster Landfill related to the operation of an existing solid waste landfill.

Existing Approvals

The source has been operating under Registration No. R089-3732-00412, issued on July 12, 1994.

County Attainment Status

The source is located in Lake County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Attainment effective February 18, 2000, for the part of the city of East Chicago bounded by Columbus Drive on the north; the Indiana Harbor Canal on the west; 148 th Street, if extended, on the south; and Euclid Avenue on the east. Unclassifiable or attainment effective November 15, 1990, for the remainder of East Chicago and Lake County.
O ₃	Nonattainment Subpart 2 Moderate effective June 15, 2004, for the 8-hour ozone standard. ¹
PM ₁₀	Attainment effective March 11, 2003, for the cities of East Chicago, Hammond, Whiting, and Gary. Unclassifiable effective November 15, 1990, for the remainder of Lake County.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.

¹Nonattainment Severe 17 effective November 15, 1990, for the Chicago-Gary-Lake County area for the 1-hour ozone standard which was revoked effective June 15, 2005.
Basic nonattainment designation effective federally April 5, 2005, for PM_{2.5}.

(a) Ozone Standards

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.

(i) 1-hour ozone standard

On December 22, 2006 the United States Court of Appeals, District of Columbia issued a decision which served to partially vacate and remand the U.S. EPA's final rule for implementation of the eight-hour National Ambient Air quality Standard for ozone. *South Coast Air Quality Mgmt. Dist. v. EPA*, 472 F.3d 882 (D.C. Cir., December 22, 2006),

rehearing denied 2007 U.S. App. LEXIS 13748 (D.C. Cir., June 8, 2007). The U.S. EPA has instructed IDEM to issue permits in accordance with its interpretation of the *South Coast* decision as follows: Gary-Lake-Porter County was previously designated as a severe non-attainment area prior to revocation of the one-hour ozone standard, therefore, pursuant to the anti-backsliding provisions of the Clean Air Act, any new or existing source must be subject to the major source applicability cut-offs and offset ratios under the area's previous one-hour standard designation. This means that a source must achieve the Lowest Achievable Emission Rate (LAER) if it exceeds 25 tons per year of VOC emissions and must offset any increase in VOC emissions by a decrease of 1.3 times that amount.

On January 26, 1996 in 40 CFR 52.777(i), the U.S. EPA granted a waiver of the requirements of Section 182(f) of the CAA for Lake and Porter Counties, including the lower NOx threshold for nonattainment new source review. Therefore, VOC emissions alone are considered when evaluating the rule applicability relating to the 1-hour ozone standards. Therefore, VOC emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability for the source section.

(ii) 8-hour ozone standard

VOC and NOx emissions are considered when evaluating the rule applicability relating to the 8-hour ozone standard. Lake County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability – Entire Source section.

(b) PM2.5

U.S. EPA, in the Federal Register Notice 70 FR 943 dated January 5, 2005, has designated Lake County, excepting the cities of East Chicago, Hammond, Whiting, and Gary, as nonattainment for PM2.5. On March 7, 2005 the Indiana Attorney General's Office, on behalf of IDEM, filed a law suit with the Court of Appeals for the District of Columbia Circuit challenging U.S. EPA's designation of nonattainment areas without sufficient data. However, in order to ensure that sources are not potentially liable for a violation of the Clean Air Act, the OAQ is following the U.S. EPA's New Source Review Rule for PM2.5 promulgated on May 8, 2008, and effective on July 15, 2008. Therefore, direct PM2.5 and SO2 emissions were reviewed pursuant to the requirements of Nonattainment New Source Review, 326 IAC 2-1.1-5. See the State Rule Applicability – Entire Source section.

(c) Other Criteria Pollutants

Lake County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.5 (Registrations) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by from Munster Landfill on August 31, 2009, relating to the operation of an existing solid waste landfill. The landfill, with a maximum capacity of 1,979,408 Mg, stopped receiving waste in 2004.

The source consists of the following existing emission units:

- (a) One (1) landfill gas recovery system with control equipment open flare, permitted in 1994, with the capacity to collect and combust fifty (50) scfm of landfill gas.

The following is a list of the new emission units:

- (b) Two (2) landfill gas-fired microturbines, identified as TB-1 and TB-2, approved for construction in 2009, with a maximum capacity of 0.84 MMBtu/hr, each, and exhausting to stacks TBS-1 and TBS-2, respectively.

Enforcement Issues

Munster Landfill was issued a Registration No. R089-3732-00412 on July 12, 1994, for a landfill gas recovery system. Pursuant to 326 IAC 2-5.5-2(b), the source was required to apply for a Re-Registration by December 25, 1999. On August 31, 2009, IDEM, OAQ received an application from the Department of Public Works, Town of Munster. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the operating permit rules.

Emission Calculations

See Appendix A, pages 1 through 5, of this TSD for detailed emission calculations.

Permit Level Determination –Registration

The following table reflects the unlimited potential to emit (PTE) of the entire source before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)								
	PM	PM10 *	PM2.5	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Flare	0.91	0.91	0.91	0.86	2.15	0.05	40.33	negl.	negl.
Microturbines	0.16	0.16	0.16	0.06	0.13	0.03	1.14	negl.	negl.
Fugitive Emissions	0.00	0.00	0.00	0.00	0.00	1.89	0.00	1.00	0.34 (toluene)
Total	0.91	0.91	0.91	0.86	2.15	1.94	40.33	1.00	0.34 (toluene)
Exemptions Levels	5	5	5	10	10	5	25	25	10
Registration Levels	25	25	25	25	25	25	100	25	10

negl. = negligible
* Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of all criteria pollutants are within the ranges listed in 326 IAC 2-5.5-1(b)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations). A Registration will be issued.

- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit, since the landfill gas-fired microturbines, identified as TB-1 and TB-2, each have a maximum heat input capacity of less than ten (10) MMBtu per hour.
- (b) The requirements of the New Source Performance Standard for Municipal Solid Waste Landfills, 40 CFR 60, Subpart WWW (326 IAC 12) are not included in the permit, since the landfill has a total design capacity of less than 2.5 million megagrams.
- (c) The requirements of the New Source Performance Standard for Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII (326 IAC 12), are not included in the permit for the two (2) landfill gas-fired microturbines, identified as TB-1 and TB-2, because the definition of a stationary internal combustion engine, as stated in 40 CFR 60.4219, does not include combustion turbines.
- (d) The requirements of the New Source Performance Standard for Stationary Spark Ignition Internal Combustion Engines, 40 CFR 60, Subpart JJJJ (326 IAC 12) are not included in the permit, because the two (2) landfill gas-fired microturbines, identified as TB-1 and TB-2, are not stationary spark ignition (SI) internal combustion engines (ICE).
- (e) The requirements of the New Source Performance Standard for Stationary Combustion Turbines, 40 CFR 50, Subpart KKKK (326 IAC 12) are not included in the permit, because the two (2) landfill gas-fired microturbines, identified as TB-1 and TB-2, each have a maximum heat input capacity of less than 10 MMBtu per hour.
- (f) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (g) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Municipal Solid Waste Landfills, 40 CFR 63, Subpart AAAA (326 IAC 20-67), are not included in the permit, because the source does not meet the definition of a major source as defined in 40 CFR 63.2 and it has potential NMOC emissions of less than fifty (50) tons per year.
- (h) The requirements of the National Emission Standards for Hazardous Air Pollutants for Stationary Combustion Turbines, 40 CFR 63, Subpart YYYY (326 IAC 20-90), are not included in the permit because the two (2) landfill gas-fired microturbines, identified as TB-1 and TB-2, are not located at a major source of HAPs.
- (i) The requirements of the National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ (326 IAC 20-82), are not included in the permit for the two (2) landfill gas-fired microturbines, identified as TB-1 and TB-2, because the turbines are not stationary reciprocating combustion engines.
- (j) There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326

IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (i) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

- (a) 326 IAC 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
The potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is located in Lake County, it has actual emissions of NO_x and VOC of less than twenty-five (25) tons per year, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 326 IAC 5-1 (Opacity Limitations)
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:
- (1) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (2) 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.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source 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.
- (f) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5 because the source does not have potential fugitive particulate matter emissions of twenty-five (25) tons per year or more. Therefore, 326 IAC 6-5 does not apply.
- (g) 326 IAC 6.8-2 (Lake County: PM₁₀ Emission Requirements)
This source is not specifically listed in 326 IAC 6.8-2. Therefore, this rule is not applicable to the source.

- (h) 326 IAC 6.8-10 (Lake County: Fugitive Particulate Matter)
The source is not subject to the requirements of 326 IAC 6.8-10, because the source does not have potential fugitive particulate emissions greater than 5 tons per year. Therefore, 326 IAC 6.8-10 does not apply.
- (i) 326 IAC 7-1.1-2 (Sulfur Dioxide Emission Limitations)
This rule is not applicable because the potential to emit SO₂ from all facilities and from the entire source is less than twenty-five (25) tons per year.
- (j) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Each of the emission units at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.
- (k) 326 IAC 8-6-1 (Organic Solvent Emission Limitations)
The conditions of 326 IAC 8-6-1 are not applicable to the source because the potential VOC emissions are less than one hundred (100) tons per year.
- (l) 326 IAC 8-7 (Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)
The conditions of 326 IAC 8-7 are not applicable to the source because the potential VOC emissions are less than one hundred (100) tons per year.
- (m) 326 IAC 8-8.1 (Municipal Solid Waste Landfills Not Located in Clark, Floyd, Lake, and Porter Counties)
The conditions of 326 IAC 8-8.1 are not applicable to the source because the municipal solid waste landfill is located in Lake County.

Flare

- (n) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The one (1) landfill gas-fired flare is not subject to the conditions of 326 IAC 6-2 because it is not a source of indirect heating.
- (o) 326 IAC 6.8-1-2 (Particulate Matter Limitations for Lake County)
The one (1) landfill gas-fired flare is not subject to the conditions of 326 IAC 6.8-1-2 because the source does not have the potential to emit one hundred (100) tons or more or have actual emissions of ten (10) tons or more of PM per year.

Microturbines

- (p) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The two (2) landfill gas-fired microturbines are not subject to the conditions of 326 IAC 6-2 because they are not sources of indirect heating.
- (q) 326 IAC 6.8-1-2 (Particulate Matter Limitations for Lake County)
The two (2) landfill gas-fired microturbines are not subject to the conditions of 326 IAC 6.8-1-2 because the source does not have the potential to emit one hundred (100) tons or more or have actual emissions of ten (10) tons or more of PM per year.
- (r) 326 IAC 20 (Hazardous Air Pollutants)
See Federal Rule Applicability Section of this TSD.

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on August 31, 2009.

The operation of this source shall be subject to the conditions of the attached proposed Registration No. R089-28417-00412. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Summer Keown at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5175 or toll free at 1-800-451-6027 extension 4-5175.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A: Emission Summary

Company Name: Munster Landfill
Address City IN Zip: 9351 Calumet Ave, Munster, IN 46321
Permit No: 089-28417-00412
Reviewer: Summer Keown
Date: September 23, 2009

Uncontrolled Emissions

Emission Units	PM	PM10	PM2.5	SO2	VOC	CO	NOx	Single HAP	Total HAPs	NMOC
Flare*	0.91	0.91	0.91	0.86	0.05	40.33	2.15	negl.	negl.	0.12
Turbines*	0.16	0.16	0.16	0.06	0.03	1.14	0.13	negl.	negl.	negl.
Fugitive Emissions From Landfill	0.00	0.00	0.00	0.00	1.89	0.00	0.00	0.34 (toluene)	1.00	4.85
Fugitive Emissions from Paved and Unpaved Roads**	negl.	negl.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.91	0.91	0.91	0.86	1.94	40.33	2.15	0.34 (toluene)	1.00	4.97

*Landfill gas will either be directed either to the flare or to the turbines, but not both at the same time. Therefore, the highest potential emissions between the two types of units were used to calculate the total potential emissions.

**Fugitive emissions from paved and unpaved roads was determined to be negligible.

Appendix A: Emissions Calculations
Flare Emissions

Company Name: Munster Landfill
Address City IN Zip: 9351 Calumet Ave, Munster, IN 46321
Permit Number: 089-28417-00412
Reviewer: Summer Keown
Date: September 23, 2009

NMOC concentration (ppmv) = 595
 Overall average LFG methane conc. = 50%
 Landfill gas temperature = 15 °C
 Landfill gas generated = 286,819,920 cf year 2009, from LandGEM calculations
 gas system collection efficiency = 75% % AP-42 default assumption
 LFG burned = 215114940 ft3

Emission Factor (lb/ft ³ LFG)	Pollutant					
	PM10*	SO2	NOx	VOC	CO	NMOC
Potential Emission in tons/yr	8.50E-06	7.95E-06	2.00E-05	5.28E-05	3.75E-04	1.35E-04
	0.91	0.86	2.15	0.05	40.33	0.12

Emission Factors are from AP-42, Sec. 2.4, Supplement E, 1998
 Emissions calculations were submitted by the applicant and approved by IDEM.
 *PM10 is assumed to be equal to PM and PM2.5.

**Appendix A: Emissions Calculations
Landfill Gas-Fired Turbines
TB-1 and TB-2**

Company Name: Munster Landfill
Address City IN Zip: 9351 Calumet Ave, Munster, IN 46321
Permit Number: 089-28417-00412
Reviewer: Summer Keown
Date: September 23, 2009

NMOC concentration (ppmv) = 595
 Overall average LFG methane conc. = 50.00%
 Heat content of LFG = 500 BTU/cf
 Fuel flow rate, Capstone CR65 microturbine = 842,000 BTU/hr
 microturbine full electrical power output = 0.065 Mwhe
 Landfill gas temperature = 15 °C
 LFG combusted (ft3) = 14,751,840
 Total Maximum Capacity = 1.7 MMBtu/hr

Uncontrolled Potential Emissions

Emission Factor Units	Pollutant					
	PM10*	SO2	NOx*	VOC*	CO*	NMOC
	22.00	6.36E-05	0.46	0.10	4.00	2.17E-03
	lb/10 ⁶ dscf	kg/m ³ LFG	lb/Mwhe	lb/Mwhe	lb/Mwhe	kg/m ³ LFG
Potential Emission in tons/yr	0.16	0.06	0.13	0.03	1.14	0.06

*The emission factors for VOC, NOx, and CO were submitted by the applicant.

** The emission factors for NMOC, PM10, and SO2 are from AP-42, Supplement E, 1998.
 PM10 is assumed to be equal to PM and PM2.5.

Methodology

Emissions calculations were submitted by the source and verified by IDEM.

VOC (tons/year) = Emission factor (lb/Mwhe) x power output (Mwhe) x 24 hours/day x 365 days/year x 1 ton/2000 lbs

NOx (tons/year) = Emission factor (lb/Mwhe) x power output (Mwhe) x 24 hours/day x 365 days/year x 1 ton/2000 lbs

CO (tons/year) = Emission factor (lb/Mwhe) x power output (Mwhe) x 24 hours/day x 365 days/year x 1 ton/2000 lbs

PM10 (tons/year) = Emission factor (lb/10⁶ dscf) x fuel flow rate (Btu/hr)/heat content of LFG (Btu/cf) x 24 hours/day x 365 days/year x 1/1,000,000 x 2000

SO2 (tons/year) = LFG combusted (ft3) x 0.028317 x Emission factor (kg/m3 LFG) x 2.2046/2000 x 2

NMOC (tons/year) = LFG combusted (ft3) x Emission factor (kg/m3 LFG) x 0.028317 x (1-0.944) x 2.2046/2000

**Appendix A: Emissions Calculations
Landfill Gas-Fired Turbines
TB-1 and TB-2
HAPs Emissions**

Company Name: Munster Landfill
Address City IN Zip: 9351 Calumet Ave, Munster, IN 46321
Permit Number: 089-28417-00412
Reviewer: Summer Keown
Date: September 23, 2009

	HAPs			
	Benzene	Methylene Chloride	Toluene	Xylene
Emission Factor in lb/MMB	2.1E-05	2.3E-06	1.1E-04	3.1E-05
Potential Emission in tons/	1.56E-04	1.71E-05	8.19E-04	2.31E-04

Total HAPs = 1.22E-03

Methodology is the same as page 3.

Emission Factors are from AP-42, Chapter 3.1, Table 3.1-6.

Appendix A: Emissions Calculations
Estimated LFG Emissions

Company Name: Munster Landfill
Address City IN Zip: 9351 Calumet Ave, Munster, IN 46321
Permit Number: 089-28417-00412
Reviewer: Summer Keown
Date: September 23, 2009

Munster Landfill
Estimated LFG Emissions

Quantity of LFG generated (from LandGEM output) = 2.868E+08 ft ³ /yr Quantity of LFG collected = 2.15115E+08 ft ³ /yr Calculated collection efficiency of LFG collection system ⁽¹⁾ = 75.0% Assumed LFG temperature = 15 °C										
Compound	Molecular Weight ⁽²⁾	Median Concentration ⁽²⁾ (ppmv)	Landfill Emission Rate ⁽³⁾ (m ³ /yr)	Landfill Emission Rate ⁽⁴⁾ (kg/yr)	Total Landfill Emissions Before Collection (tpy)	Captured LFG Emissions (75.0% collection) (tpy)	Fugitive LFG Emissions (uncaptured) (tpy)	Flare Control Efficiency ⁽⁵⁾ (%)	Primary Flare Emissions (tpy)	Total Controlled Landfill Gas Emissions (tpy)
Criteria Pollutants										
Carbon monoxide (CO)	28.01	0	0	0	0.0	0.00	0.000	0	0.00	0.0
VOC ⁽¹⁾ (as hexane)	86.18	232.05	1,885	6,870	7.6	5.68	1.8932	99.2	0.05	1.9
Other Regulated Pollutants										
NMOC (regulated under §111 [NSPS] of CAA)	86.18	595	4,833	17,615	19.4	14.56	4.8543	99.2	0.12	5.0
Hazardous Air Pollutants (HAPs)										
1,1,1-Trichloroethane (methyl chloroform)	133.42	0.48	4	22.00	0.02	0.02	6.06E-03	98.0	3.64E-04	6.43E-03
1,1,2,2-Tetrachloroethane	167.85	1.11	9	64.00	0.07	0.05	1.76E-02	98.0	1.06E-03	1.87E-02
1,1-Dichloroethane (ethylidene dichloride)	98.95	2.35	19	79.88	0.09	0.07	2.20E-02	98.0	1.32E-03	2.33E-02
1,1-Dichloroethene (vinylidene chloride)	96.94	0.20	2	6.66	7.34E-03	5.51E-03	1.84E-03	98.0	1.10E-04	1.95E-03
1,2-Dichloroethane (ethylene dichloride)	98.96	0.41	3	13.94	0.02	0.01	3.84E-03	98.0	2.30E-04	4.07E-03
1,2-Dichloropropane (propylene dichloride)	112.98	0.18	1	6.99	7.70E-03	5.78E-03	1.93E-03	98.0	1.16E-04	2.04E-03
Acrylonitrile	53.06	6.33	51	115.38	0.13	0.10	3.18E-02	99.7	2.86E-04	3.21E-02
Carbon disulfide	76.13	0.58	5	15.17	0.02	0.01	4.18E-03	99.7	3.76E-05	4.22E-03
Carbon tetrachloride	153.84	0.004	0	0.21	2.33E-04	1.75E-04	5.83E-05	98.0	3.50E-06	6.18E-05
Carbonyl sulfide	60.07	0.49	4	10.11	0.01	0.01	2.79E-03	99.7	2.51E-05	2.81E-03
Chlorobenzene	112.56	0.25	2	9.67	0.01	0.01	2.66E-03	98.0	1.60E-04	2.82E-03
Chloroethane (ethyl chloride)	64.52	1.25	10	27.71	0.03	0.02	7.63E-03	98.0	4.58E-04	8.09E-03
Chloroform	119.39	0.03	0	1.23	1.36E-03	1.02E-03	3.39E-04	98.0	2.03E-05	3.59E-04
Dichlorobenzene ⁽⁶⁾	147.00	0.21	2	10.60	0.01	0.01	2.92E-03	98.0	1.75E-04	3.10E-03
Dichloromethane (methylene chloride)	84.94	14.30	116	417.26	0.46	0.34	1.15E-01	98.0	6.90E-03	1.22E-01
Ethyl benzene	106.16	4.61	37	168.12	0.19	0.14	4.63E-02	99.7	4.17E-04	4.67E-02
Hexane	86.18	6.57	53	194.51	0.21	0.16	5.36E-02	99.7	4.82E-04	5.41E-02
Mercury (total)	200.61	2.92E-04	0	0.02	2.22E-05	1.66E-05	5.55E-06	0	1.66E-05	2.22E-05
Methyl ethyl ketone	72.11	7.09	58	175.63	0.19	0.15	4.84E-02	99.7	4.36E-04	4.88E-02
Methyl isobutyl ketone	100.16	1.87	15	64.34	0.07	0.05	1.77E-02	99.7	1.60E-04	1.79E-02
Perchloroethylene (tetrachloroethylene)	165.83	3.73	30	212.49	0.23	0.18	5.86E-02	98.0	3.51E-03	6.21E-02
Trichloroethylene (trichloroethene)	131.38	2.82	23	127.27	0.14	0.11	3.51E-02	98.0	2.10E-03	3.72E-02
Vinyl chloride	62.5	7.34	60	157.59	0.17	0.13	4.34E-02	98.0	2.61E-03	4.60E-02
Xylenes	106.16	12.10	98	441.27	0.49	0.36	1.22E-01	99.7	1.09E-03	1.23E-01
Benzene	78.11	1.91	16	51.25	0.06	0.04	1.41E-02	99.7	1.27E-04	1.43E-02
Toluene	92.13	39.30	319	1,243.81	1.37	1.03	3.43E-01	99.7	3.08E-03	3.46E-01
Notes: 1. VOC median concentration taken from Footnote c of Table 2.4-2, AP-42 Supplement E (November 1998), for sites without co-disposal. VOC mol. weight assumed to be the same as NMOC (as hexane). 2. Values taken from Tables 2.4-1 and 2.4-2 of AP-42 Supplement E (November 1998). 3. Values calculated using Equation 3 of AP-42 Supplement E (November 1998). 4. Values calculated using Equation 4 of AP-42 Supplement E (November 1998). 5. Control efficiencies for flares as indicated in Table 2.4-3 of AP-42 Supplement E (November 1998). 6. Assumes dichlorobenzene exists in its para isomer state (the para isomer is a Title III-listed HAP).										



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
Toll Free (800) 451-6027
www.idem.IN.gov

SENT VIA U.S. MAIL: CONFIRMED DELIVERY AND SIGNATURE REQUESTED

TO: Jim Mandon
Munster Landfill
1005 Ridge Road
Munster, Indiana 46321

DATE: October 22, 2009

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Registration
089-28417-00412

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Thomas DeGuillo
Mr. Bill Paraskevas (Andrews Environmental Engineering, Inc.)
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

IDEM Staff	CDENNY 10/22/2009 Munster Landfill 089-28417-00412 (final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee	Remarks
1		Jim Mandon Munster Landfill Munster Town Hall, 1005 Ridge Rd Munster IN 46321 (Source CAATS) VIA CONFIRMED DELIVERY										
2		Thomas DeGuilio Town Mgr Munster Landfill Munster Town Hall, 1005 Ridge Munster IN 46321 (RO CAATS)										
3		Gary - Hobart Water Corp 650 Madison St, P.O. Box M486 Gary IN 46401-0486 (Affected Party)										
4		Lake County Health Department-Gary 1145 W. 5th Ave Gary IN 46402-1795 (Health Department)										
5		WJOB / WZVN Radio 6405 Olcott Ave Hammond IN 46320 (Affected Party)										
6		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party)										
7		Shawn Sobocinski 3229 E. Atlanta Court Portage IN 46368 (Affected Party)										
8		Ms. Carolyn Marsh Lake Michigan Calumet Advisory Council 1804 Oliver St Whiting IN 46394-1725 (Affected Party)										
9		Mark Coleman 9 Locust Place Ogden Dunes IN 46368 (Affected Party)										
10		Mr. Chris Hernandez Pipefitters Association, Local Union 597 8762 Louisiana St., Suite G Merrillville IN 46410 (Affected Party)										
11		Craig Hogarth 7901 West Morris Street Indianapolis IN 46231 (Affected Party)										
12		Lake County Commissioners 2293 N. Main St, Building A 3rd Floor Crown Point IN 46307 (Local Official)										
13		Anthony Copeland 2006 E. 140th Street East Chicago IN 46312 (Affected Party)										
14		Barbara G. Perez 506 Lilac Street East Chicago IN 46312 (Affected Party)										
15		Mr. Robert Garcia 3733 Parrish Avenue East Chicago IN 46312 (Affected Party)										

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Name and address of Sender		Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204		

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Karen 8212 Madison Ave Munster IN 46321-1627 (Affected Party)									
2		Calumet Township Trustee 35 E 5th Avenue Gary IN 46402 (Affected Party)									
3		Joseph Hero 11723 S Oakridge Drive St. John IN 46373 (Affected Party)									
4		Mr. Bill Paraskevas Andrews Environmental Engineering, Inc. 7478 Shadeland Station Way Indianapolis IN 46256 (Consultant)									
5		Gary City Council 401 Broadway # 209 Gary IN 46402 (Local Official)									
6											
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