



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

To: Interested Parties

Date: February 2, 2016

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

Source Name: C&F Crematory

Permit Level: Exemption

Permit Number: 093-36692-00039

Source Location: 1016 West Main Street
Mitchell, Indiana

Type of Action Taken: Initial Permit

Notice of Decision: Approval

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the matter referenced above. Pursuant to 326 IAC 2, this approval was effective immediately upon submittal of the application.

The final decision is available on the IDEM website at: <http://www.in.gov/apps/idem/caats/>
To view the document, select Search option 3, then enter permit 36692.

If you would like to request a paper copy of the permit document, please contact IDEM's central file room:

Indiana Government Center North, Room 1201
100 North Senate Avenue, MC 50-07
Indianapolis, IN 46204
Phone: 1-800-451-6027 (ext. 4-0965)
Fax (317) 232-8659

(continues on next page)

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 from 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.



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Michael R. Pence
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Elizabeth Freeman
C&F Crematory
705 West Warren Street
Mitchell, Indiana 47446

February 2, 2016

Re: Exempt Construction and Operation Status,
E093-36692-00039

Dear Ms. Freeman:

The application from C&F Crematory, received on January 07, 2016, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-1.1-3, it has been determined that the following stationary crematory for human remains located at 1016 West Main Street, Mitchell, Indiana 47446 is classified as exempt from air pollution permit requirements:

- (a) One (1) incinerator, identified as IE43-PPI, with a maximum operating capacity of 150 pounds per hour (lbs/hr), using natural gas as a supplemental fuel at a maximum heat input capacity of 3.0 million Btu per hour (MMBtu/hr), using no control.
- (b) Paved roads and parking lots. [326 IAC 6-4]

The following conditions shall be applicable:

1. Pursuant to 326 IAC 4-2-2 (Incinerators), the Permittee shall comply with the following:
 - (a) All incinerators shall comply with the following requirements:
 - (1) Consist of primary and secondary chambers or the equivalent.
 - (2) Be equipped with a primary burner unless burning only wood products.
 - (3) Comply with 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2 (Permit Review Rules).
 - (4) Be maintained, operated, and burn waste in accordance with the manufacturer's specifications or an operation and maintenance plan as specified in subsection (c).
 - (5) Not emit particulate matter in excess of one (1) of the following:
 - (A) Three-tenths (0.3) pound of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with a maximum solid waste capacity of greater than or equal to two hundred (200) pounds per hour.
 - (B) Five-tenths (0.5) pound of particulate matter per one thousand (1,000) pounds of dry exhaust gas under standard conditions corrected to fifty percent (50%) excess air for incinerators with solid waste capacity less than two hundred (200) pounds per hour.



A State that Works

- (6) If any of the requirements of subdivisions (1) through (5) are not met, then the owner or operator shall stop charging the incinerator until adjustments are made that address the underlying cause of the deviation.
 - (b) An incinerator is exempt from subsection (a)(5) if subject to a more stringent particulate matter emission limit in 40 CFR 52 Subpart P, State Implementation Plan for Indiana.
 - (c) An owner or operator developing an operation and maintenance plan pursuant to subsection (a)(4) must comply with the following:
 - (1) The operation and maintenance plan must be designed to meet the particulate matter emission limitation specified in subsection (a)(5) and include the following:
 - (A) Procedures for receiving, handling, and charging waste.
 - (B) Procedures for incinerator startup and shutdown.
 - (C) Procedures for responding to a malfunction.
 - (D) Procedures for maintaining proper combustion air supply levels.
 - (E) Procedures for operating the incinerator and associated air pollution control systems.
 - (F) Procedures for handling ash.
 - (G) A list of wastes that can be burned in the incinerator.
 - (2) Each incinerator operator shall review the plan before initial implementation of the operation and maintenance plan and annually thereafter.
 - (3) The operation and maintenance plan must be readily accessible to incinerator operators.
 - (4) The owner or operator of the incinerator shall notify the department, in writing, thirty (30) days after the operation and maintenance plan is initially developed pursuant to this section.
 - (d) The owner or operator of the incinerator must make the manufacturer's specifications or the operation and maintenance plan available to the department upon request.
2. 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 exemption:
- (1) 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.
 - (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.
3. 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 IAC 6-4.

This exemption is the first air approval issued to this source.

A copy of the Exemption is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>. For additional information about air permits and how the public and interested parties can participate, refer to the IDEM Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

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. If you have any questions on this matter, please contact Phillip Joseph, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204-2251, at 317-233-4228 or at 1-800-451-6027 (ext 3-4228).

Sincerely,



Tripurari P. Sinha, Ph. D, Section Chief
Permits Branch
Office of Air Quality

TS/PTJ

cc: File - Lawrence County
Lawrence County Health Department
Compliance and Enforcement Branch
IDEM Southeast Regional Office

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for an Exemption

Source Description and Location
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Source Name:	C&F Crematory
Source Location:	1016 West Main Street, Mitchell, Indiana 47446
County:	Lawrence
SIC Code:	7261 (Funeral Services and Crematories)
Exemption No.:	E093-36692-00039
Permit Reviewer:	Phillip Joseph

On January 07, 2016, the Office of Air Quality (OAQ) received an application from C&F Crematory related to the construction and operation of a new stationary crematory for human remains.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Lawrence County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Unclassifiable or attainment effective July 20, 2012, for the 2008 8-hour ozone standard. ¹
PM _{2.5}	Unclassifiable or attainment effective April 5, 2005, for the annual PM _{2.5} standard.
PM _{2.5}	Unclassifiable or attainment effective December 13, 2009, for the 24-hour PM _{2.5} standard.
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Unclassifiable or attainment effective December 31, 2011.
¹ Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005.	

- (a) **Ozone Standards**
Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) 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 and NO_x emissions are considered when evaluating the rule applicability relating to ozone. Lawrence County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM_{2.5}**
Lawrence County has been classified as attainment for PM_{2.5}. Therefore, direct PM_{2.5}, SO₂, and NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (c) **Other Criteria Pollutants**
Lawrence 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 regulated pollutants, and hazardous air pollutants, are counted toward the determination of 326 IAC 2-1.1-3 (Exemptions) applicability.

Background and Description of Emission Units and Pollution Control Equipment

The Office of Air Quality (OAQ) has reviewed an application, submitted by C&F Crematory on January 07, 2016, relating to the construction and operation of a human crematory incinerator (IE43-PPI)

The following is a list of the new emission units:

- (a) One (1) incinerator, identified as IE43-PPI, with a maximum operating capacity of 150 pounds per hour (lbs/hr), using natural gas as a supplemental fuel at a maximum heat input capacity of 3.0 million Btu per hour (MMBtu/hr), using no control
- (b) Paved roads and parking lots. [326 IAC 6-4]

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Exemption

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
Natural Gas Combustion	0.024	0.098	0.098	0.008	1.288	0.071	1.082	0.024	0.023 (Hexane)
Incineration	2.30	2.30	2.30	0.99	0.99	0.99	3.29	0.005	0.004 (Naphthalene)
Paved Road Fugitive Emissions	0.03	0.01	0.00	-	-	-	-	-	-
Total PTE of Entire Source	2.35	2.40	2.40	0.99	2.27	1.06	4.37	0.029	0.023 (Hexane)
Exemptions Levels**	< 5	< 5	< 5	< 10	< 10	< 10	< 25	< 2.5	< 1.0
Registration Levels**	< 25	< 25	< 25	< 25	< 25	< 25	< 100	<25	> 1.0

negl. = negligible
 *Under the Part 70 Permit program (40 CFR 70), PM10 and PM2.5, not particulate matter (PM), are each considered as a regulated air pollutant".

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) of all regulated pollutants are within the levels listed in 326 IAC 2-1.1-3(e)(1). Therefore, the source is subject to the provisions of 326 IAC 2-1.1-3 (Exemptions).
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(H)) of any single HAP is less than one (1.0) ton per year and the PTE of a combination of HAPs is less than two and one-half (2.5) 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 Hospital/Medical/Infectious Waste Incinerators, 40 CFR 60.50, Subpart Ec (326 IAC 12), are not included in this exemption because the crematory incinerators are not Hospital/Medical/Infectious Waste Incinerators as defined by 40 CFR 60.51c. Pursuant to the definitions under 40 CFR 60.51c, "hospital waste" and "medical/infectious waste" do not include remains that are intended for cremation.
- (b) The requirements of the following New Source Performance Standards (NSPS) are not included in this exemption because the crematory incinerators are not considered a Municipal Waste Combustors and do not burn municipal type waste:
 - (1) 40 CFR 60, Subpart E (60.50 through 60.54), Standards of Performance for Standards of Performance for Incinerators (326 IAC 12). Pursuant to section 60.51(b) solid waste means refuse that consists of more than 50 percent of municipal type waste. The crematory incinerator will not burn solid waste that consists of more than 50 percent of municipal waste.;
 - (2) 40 CFR 60, Subpart Ea (60.50a through 60.59a), Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced after December 20, 1989 and on or before September 20, 1994 (326 IAC 12);
 - (3) 40 CFR 60, Subpart Eb (60.50b through 60.59b), Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced after September 20, 1994, or for Which Modification or Reconstruction is commenced after June 19, 1996 (326 IAC 12);
 - (4) 40 CFR 60, Subpart AAAA (60.1000 through 60.1465), Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001 (326 IAC 12).
- (c) The requirements of the New Source Performance Standard (NSPS) for Commercial and Industrial Solid Waste Incinerations Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced on or After June 1, 2001, 40 CFR 60, Subpart CCCC (60.2000 through 60.2265) (326 IAC 12), are not included in this exemption, because the crematory incinerators are not considered Commercial and Industrial Solid Waste Incineration (CISWI) Units as defined 40 CFR 60.2265. Pursuant to the definitions under 40 CFR 60.2265, a CISWI unit does not include any of the fifteen types of units described in 40 CFR 60.2555.
- (d) The requirements of the New Source Performance Standards for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004 or for Which Modification or Reconstruction is commenced on or After June 16, 2006, 40 CFR 60, Subpart EEEE (60.2280 through 60, 2891), are not included in this exemption, because the crematory incinerators are not

considered Other Solid Waste Incineration (OSWI) unit as defined by 40 CFR 60.2977. The crematory incinerator does not burn municipal solid waste or institutional waste as defined in 40 CFR 60.2977.

- (e) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the exemption.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (f) The requirements of the National Emission Standards for Hazardous Waste Combustors, 40 CFR 63, Subpart EEE (63.1200 through 63.1214) (326 IAC 20-28), are not included in this exemption, because the crematory incinerators are not considered hazardous waste incinerators and the source is not a major source of HAPs.
- (g) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 20 and 40 CFR Part 61, 63) included in the exemption for this source.

Compliance Assurance Monitoring (CAM)

- (h) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the exemption, 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 2-1.1-3 (Exemptions)
Exemption applicability is discussed under the Permit Level Determination – Exemption 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 one (1) tons per year and the potential to emit of a combination of HAPs is less than two and one-half (2.5) tons per year from each emission unit. Therefore, none of the emission units are subject to 326 IAC 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 not located in Lake, Porter, or LaPorte County, 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)
This source is subject to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations).
- (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 emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.

Crematory Incinerator

326 IAC 4-2 (Incinerators)

The crematory incinerator is subject to the requirements of 326 IAC 4-2 because it is an incinerator that has the potential to emit regulated pollutants.

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)

The crematory incinerator is not subject to the requirements of 326 IAC 6-2, because the incinerator is not an indirect heating unit.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(2), the crematory incinerator is exempt from the requirements of 326 IAC 6-3.

326 IAC 7-1.1 (Sulfur dioxide emission limitations: Applicability)

The crematory incinerator is not subject to the requirements of 326 IAC 7, because the potential emissions of sulfur dioxide are less than twenty-five (25) tons per year.

326 IAC 8-1-6 (VOC rules: General Reduction Requirements for New Facilities)

The crematory incinerator is not subject to the requirements of 326 IAC 8-1-6, since the incinerator has unlimited VOC potential emissions of less than twenty-five (25) tons per year.

326 IAC 9-1 (Carbon Monoxide Emission Limits)

This stationary source, constructed after the applicability date of March 21, 1972, is not subject to the requirements of 326 IAC 9-1-2(a)(3), since the crematory incinerator burns pathological waste and do not burn refuse consisting of more than 50 percent (50%) municipal type waste (household, commercial/retail, and/or institutional waste).

326 IAC 11-6 (Hospital/Medical/Infectious Waste Incinerators)

Pursuant to 326 IAC 11-6, the crematory incinerator is not subject to the requirements of 326 IAC 11-6, because it is not a hospital/medical/infectious waste incinerator, and it was not constructed on or before June 20, 1996.

326 IAC 11-7 (Emission Limitations for Municipal Waste Combustors)

Pursuant to 326 IAC 11-7, the crematory incinerator is not subject to the requirements of 326 IAC 11-7, since it is considered a pathological waste combustor and not a municipal waste combustor, and it does not burn municipal type waste.

326 IAC 11-8 (Commercial and Industrial Solid Waste Incineration Units)

Pursuant to 326 IAC 11-8, the crematory incinerator is not subject to the requirements of 326 IAC 11-8, because it is not considered a commercial and industrial solid waste incineration (CISWI) unit as defined by 40 CFR 60.2875.

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 January 07, 2016.

The construction and operation of this source shall be subject to the conditions of the attached proposed Exemption No. E093-36692-00039. The staff recommends to the Commissioner that this Exemption be approved.

IDEM Contact

- (a) Questions regarding this proposed exemption can be directed to Phillip Joseph 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) 233-4228 or toll free at 1-800-451-6027 extension 3-4228.
- (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 Permit Guide on the Internet at: <http://www.in.gov/idem/5881.htm>; and the Citizens' Guide to IDEM on the Internet at: <http://www.in.gov/idem/6900.htm>.

Appendix A: Emissions Calculations Emission Summary

Company Name: C&F Crematory
Address City IN Zip: 1016 West Main Street
Permit Number: 093-36692-00039
Reviewer: Phillip Joseph
Date: Jan. 2016

Uncontrolled Potential Emissions (tons/year)										
Emission Units	PM	PM-10	PM-2.5	SO2	NOx	VOC	CO	Total HAPs	Worst Case HAPs	
Natural Gas Combustion	0.024	0.098	0.098	0.008	1.288	0.071	1.082	0.024	0.023	Hexane
Incineration	2.30	2.30	2.30	0.99	0.99	0.99	3.29	0.005	0.004	Naphthalene
Paved Road Fugitives	0.03	0.01	0.00	-	-	-	-	-	-	-
Total	2.35	2.40	2.40	0.99	2.27	1.06	4.37	0.029	0.023	Hexane
Exemption Levels	<5	<5	<5	<10	<10	<10	<25	<25	<1.0	-

**Appendix A: Emission Calculations
Incinerator**

Company Name: C&F Crematory
Address City IN Zip: 1016 West Main Street
Permit Number: 093-36692-00039
Reviewer: Phillip Joseph
Date: Jan. 2016

Emission Unit	Throughput	
	lbs/hr	ton/yr
IE43-PPI	150	657

Emission Factor in lb/ton	POLLUTANTS						
	PM*	PM10**	PM2.5**	SO2	CO	NOX	VOC
	7.0	7.0	7.0	2.5	10.0	3.0	3.0
Potential Emissions in ton/yr	2.3	2.3	2.3	0.8	3.3	1.0	1.0

Hazardous Air Pollutants (HAPs)

Pollutant	Bromoform	Carbon Tetrachloride	Chloroform	1,2-Dichloropropane	Ethyl Benzene	Naphthalene
Emission Factor in lb/ton***	2.90E-05	5.74E-05	5.45E-05	1.32E-03	1.61E-03	1.16E-02
Potential Emissions in ton/yr	0.000	0.000	0.000	0.000	0.001	0.004

Pollutant	Toluene	Vinylidene Chloride	Xylene	Tetrachloroethylene	1,1,2,2,-Tetrachloroethane
Emission Factor in lb/ton***	2.90E-05	5.74E-05	5.45E-05	4.03E-05	1.10E-04
Potential Emissions in ton/yr	0.000	0.000	0.000	0.000	0.000
Potential to Emit Total HAPs (tons/year)					0.005

Methodology

Potential Throughput (tons/yr) = [Potential Throughput (lbs/hr)] * [8,760 hrs/yr] * [ton/2000 lbs]

Potential to Emit (tons/yr) = [Potential Throughput (tons/yr)] * [Emission Factor (lb/ton)] * [ton/2,000 lbs]

*Emission factors are from AP 42 for Refuse Combustion (5th Edition 10/96) Table 2.1-12 (Uncontrolled emission factors for industrial/commercial refuse combustors, multiple chamber)

Note: There are no AP 42 emission factors for incineration of human or animal remains. Therefore, it is assumed that emissions from a crematory incinerator is similar to emissions from combusting refuse in a multiple chamber commercial incinerator.

**No emission factor for PM₁₀ and PM_{2.5} available (assume PM = PM₁₀= PM_{2.5})

***There are no hazardous air pollutant (HAP) emission factors for refuse combustors in AP 42 Table 2.1-12. Therefore, the potential to emit (PTE) of HAPs was calculated using emission factors contained in WebFIRE (the EPA emission factor online repository) under SCC 5-02-005-05 (pathological incineration)

**Appendix A: Emissions Calculations
IE43-PPI Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: C&F Crematory
Address City IN Zip: 1016 West Main Street
Registration: 093-36692-00039
Reviewer: Phillip Joseph
Date: Jan. 2016

Heat Input Capacity	HHV	Potential Throughput
MMBtu/hr	mmBtu	MMCF/yr
3.0	mmscf	
	1020	25.8

Emission Factor in lb/MMCF	Pollutant						
	PM*	PM10*	direct PM2.5*	SO2	NOx	VOC	CO
	1.9	7.6	7.6	0.6	100	5.5	84
					**see below		
Potential Emission in tons/yr	0.02	0.10	0.10	0.01	1.29	0.07	1.08

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

PM2.5 emission factor is filterable and condensable PM2.5 combined.

**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,020 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

**Appendix A: Emissions Calculations
IE43-PPI Natural Gas Combustion Only
MM BTU/HR <100**

Company Name: C&F Crematory
Address City IN Zip: 1016 West Main Street
Permit Number: 093-36692-00039
Reviewer: Phillip Joseph
Date: Jan. 2016

Hazardous Air Pollutants (HAPs)

	HAPs - Organics					
	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene	Total - Organics
Emission Factor in lb/MMcf	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	
Potential Emission in tons/yr	2.7E-05	1.5E-05	9.7E-04	0.02	4.4E-05	0.02

	HAPs - Metals					
	Lead	Cadmium	Chromium	Manganese	Nickel	Total - Metals
Emission Factor in lb/MMcf	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03	
Potential Emission in tons/yr	6.4E-06	1.4E-05	1.8E-05	4.9E-06	2.7E-05	7.1E-05
						Total HAPs
						0.02
						Worst HAP
						0.02

Methodology is the same as above.

The five highest organic and metal HAPs emission factors are provided above.

Additional HAPs emission factors are available in AP-42, Chapter 1.4.

**Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads**

Company Name: C&F Crematory
Source Address: 1016 West Main Street
Permit Number: 093-36692-00039
Reviewer: Phillip Joseph
Date: Jan. 2016

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type	Maximum number of vehicles per day	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	12.0	1.0	12.0	2.3	27.6	180	0.034	0.4	149.3
Vehicle (leaving plant) (one-way trip)	12.0	1.0	12.0	2.3	27.6	180	0.034	0.4	149.3
Totals			24.0		55.2			0.8	298.6

Average Vehicle Weight Per Trip =

2.3

 tons/trip
 Average Miles Per Trip =

0.03

 miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	2.3	2.3	2.3	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m ² = silt loading value for paved roads at iron and steel production facilities (Table 13.2.1-3)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$ (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$

where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	0.203	0.041	0.0100	lb/mile
Mitigated Emission Factor, Eext =	0.186	0.037	0.0091	lb/mile
Dust Control Efficiency =	50%	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)	Controlled PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Vehicle (leaving plant) (one-way trip)	0.02	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.00
Totals	0.03	0.01	0.00	0.03	0.01	0.00	0.01	0.00	0.00

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
 Unmitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Unmitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = [Maximum one-way miles (miles/yr)] * [Mitigated Emission Factor (lb/mile)] * (ton/2000 lbs)
 Controlled PTE (tons/yr) = [Mitigated PTE (tons/yr)] * [1 - Dust Control Efficiency]

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PM2.5 = Particle Matter (<2.5 um)
 PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

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Michael R. Pence
Governor

Carol S. Comer
Commissioner

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

TO: Elizabeth Freeman
C&F Crematory
705 West Warren Street
Mitchell, IN 47446

DATE: February 2, 2016

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

SUBJECT: Final Decision
Exemption
093-36692-00039

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:
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 8/27/2015

Mail Code 61-53

IDEM Staff	VHAUN 2/2/2016 C and F Crematory 093-36692-00039 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		

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1		Elizabeth J Freeman C and F Crematory 705 W Warren St Mitchell IN 47446 (Source CAATS)										VIA CERTIFIED MAIL USPS
2		Lawrence County Board of Commissioners 916 15th Street Bedford IN 47421 (Local Official)										
3		Mr. Anthony Wray 1861 Buddha Bypass Rd Bedford IN 47421 (Affected Party)										
4		Mr. Bobby Minton 7745 S. Fairfax Rd Bloomington IN 47401 (Affected Party)										
5		Mr. Danny Arnold 374 Cedar View Ln. Bedford IN 47421 (Affected Party)										
6		Mr. David Weatherholt Boilermaker Local #374 4777 East County Road 2100 North Dale IN 47523 (Affected Party)										
7		Mr. Don Sherry 1111 215 St. Tell City IN 47506-2815 (Affected Party)										
8		Mitchell City Council and Mayors Office 407 S. 6th St. Mitchell IN 47446 (Local Official)										
9		Lawrence County Health Department 2419 Mitchell Rd. Bedford, IN 47421 (Health Department)										
10												
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