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 14, 2011

RE: White Castle System, Inc. / 073-29819-00039

FROM: Matthew Stuckey, 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 13-15-5-3, this permit 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.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 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 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
FNPER.dot12/03/07

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New Source Review and Minor Source Operating Permit OFFICE OF AIR QUALITY

White Castle System, Inc.
809 North Melville Street
Rensselaer, Indiana 47978

(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.

This permit is issued to the above mentioned company under the provisions of 326 IAC 2-1.1, 326 IAC 2-6.1 and 40 CFR 52.780, with conditions listed on the attached pages.

Indiana statutes from IC 13 and rules from 326 IAC, quoted 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 MSOP under 326 IAC 2-6.1.

Operation Permit No.: M073-29819-00039	
Issued by: Alfred C. Dumaual, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: October 14, 2011 Expiration Date: October 14, 2016

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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 and A.2 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 2-5.1-3(c)][326 IAC 2-6.1-4(a)]

The Permittee owns and operates a stationary bread baking operation.

Source Address:	809 North Melville Street, Rensselaer, Indiana 47978
General Source Phone Number:	(219) 866-4631
SIC Code:	2051
County Location:	Jasper
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Minor Source Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

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) bread baking line, consisting of a proof box and a natural gas-fired bread baking oven, identified as P001, with a maximum heat input capacity of 3.1 MMBtu/hr, and a maximum baking rate of 3,400 pounds of bread per hour, constructed in 1984, and venting to stack #1. The natural gas-fired bread baking oven is equipped with a catalytic oxidizer for VOC control, approved for construction in 2011.

(b) One (1) natural gas-fired boiler, identified as B001, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), constructed in 2007, and venting to stack #2;

(c) Three (3) flour storage silos each with a capacity of 110,000 pounds, with a pneumatic conveying system with a fabric filter on each silo. These silos were constructed in 1984;

(d) Flour handling system, which includes two (2) weigh feeders and two (2) flour mixers, with a total capacity of 2,200 pounds per hour, each emission unit is controlled by a dedicated filter fabric.

(e) One (1) natural gas-fired production air handler unit, identified as H001, with a maximum heat input capacity of 1.98 MMBtu/hour.

(f) One (1) natural gas-fired boiler room air handler, identified as H002, with a maximum heat input capacity of 0.30 MMBtu/hour.

(g) One (1) natural gas-fired boiler room water heater, identified as H003, with a maximum heat input capacity of 0.30 MMBtu/hour.

(h) One (1) natural gas-fired boiler unit heater, identified as H004, with a maximum heat input capacity of 0.05 MMBtu/hour.

(i) One (1) natural gas-fired office roof top unit, identified as H005, with a maximum heat input capacity of 0.20 MMBtu/hour.

(j) One (1) natural gas-fired dock north heater, identified as H006, with a maximum heat input capacity of 0.13 MMBtu/hour.

(k) One (1) natural gas-fired mixer area north heater, identified as H007, with a maximum heat input capacity of 0.13 MMBtu/hour.

(l) One (1) natural gas-fired dock south heater, identified as H008, with a maximum heat input capacity of 0.13 MMBtu/hour.

(m) One (1) natural gas-fired production bailer unit, identified as H009, with a maximum heat input capacity of 0.13 MMBtu/hour.

(n) One (1) natural gas-fired northwest production unit heater, identified as H010, with a maximum heat input capacity of 0.13 MMBtu/hour.

(o) One (1) natural gas-fired southwest production unit heater, identified as H011, with a maximum heat input capacity of 0.13 MMBtu/hour.

(p) One (1) natural gas-fired east B-Room heater unit, identified as H012, with a maximum heat input capacity of 0.13 MMBtu/hour.

(q) One (1) natural gas-fired west B-Room heater unit, identified as H013, with a maximum heat input capacity of 0.13 MMBtu/hour.

(r) One (1) natural gas-fired mezzanine heater unit, identified as H014, with a maximum heat input capacity of 0.05 MMBtu/hour.

(s) One (1) natural gas-fired A-Room heater unit, identified as H015, with a maximum heat input capacity of 0.05 MMBtu/hour.

(t) One (1) natural gas-fired dock middle heater, identified as H016, with a maximum heat input capacity of 0.13 MMBtu/hour.

SECTION B GENERAL CONDITIONS

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

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 2-1.1-1) shall prevail.

B.2 Permit Term [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, M073-29819-00039, 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, 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

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

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

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

B.7 Duty to Provide Information

(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. 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 Annual Notification [326 IAC 2-6.1-5(a)(5)]

(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 permit.

(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, Indiana 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.9 Preventive Maintenance Plan [326 IAC 1-6-3]

(a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this permit or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:

(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.

If, due to circumstances beyond the Permittee's control, the PMPs cannot be prepared and maintained within the above time frame, the Permittee may extend the date an additional ninety (90) days provided the Permittee notifies:

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

The Permittee shall implement the PMPs.

(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.

(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.10 Prior Permits Superseded [326 IAC 2-1.1-9.5]

(a) All terms and conditions of permits established prior to M073-29819-00039 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 permit.

B.11 Termination of Right to Operate [326 IAC 2-6.1-7(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 one hundred twenty (120) days prior to the date of expiration of the source's existing permit, consistent with 326 IAC 2-6.1-7.

B.12 Permit Renewal [326 IAC 2-6.1-7]

(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 2-6.1-7. Such information shall be included in the application for each emission unit at this source. The renewal application does require an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, 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 one hundred twenty (120) days 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 2-6.1 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, pursuant to 326 IAC 2-6.1-4(b), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.13 Permit Amendment or Revision [326 IAC 2-5.1-3(e)(3)][326 IAC 2-6.1-6]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-6.1-6 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
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(c) The Permittee shall notify the OAQ no later than thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]

B.14 Source Modification Requirement

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

B.15 Inspection and Entry
[326 IAC 2-5.1-3(e)(4)(B)][326 IAC 2-6.1-5(a)(4)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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 permitted 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, at reasonable times, 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, at reasonable times, 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, at reasonable times, 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.16 Transfer of Ownership or Operational Control [326 IAC 2-6.1-6]

(a) The Permittee must comply with the requirements of 326 IAC 2-6.1-6 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
Permit Administration and Support Section, 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 an affirmation that the statements in the application are true and complete by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement notice-only changes addressed in the request for a notice-only change immediately upon submittal of the request. [326 IAC 2-6.1-6(d)(3)]

B.17 Annual Fee Payment [326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees due no later than thirty (30) calendar days of receipt of a bill from IDEM, OAQ.

(b) 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.18 Credible Evidence [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 2-6.1-5(a)(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 Permit Revocation [326 IAC 2-1.1-9]

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

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(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 permit shall not require revocation of this permit.

(d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

(e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

C.3 Opacity [326 IAC 5-1]

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-1 (Applicability) and 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.4 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.

C.5 Incineration [326 IAC 4-2] [326 IAC 9-1-2]

The Permittee shall not operate an incinerator except as provided in 326 IAC 4-2 or in this permit. The Permittee shall not operate a refuse incinerator or refuse burning equipment except as provided in 326 IAC 9-1-2 or in this permit.

C.6 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).

C.7 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
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 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.

(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 Licensed 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 Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement to use an Indiana Licensed Asbestos inspector is not federally enforceable.

Testing Requirements [326 IAC 2-6.1-5(a)(2)]

C.8 Performance Testing [326 IAC 3-6]

(a) For performance testing required by this permit, a test protocol, except as provided elsewhere in this permit, shall be submitted to:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, 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.

(b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual test date.

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ 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.9 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 2-6.1-5(a)(2)]

C.10 Compliance Monitoring [326 IAC 2-1.1-11]

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment. All monitoring and record keeping requirements not already legally required shall be implemented when operation begins.

C.11 Instrument Specifications [326 IAC 2-1.1-11]

(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

C.12 Response to Excursions or Exceedances

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

(a) The Permittee shall take reasonable response steps to 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 excess emissions.

(b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning 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 normal or usual manner of operation.

(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; and/or

(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 record the reasonable response steps taken.

C.13 Actions Related to Noncompliance Demonstrated by a Stack Test

(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 submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) 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.

Record Keeping and Reporting Requirements [326 IAC 2-6.1-5(a)(2)]

C.14 Malfunctions Report [326 IAC 1-6-2]

Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.

(b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

C.15 General Record Keeping Requirements [326 IAC 2-6.1-5]

(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 makes 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, for all record keeping requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

C.16 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-2] [IC 13-14-1-13]

(a) Reports required by conditions in Section D of this permit shall be submitted to:

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

(b) 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.

(c) The first report shall cover the period commencing on the date of issuance of this permit or the date of initial start-up, whichever is later, and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit, “calendar year” means the twelve (12) month period from January 1 to December 31 inclusive.

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) bread baking line, consisting of a proof box and a natural gas-fired bread baking oven, identified as P001, with a maximum heat input capacity of 3.1 MMBtu/hr, and a maximum baking rate of 3,400 pounds of bread per hour, constructed in 1984, and venting to stack #1. The natural gas-fired bread baking oven is equipped with a catalytic oxidizer for VOC control, approved for construction in 2011.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.1.1 Best Available Control Technology (BACT) - VOC [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the Permittee shall control VOC emissions from the bread baking line using the Best Available Control Technology (BACT), which has been determined to be the following:

(a) The VOC emissions from the natural gas-fired bread baking oven (P001) shall be controlled by a catalytic oxidizer.

(b) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the natural gas-fired bread baking oven (P001) shall not exceed 0.54 pounds per hour.

(d) The source shall operate the proof box associated with the bread baking line in accordance the manufacturer's design and operating specifications.

(e) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the proof box associated with Line 1, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Scrape, sweep, and remove dough/product from floor inside proof box.

(2) Four (4) Week Cleaning Procedure:

(A) Wipe off interior proof box channel rails where needed;
(B) Remove any dough or oil accumulations from channel rails and cross over framework; and
(C) Wash or mop the floor of the proof box. Remove accumulated waste from floor.

D.1.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for the catalytic oxidizer controlling the natural gas-fired bread baking oven (P001). Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.3 VOC Control

In order to comply with Conditions D.1.1(a), (b) and (c), the catalytic oxidizer shall be in operation and control emissions from the natural gas-fired bread baking oven (P001) at all times products are baking in the oven.

D.1.4 Testing Requirements [326 IAC 8-1-6][326 IAC 2-1.1-11]

In order to demonstrate compliance with Conditions D.1.1(b) and D.1.1(c), the Permittee shall perform VOC testing (including emission rate and overall destruction efficiency) for the catalytic oxidizer associated with the natural gas-fired bread baking oven (P001) no later than 180 days after issuance of this permit, M073-29819-00039. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration.

Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing - contains the Permittee's obligation with regard to the performance testing required by this condition.

Compliance Monitoring Requirements [326 IAC 2-6.1-5(a)(2)]

D.1.5 Catalytic Oxidizer Temperature

(a) A continuous monitoring system shall be calibrated, maintained, and operated on the catalytic oxidizer for measuring operating temperature. For the purpose of this condition, continuous means no less than once per fifteen (15) minutes. The output of this system shall be recorded as a three (3) hour average. From the date of startup of the catalytic oxidizer until the stack test results are available, the Permittee shall operate the catalytic oxidizer at or above the three (3) hour average temperature of 600°F.

(b) The Permittee shall determine the three (3) hour average temperature from the most recent valid stack test that demonstrates compliance with Conditions D.1.1(b) and D.1.1(c).

(c) On and after the date the stack test results are available, the Permittee shall operate the catalytic oxidizer at or above the three (3) hour average temperature as observed during the most recent compliant stack test.

D.1.6 Parametric Monitoring

(a) The duct pressure or fan amperage shall be observed at least once per day when the catalytic oxidizer is in operation.

(b) The Permittee shall determine the appropriate duct pressure or fan amperage of the capture system for the catalytic oxidizer from the most recent valid stack test that demonstrates compliance with the limit in Conditions D.1.1(b) and D.1,1(c).

(c) On and after the date that the stack test results are available for the catalytic oxidizer, the duct pressure or fan amperage shall be maintained within the normal range as established in the most recent compliant stack test.

Record Keeping and Reporting Requirements 326 IAC 2-6.1-5(a)(2)]

D.1.7 Record Keeping Requirements

(a) To document the compliance status with Condition D.1.5, the Permittee shall maintain continuous temperature records (on a 3-hour average basis) for the catalytic oxidizer and the 3-hour average temperature used to demonstrate compliance during the most recent

compliant stack test. The Permittee shall include in its daily record when a temperature record is not taken and the reason for the lack of a temperature record (e.g., the process did not operate that day).

(b) To document the compliance status with Condition D.1.6, the Permittee shall maintain daily records of the duct pressure or fan amperage and the duct pressure or fan amperage used to demonstrate compliance during the most recent compliant stack test. The Permittee shall include in its daily record when a duct pressure or fan amperage record is not taken and the reason for the lack of duct pressure or fan amperage record (e.g., the process did not operate that day).

(c) Section C - General Record Keeping Requirements, contains the Permittee's obligations with regard to the records required by this condition.

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(b) One (1) natural gas-fired boiler, identified as B001, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), constructed in 2007, and venting to stack #2;

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.2.1 Particulate Emission Limitations [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), the particulate emissions from the one (1) natural gas-fired boiler, identified as B001, shall not exceed 0.60 lb/MMBtu.

SECTION D.3 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(c) Three (3) flour storage silos each with a capacity of 110,000 pounds, with a pneumatic conveying system with a fabric filter on each silo. These silos were constructed in 1984;

(d) Flour handling system, which includes two (2) weigh feeders and two (2) flour mixers, with a total capacity of 2,200 pounds per hour, each emission unit is controlled by a dedicated filter fabric.

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

Emission Limitations and Standards [326 IAC 2-6.1-5(a)(1)]

D.3.1 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2, particulate emissions from each of following operations shall not exceed the pound per hour limit listed in the table below:

Emission Unit	Process Weight Rate (tons/hour)	326 IAC 6-3-2 Allowable Particulate Emission Rate (pounds/hour)
Three (3) flour storage silos	1.04	4.21
Two (2) weigh feeders	1.10	4.37
Two (2) flour mixers	1.10	4.37

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$E = 4.10\ P^{0.67}$ where E = rate of emission in pounds per hour and
P = process weight rate in tons per hour

D.3.2 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

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

MINOR SOURCE OPERATING PERMIT
ANNUAL NOTIFICATION

This form should be used to comply with the notification requirements under 326 IAC 2-6.1-5(a)(5).

Company Name:	White Castle System, Inc.
Address:	809 North Melville Street
City:	Rensselaer, Indiana 47978
Phone #:	(219) 866-4631
MSOP #:	M073-29819-00039

I hereby certify that White Castle System, Inc. is :
- ☐ still in operation.
- ☐ no longer in operation.

I hereby certify that White Castle System, Inc. is :
- ☐ in compliance with the requirements of MSOP M073-29819-00039.
- ☐ not in compliance with the requirements of MSOP M073-29819-00039.

Authorized Individual (typed):
Title:
Signature:
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:

MALFUNCTION REPORT

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FAX NUMBER: (317) 233-6865

This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE IT HAS POTENTIAL TO EMIT 25 TONS/YEAR PARTICULATE MATTER ?_____, 25 TONS/YEAR SULFUR DIOXIDE ?_____, 25 TONS/YEAR NITROGEN OXIDES?_____, 25 TONS/YEAR VOC ?_____, 25 TONS/YEAR HYDROGEN SULFIDE ?_____, 25 TONS/YEAR TOTAL REDUCED SULFUR ?_____, 25 TONS/YEAR REDUCED SULFUR COMPOUNDS ?_____, 25 TONS/YEAR FLUORIDES ?_____, 100 TONS/YEAR CARBON MONOXIDE ?_____, 10 TONS/YEAR ANY SINGLE HAZARDOUS AIR POLLUTANT ?_____, 25 TONS/YEAR ANY COMBINATION HAZARDOUS AIR POLLUTANT ?_____, 1 TON/YEAR LEAD OR LEAD COMPOUNDS MEASURED AS ELEMENTAL LEAD ?_____, OR IS A SOURCE LISTED UNDER 326 IAC 2-5.1-3(2) ?_____. EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION _____.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC _____ OR, PERMIT CONDITION # _____ AND/OR PERMIT LIMIT OF _____

THIS INCIDENT MEETS THE DEFINITION OF "MALFUNCTION" AS LISTED ON REVERSE SIDE ? Y N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ? Y N

COMPANY:_____PHONE NO. ( )_____
LOCATION: (CITY AND COUNTY)_____
PERMIT NO. _____ AFS PLANT ID: _____ AFS POINT ID: _____ INSP:_____
CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON:_____
_____

DATE/TIME MALFUNCTION STARTED: _____/_____/ 20____ _____ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: _____

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE_____/_____/ 20____ _____ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER:_____

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: _____
_____

MEASURES TAKEN TO MINIMIZE EMISSIONS:_____
_____

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL* SERVICES:_____
CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS:_____
CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT:_____
INTERIM CONTROL MEASURES: (IF APPLICABLE)_____
_____
_____

MALFUNCTION REPORTED BY:_____TITLE:_____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY:_____DATE:_____TIME:_____
*SEE PAGE 2

Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.

326 IAC 1-6-1 Applicability of rule

Sec. 1. This rule applies to the owner or operator of any facility required to obtain a permit under 326 IAC 2-5.1 or 326 IAC 2-6.1.

326 IAC 1-2-39 "Malfunction" definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner.

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

_____
_____

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (ATSD) for a Registration Transitioning to a Minor Source Operating Permit (MSOP) with New Source Review (NSR)

Source Background and Description

Source Name:	**White Castle System, Inc.**
Source Location:	**809 North Melville Street, Rensselaer, Indiana 47978**
County:	**Jasper**
SIC Code:	**2051**
Operation Permit No.:	**M073-29819-00039**
Permit Reviewer:	**Summer Keown / Jason R. Krawczyk**

On September 3, 2011, the Office of Air Quality (OAQ) had a notice published in the Rensselaer Republican, Rensselaer, Indiana, stating that White Castle System, Inc. had applied for a Minor Source Operating Permit (MSOP) with New Source Review (NSR) due to a re-evaluation of the potential emission to emit criteria air pollutants from the source and the construction of a catalytic oxidizer to control VOC emissions from the bread baking oven. The notice also stated that the OAQ proposed to issue a Minor Source Operating 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.

Comments and Responses

On September 20, 2011, White Castle System, Inc. submitted comments to IDEM, OAQ on the draft Minor Source Operating Permit. Additionally, White Castle System, Inc. submitted comments on September 30, 2011. The two (2) letters received by IDEM have been broken up into separate comment sections for ease in responding.

The Technical Support Document (TSD) is used by IDEM, OAQ for historical purposes. IDEM, OAQ does not make any changes to the original TSD, but the Permit will have the updated changes. The comments and revised permit language are provided below with deleted language as ~~strikeouts~~ and new language **bolded**.

Comment 1 (Received September 20, 2011):

White Castle believes IDEM should not regulate proof boxes for reasons previously discussed; the most important reason, but certainly not the only one being that it is imperative that airflow is evenly distributed within a proof box to develop quality bread dough. Disrupting the air flow through testing and/or control for an insignificant amount of VOC's while risking product quality demonstrates incomplete understanding of the baking process. The approach IDEM is taking regulating proof boxes risks wasting natural resources (e.g. natural gas, flour, salt, water, etc.) while generating poorly developed bread dough that cannot be baked, resulting in solid waste.

Response to Comment 1:

IDEM is required to review potential emission sources for rule applicability and permit level determination. A bakery proof box and bakery oven are considered to be one facility. Since the combined potential to emit (PTE) of the proof box and bakery oven is greater than twenty-five (25) tons per year, the facility was

constructed after January 1, 1980, is located within the state of Indiana, and is not regulated by other provisions of 326 IAC 8, 326 IAC 20-48, or 326 IAC 20-56, the facility is required to reduce VOC emissions using best available control technology (BACT).

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies;

(4) Evaluate the most effective controls and document the results; and

(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts of the control options. Emission reductions may be determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause adverse environmental effects to public health and the environment.

The BACT for White Castle System, Inc.'s proof box was determined to be work practice standards in the form of following manufacturer's specifications and following a tiered cleaning schedule and should in no way impact the quality of the dough or the baking process. The steps required in the cleaning schedule were those identified by the source as being necessary and which were already being performed by the sanitation department.

No changes were made as a result of this comment.

Comment 2 (Received September 20, 2011):

White Castle continues to believe proof box cleaning requirements should not be specified within the permit and could be handled through referencing a Sanitation Standard Operating Procedure (SSOP) just like the permit refers to a Preventive Maintenance Plan (PMP) for a control. Because the language is so specific, White Castle believes there is significant risk that future enforcement could result from this specific requirement as a result of an inspection. IDEM responded to this concern in the meeting and it is White Castle's understanding that separate documents concerning the specific cleaning items are not needed for recording that sanitation followed the permit specific language. IDEM assured White Castle that other sanitation documents would support any future inspections concerning proof box sanitation.

IDEM addressed the phrase "..., or their equivalent, in accordance with their Sanitation Standard Operating Procedure" found in Section D.1.1(e) to mean that the bakery Sanitation Department makes the "equivalent" decision and that no Management of Change Record or other documents would be required to demonstrate equivalency. The decision rests solely upon the observations the Sanitation Department makes to sanitize the proof box.

Response to Comment 2:

The Preventive Maintenance Plans (PMPs) identified in the permit are for the identification of the individuals responsible for inspecting, maintaining and repairing emission control devices, to list the items or conditions that will be inspected and the inspection schedule for said items or conditions, and for the

identification and quantification of the replacement parts which will be maintained in inventory for quick replacement. The PMP does not ensure compliance with an emission limit or pollutant reduction.

The purpose of the BACT is to demonstrate that the emissions remaining after application of BACT will not cause adverse environmental effects to public health and the environment. For the purpose of controlling the proof box, BACT has been determined to be work practice standards in the form of following manufacturer's specifications and following a tiered cleaning schedule. The minimal requirements of the Sanitation Standard Operating Procedures (SSOP) must be identified in order for BACT to be practically enforceable. IDEM does not agree to the referencing of SSOPs as being sufficient for BACT.

IDEM agreed to allow the facility to perform the identified cleaning operations, "or their equivalent", (as determined by the source), in order to allow for operational flexibility without requiring the source to revise the BACT document for incidental changes that will not affect the reduction of VOC emissions.

No changes were made as a result of this comment.

Comment 3 (Received September 20, 2011):

The impact to White Castle on researching and regulating proof boxes on this matter with IDEM has been significant. On August 31, 2010 White Castle discussed with IDEM whether a pre-application meeting would be necessary for moving a catalytic oxidizer from the Carteret Bakery to the Rensselaer Bakery. White Castle was planning to move the oxidizer to stay ahead of federal ambient ozone standards and being a clean corporate citizen since the Carteret Bakery was shutting down. IDEM responded that they did not believe a pre-application meeting was necessary and did not mention issues with regulating proof boxes that would or could delay issuing a permit.

However, the proof box test results report for another bakery was dated June 30, 2010 and IDEM had reported the sampling procedures used and test results obtained were acceptable in a memo dated July 29, 2010. Had IDEM explained the issues with proof boxes on the August 31, 2010 telephone call or before the end of 2010, White Castle could have made plans to keep the Carteret Bakery open or moved the product to another location which would have retained $1 million per year in sales of the premium dinner roll rather than having to completely eliminate the product. If the premium dinner roll would have moved it would have created initially five new jobs with benefits and a defined pension plan, and ultimately 10 new jobs in Indiana. Due to the cost and complexity of remarketing, difficulties of reacquiring former customers, and the economy, it is unlikely White Castle can rebuild the premium dinner roll sales network.

Response to Comment 3:

At the time of the August 31, 2010 discussion with White Castle, IDEM, OAQ's Permit Branch did not anticipate the need for a pre-application meeting. Although the proof box test report for the other bakery was dated June 30, 2010 and determined acceptable by IDEM, OAQ's Compliance and Enforcement Branch on July 29, 2010, that determination did not come from within the Permits Branch. At that time, upper management within IDEM was still considering what measures were needed to be taken as a result of the identification of emissions from proof boxes. The permit application was received by IDEM's Permit Administrative and Support Section on October 22, 2010 and on December 2, 2010, after discussing the issue internally with senior staff, the permit writer contacted the source to discuss the evaluation of proof box emissions. The accountability timeframe for the permit was suspended for a total of 147 days while IDEM was waiting on information requested from White Castle System, Inc. to proceed with the permit application. White Castle System, Inc. had the permit documents for a total of 70 days while on the multiple applicant review periods. During these applicant review periods, IDEM responded to comments and questions, revised applicable documents, and held a meeting with the source in IDEM, OAQ's main office in Indianapolis, Indiana on August 23, 2011.

IDEM understands that difficulties arise when previously unidentified emission sources are initially evaluated. These difficulties often result in time delays due to the gathering of information and these time delays often relate to increased costs or lost revenues for facilities. IDEM's primary concern is to ensure that all facilities in Indiana have permit coverage for all of their emissions, eliminating any potential exposure to future citizen suits or U.S. EPA enforcement for unpermitted emissions. Recent history with other industries shows that facilities that were properly permitted using the best information available when they were originally permitted, can have significant unpermitted (and thus unauthorized) emissions. IDEM's goal is to work with sources, including bakeries, to either verify that all emissions are properly permitted, or to identify and properly permit currently unpermitted emission units.

No changes were made as a result of this comment.

Comment 4 (Received September 30, 2011):

Based on the air permit application documents submitted to the IDEM, it is still believed regulating proof boxes is an unrealistic and unnecessary activity for the reasons explained below.

AP-42 and the supporting documents explained proof boxes already. Proof boxes are an enclosed room where heat and humidity are controlled to affect the dough to rise. Air is circulated within a proof box to evenly distribute heat and humidity to provide optimum conditions for the dough to rise. While proof boxes can be configured differently, it is imperative airflow is evenly distributed within a proof box to develop quality bread dough. Poorly developed bread dough that cannot be baked results in solid waste.

Response to Comment 4:

AP-42 Chapter 9.9.6 identifies the USEPA recommendation for estimating VOC emissions from bread bakeries and specifically addresses bakery oven emissions. There is no AP-42 emission factor for proof boxes. The Alternative Control Technology Document for Bakery Oven Emissions (EPA453/R-92-017, December 1992) does reference proof boxes and states:

> "Although high concentrations of VOC exist in the proof boxes that are often used to raise the panned dough, the low airflow through those boxes minimizes emissions."

This statement does not exclude proof boxes from regulation. The U.S. EPA Region 5 recently observed a stack test performed on a proof box in Illinois and saw similar emissions to those observed by IDEM when those facilities were processing bread. When the Illinois facility processed an alternate dough product, those emissions significantly increased. Based on these observations, IDEM must evaluate the potential to emit from proof boxes in addition to the emissions from the other emission units comprising the bakery line. IDEM's intent is to make sure that all applicable VOC emissions from bakeries are identified and correctly permitted.

No changes were made as a result of this comment.

Comment 5 (Received September 30, 2011):

Natural draft at conveyor ingress and egress points is the only way to operate proof boxes to efficiently use energy keeping the proof box heat and humidity constant for optimal proof to prevent the dough from falling. Inducing a draft to test and or control proof boxes would use additional energy and cause dough to fall, which wastes food and results in a product that cannot be sold to our customers.

Response to Comment 5:

IDEM's BACT analysis performed for the White Castle System, Inc. facility is not requiring the control of the proof box or testing of the proof box. BACT for the proof box has been determined to be operating the proof box in accordance with manufacturer's specifications and performing proof box cleaning operations

on a tiered cleaning schedule.

No changes were made as a result of this comment.

Comment 6 (Received September 30, 2011):

Bakeries are designed for positive building pressure to prevent dust or other airborne items from entering through doors. Significant volumes of make-up air must be brought into the building envelope to keep it positively pressurized for food safety but more importantly because oven make-up air comes from within the building envelope. As a result of the combustion make-up air requirements, it is believed that any air resulting from a proof box ingress or egress point would ultimately be pulled into the oven due to the combustion make-up air requirements. This means that if there is any air flow emanating from the proof box it ultimately ends up in the oven stack.

Response to Comment 6:

White Castle System, Inc. did not provide engineering analyses to IDEM detailing the amount of control that could be obtained for potential proof box emissions being controlled indirectly by the bakery oven due to the combustion make-up air requirements. Therefore, this hypothetical control methodology was not evaluated during the BACT analysis.

No changes were made as a result of this comment.

Comment 7 (Received September 30, 2011):

The costs associated with adding control to a proof box were $260,000 per ton removed. The basis for the cost was the lowest quality clean room (largest particle basis) meaning the cost would increase significantly if it is determined that the large particle clean room basis is insufficient for bread baking volatile organic compounds (VOCs).

Response to Comment 7:

IDEM, OAQ recognized that the large incremental increase in controlling VOC emissions from the proof box, through the installation of a clean room surrounding the proof box and the conveyer system, and installation of a free standing catalytic oxidizer, would be excessive in costs; for this reason, BACT was determined to be:

(a) The VOC emissions from the natural gas-fired bread baking oven (P001) shall be controlled by a catalytic oxidizer.

(b) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the natural gas-fired bread baking oven (P001) shall not exceed 0.54 pounds per hour.

(d) The source shall operate the proof box associated with the bread baking line in accordance the manufacturer's design and operating specifications.

(e) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the proof box associated with Line 1, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Scrape, sweep, and remove dough/product from floor inside proof box.

(2) Four (4) Week Cleaning Procedure:

(A) Wipe off interior proof box channel rails where needed;
(B) Remove any dough or oil accumulations from channel rails and cross over framework; and
(C) Wash or mop the floor of the proof box. Remove accumulated waste from floor.

No changes were made as a result of this comment.

Comment 8 (Received September 30, 2011):

The proposed approach for proof box cleaning for food safety purposes requires an additional 20% operating time to achieve the same amount of production, thus making it impossible for bakeries to operate 24/7. The costs associated with managing something for which no peer reviewed testing protocol exists is prohibitively expensive and serves as a disincentive for business operations especially in this economic climate.

Proofing bread dough is an art rather than a science because the baker must make adjustments to the amount of yeast added based on ambient temperature and pressure, and yeast age and quality.

Response to Comment 8:

BACT is done a case-by-case basis. The cleaning procedures outlined in the permit and BACT analysis document (Appendix B) are site specific for White Castle System, Inc. based on the information provided by the facility, and their Sanitation Standard Operating Procedure developed by The Long Company, their bakery consultant. White Castle System, Inc. does not have a 24 hour, 7 day per week operating schedule; therefore the cleaning schedule should not pose an issue.

The testing protocol used for the stack test performed at the other bakery was Code of Federal Register (CFR) promulgated Test Method 25. IDEM does not consider the stack testing done on the proof boxes to be experimental. Since the initial stack test that was observed by IDEM, the U.S. EPA Region 5 has observed proof box stack testing performed in Illinois, using similar testing procedures.

IDEM is not requiring White Castle System, Inc. to perform stack testing on their proof box. Stack testing on the proof box would only be required if White Castle System, Inc. had not accepted the use of one of the IDEM approved methods of estimating VOC emissions from proof boxes.

No changes were made as a result of this comment.

Comment 9 (Received September 30, 2011):

White Castle believes the proof box cleaning requirements should not be specified within the permit. There is significant risk that future enforcement could result from this specific requirement.

Response to Comment 9:

For the purpose of controlling the proof box, BACT was determined to be work practice standards in the form of following manufacturer's specifications and following a tiered cleaning schedule. The minimal requirements of the Sanitation Standard Operating Procedures (SSOP) must be identified in order for BACT to be practically enforceable. IDEM does not agree to the referencing of SSOPs as being sufficient for BACT. IDEM agreed to allow the facility to perform the identified cleaning operations, "or their

equivalent", (as determined by the source), in order to allow for operational flexibility without requiring the source to revise the BACT document for incidental changes that will not affect the reduction of VOC emissions.

No changes were made as a result of this comment.

IDEM Contact

(a) Questions regarding this proposed Minor Source Operating Permit can be directed to Jason R. Krawczyk 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) 234-5174 or toll free at 1-800-451-6027 extension 4-5174.

(b) A copy of the permit 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

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Registration Transitioning to a Minor Source Operating Permit (MSOP) with New Source Review (NSR)

Source Description and Location

Source Name:	**White Castle System, Inc.**
Source Location:	**809 North Melville Street, Rensselaer, Indiana 47978**
County:	**Jasper**
SIC Code:	**2051**
Operation Permit No.:	**M073-29819-00039**
Permit Reviewer:	**Summer Keown**

On October 22, 2010, the Office of Air Quality (OAQ) received an application from White Castle System, Inc., requesting to transition from a Registration to a Minor Source Operating Permit (MSOP) with New Source Review (NSR) due to a re-evaluation of the potential emission to emit criteria air pollutants from the source and the construction of a catalytic oxidizer to control VOC emissions from the bread baking oven. As a result of this request, the source will be transitioning from a Registration and will be issued Minor Source Operating Permit with New Source Review.

Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

(a) Registration No. R073-18775-00039, issued on April 6, 2004.

(b) Notice-Only Change No. 073-24649-00039, issued on June 27, 2007.

Due to this application, the source is transitioning from a Registration to a Minor Source Operating Permit with New Source Review.

County Attainment Status

The source is located in Jasper County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O_3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

(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. Therefore, VOC and NOx emissions are considered when

evaluating the rule applicability relating to ozone. Jasper County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) $PM_{2.5}$
Jasper County has been classified as attainment for $PM_{2.5}$. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for $PM_{2.5}$ emissions until 326 IAC 2-2 is revised.

(c) Other Criteria Pollutants
Jasper 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

(a) The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-6.1 (Minor Source Operating Permits) applicability.

(b) Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD, Emission Offset, and Part 70 Permit applicability.

Background and Description of Permitted Emission Units

The Office of Air Quality (OAQ) has reviewed an application, submitted by White Castle System, Inc. on October 22, 2010, relating to the transition from a Registration to a MSOP, due to a re-evaluation of the potential to emit criteria air pollutants from the source and the installation of a catalytic oxidizer to control VOC emissions from the bread baking oven. No new emission units, other than the addition of the control device, were added to the permit.

The source consists of the following permitted emission units:

(a) One (1) bread baking line, consisting of a proof box and a natural gas-fired bread baking oven, identified as P001, with a maximum heat input capacity of 3.1 MMBtu/hr, and a maximum baking rate of 3,400 pounds of bread per hour, constructed in 1984, and venting to stack #1. The natural gas-fired bread baking oven is equipped with a catalytic oxidizer for VOC control, approved for construction in 2011.

(b) One (1) natural gas-fired boiler, identified as B001, with a maximum heat input capacity of 2.0 million British thermal units per hour (MMBtu/hr), constructed in 2007, and venting to stack #2;

(c) Three (3) flour storage silos each with a capacity of 110,000 pounds, with a pneumatic conveying system with a fabric filter on each silo. These silos were constructed in 1984;

(d) Flour handling system, which includes two (2) weigh feeders and two (2) flour mixers, with a total capacity of 2,200 pounds per hour, each emission unit is controlled by a dedicated filter fabric.

(e) One (1) natural gas-fired production air handler unit, identified as H001, with a maximum heat input capacity of 1.98 MMBtu/hour.

(f) One (1) natural gas-fired boiler room air handler, identified as H002, with a maximum heat input capacity of 0.30 MMBtu/hour.

(g) One (1) natural gas-fired boiler room water heater, identified as H003, with a maximum heat input capacity of 0.30 MMBtu/hour.

(h) One (1) natural gas-fired boiler unit heater, identified as H004, with a maximum heat input capacity of 0.05 MMBtu/hour.

(i) One (1) natural gas-fired office roof top unit, identified as H005, with a maximum heat input capacity of 0.20 MMBtu/hour.

(j) One (1) natural gas-fired dock north heater, identified as H006, with a maximum heat input capacity of 0.13 MMBtu/hour.

(k) One (1) natural gas-fired mixer area north heater, identified as H007, with a maximum heat input capacity of 0.13 MMBtu/hour.

(l) One (1) natural gas-fired dock south heater, identified as H008, with a maximum heat input capacity of 0.13 MMBtu/hour.

(m) One (1) natural gas-fired production bailer unit, identified as H009, with a maximum heat input capacity of 0.13 MMBtu/hour.

(n) One (1) natural gas-fired northwest production unit heater, identified as H010, with a maximum heat input capacity of 0.13 MMBtu/hour.

(o) One (1) natural gas-fired southwest production unit heater, identified as H011, with a maximum heat input capacity of 0.13 MMBtu/hour.

(p) One (1) natural gas-fired east B-Room heater unit, identified as H012, with a maximum heat input capacity of 0.13 MMBtu/hour.

(q) One (1) natural gas-fired west B-Room heater unit, identified as H013, with a maximum heat input capacity of 0.13 MMBtu/hour.

(r) One (1) natural gas-fired mezzanine heater unit, identified as H014, with a maximum heat input capacity of 0.05 MMBtu/hour.

(s) One (1) natural gas-fired A-Room heater unit, identified as H015, with a maximum heat input capacity of 0.05 MMBtu/hour.

(t) One (1) natural gas-fired dock middle heater, identified as H016, with a maximum heat input capacity of 0.13 MMBtu/hour.

"Integral Part of the Process" Determination

On January 10, 2011, White Castle submitted the following justification for considering the filter socks as an integral part of the flour handling system.

> The filter socks should be considered an integral part of the flour handling system since there is a significant economic benefit gained by collecting the flour for use in the baking process. The costs and savings of installing and operating the filter socks are as follows:

Costs:

(1) The annualized initial capital cost is:

(a) Flour Silo - per 3 filters replaced: $200

(b) Flour hoppers - per 2 filters replaced: $68

(c) Mixers - per 2 filters replaced: $68

The total annualized capital cost is $ 336.

(2) The annualized operating cost is:

(a) Flour silo operating costs: $140

(b) Flour hopper operating costs: $245

(c) Mixer operating costs: $675

The total annualized operating cost is $1060.

Savings:

(1) The permittee states that at maximum production, 58,040 pounds per year of flour could be recovered by the filter socks. At a cost of $0.2325 per pound of flour, this would result in a maximum recovery of $13,494.30 worth of product per year.

Based on the costs and savings above, the overall net annualized cost savings of installing and operating the baghouse is $12,098.30 per year.

IDEM, OAQ has evaluated the justification and agreed that the filter socks described above will be considered as an integral part of the flour storage silo operation, since the filter socks have an overwhelming positive net economic effect. Therefore, the permitting level will be determined using the potential to emit after the filter socks. Particulate from the storage silo shall be controlled at all times that the storage silo is being filled and the Permittee shall operate the filter socks in accordance with manufacturer's specifications.

Enforcement Issues

IDEM is aware that the potential to emit VOC from the source is greater than twenty-five (25) tons per twelve (12) consecutive month period and the source has been operating under a Registration. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction permit rules.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – MSOP

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.

Pollutant	Potential To Emit (tons/year)
PM	0.21
PM10[(1)]	0.42
PM2.5	0.42
SO_2	0.03
NO_x	4.62
VOC	54.06
CO	3.88

(1) 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".

HAPs	Potential To Emit (tons/year)
acetaldehyde	1.62
hexane	0.08
TOTAL HAPs	**1.70**

(a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of VOC is less than one hundred (100) tons per year, but greater than or equal to twenty-five (25) tons per year. The PTE of all other regulated criteria pollutants are less than twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-6.1. A Minor Source Operating Permit (MSOP) 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.

PTE of the Entire Source After Issuance of the MSOP

The table below summarizes the potential to emit of the entire source after issuance of this MSOP, reflecting all limits, of the emission units.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of MSOP (tons/year)								
	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	Total HAPs	Worst Single HAP
Baking Oven**	0.00	0.00	0.00	0.00	0.00	2.37	0.00	1.42	1.47 (acetaldehyde)
Proof Box	0.00	0.00	0.00	0.00	0.00	4.75	0.00	0.14	0.15 (acetaldehyde)
Natural Gas Combustion	0.09	0.35	0.35	0.03	4.62	0.25	3.88	0.09	0.08 (hexane)
Flour Handling***	0.13	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Total PTE of Entire Source	0.21	0.42	0.42	0.03	4.62	7.38	3.88	1.65	1.62 (acetaldehyde)
Title V Major Source Thresholds	NA	100	100	100	100	100	100	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	NA	NA

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".
**Pursuant to 326 IAC 8-1-6, the VOC emissions from the bread baking oven (P001) shall be controlled by a catalytic oxidizer and the overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.
***The fabric filters controlling particulate emissions from the flour handling are considered integral to the process. Therefore, the potential PM/PM10/PM2.5 emissions from flour handling are considered after controls for the purpose of permit level determination. However, for purposes of determining the applicability of Prevention of Significant Deterioration (PSD) and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), potential particulate matter emissions from the flour handling operations were calculated before consideration of controls.

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 for the one (1) natural gas-fired boiler, identified as B001, since the maximum design heat input capacity is less than ten (10) MMBtu per hour.

(b) 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)

(c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for , Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD (326 IAC 20-95), are not included in the permit for the natural gas-fired boiler, identified as B001, since this source is not a major source of HAPs.

(d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63.11193, Subpart JJJJJJ (326 IAC 20-1), are not included in the permit because B001 is a gas-fired boiler, as defined by 40 CFR 63.11237, and is specifically exempted under 40 CFR 63.11195(e).

(e) There are no 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)

(f) 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 2-6.1 (Minor Source Operating Permits (MSOP))
MSOP applicability is discussed under the Permit Level Determination – MSOP section above.

(b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
This source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit of all attainment regulated pollutants are less than 250 tons per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

(c) 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.

(d) 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.

(e) 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 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.

(f) 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.

(g) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5, because it does not have potential fugitive particulate emissions greater than 25 tons per year.

Flour Handling

(h) Pursuant to 326 IAC 6-3-2(e) the particulate matter (PM) from the following emission units shall not exceed the allowable emission rates as listed in the table below:

Emission Unit	Process Weight Rate (tons/hour)	326 IAC 6-3-2 Allowable Particulate Emission Rate (pounds/hour)	Uncontrolled Potential Emission Rate (pounds/hour)	Is a control device required to meet the limit?
Three (3) flour storage silos*	1.04	4.21	0.01	No
Two (2) weigh feeders*	1.10	4.37	0.01	No
Two (2) flour mixers*	1.10	4.37	0.01	No

*The fabric filter controlling particulate emissions for the three (3) flour storage silos, the two (2) weigh feeders and the two (2) flour mixers are considered integral to the process. Therefore, the potential emissions are considered after controls only to determine rule applicability.

These limitations are based on the following equation:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10P^{0.67}$$

Where: E = Rate of emission in pounds per hour, and
P = Process weight rate in tons per hour

Bread Baking Line

(i) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
The bread baking line (constructed in 1984) was constructed after January 1, 1980, and has potential VOC emissions greater than twenty-five (25) tons per year. Therefore, the bread baking line is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions from the bread baking line using the Best Available Control Technology (BACT). According to the BACT analysis contained in Appendix B, IDEM, OAQ has determined that the following requirements represent BACT for the bread baking line::

Natural Gas-Fired Bread Baking Oven (P001)

(a) The VOC emissions from the natural gas-fired bread baking oven (P001) shall be controlled by a catalytic oxidizer.

(b) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the natural gas-fired bread baking oven (P001) shall not exceed 0.54 pounds per hour.

Proof Box

(a) The source shall operate the proof box associated with the bread baking line in accordance the manufacturer's design and operating specifications.

(b) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the proof box associated with Line 1, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Scrape, sweep, and remove dough/product from floor inside proof box.

(2) Four (4) Week Cleaning Procedure:

(A) Wipe off interior proof box channel rails where needed;
(B) Remove any dough or oil accumulations from channel rails and cross over framework; and
(C) Wash or mop the floor of the proof box. Remove accumulated waste from floor.

Compliance with the above limits and conditions will satisfy the requirements of 326 IAC 8-1-6 (BACT).

(j) There are no other 326 IAC 8 Rules that are applicable to the bread baking line.

Natural Gas-Fired Boiler

(k) 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)
The one (1) natural gas-fired boiler, identified as B001, was constructed in 2007 and has a maximum heat input capacity of 2.0 MMBtu/hr.

Pursuant to 326 IAC 6-2-4, because the total source maximum operating capacity rating is less than 10 MMBtu/hr, the particulate emissions from this boiler shall not exceed 0.60 lb/MMBtu.

The potential to emit particulate from boiler B001 is less than 0.60 lb/MMBtu. Therefore, the boiler is able to comply with this limit.

Compliance Determination, Monitoring and Testing Requirements

(a) The compliance monitoring requirements applicable to the baking oven, identified as P001, are as follows:

Stack ID	Parameter	Frequency	Range	Excursions and Exceedances
Stack #1	Temperature	Continuous	3 hr avg. > 600 °F	Response Steps
	Duct Pressure / Fan Amperage	Daily	Normal - Abnormal	

(b) The testing requirements applicable to the baking oven, identified as P001, are as follows:

Stack ID	Timeframe for Testing	Pollutant(s)	Frequency of Testing
Stack #1	No later than 60 days after achieving maximum capacity, but not later than 180 days after start-up.	VOC	Once every five (5) years

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 October 22, 2010.

The operation of this source shall be subject to the conditions of the attached proposed New Source Review and MSOP No. M073-29819-00039. The staff recommends to the Commissioner that this New Source Review and MSOP 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.in.gov/idem

Appendix A: Emission Calculations
Summary

Company Name: White Castle
Address City IN Zip: 809 North Melville Street, Rensselaer, IN 47978
Permit Number: M073-29819-00039
Reviewer: Summer Keown
Date: May 17, 2011

Uncontrolled/Unlimited Potential to Emit

Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Single HAP	Total HAPs
Baking Oven	0.00	0.00	0.00	0.00	0.00	48.91	0.00	1.47 (acetaldehyde)	1.47
Proof Box	0.00	0.00	0.00	0.00	0.00	4.89	0.00	0.15 (acetaldehyde)	0.15
Natural Gas Combustion	0.09	0.35	0.35	0.03	4.62	0.25	3.88	0.08 (hexane)	0.09
Flour Handling*	44.58	15.62	15.62	0.00	0.00	0.00	0.00	0.00	0.00
Total	**44.67**	**15.97**	**15.97**	**0.03**	**4.62**	**54.06**	**3.88**	**1.62 (acetaldehyde)**	**1.70**

*For purposes of determining the applicability of Prevention of Significant Deterioration (PSD) and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), potential particulate matter emissions from the flour handling operations were calculated before consideration of controls

Controlled Potential to Emit

Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Single HAP	Total HAPs
Baking Oven**	0.00	0.00	0.00	0.00	0.00	2.45	0.00	1.47 (acetaldehyde)	1.47
Proof Box	0.00	0.00	0.00	0.00	0.00	4.89	0.00	0.15 (acetaldehyde)	0.15
Natural Gas Combustion	0.09	0.35	0.35	0.03	4.62	0.25	3.88	0.08 (hexane)	0.09
Flour Handling*	0.13	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.21**	**0.42**	**0.42**	**0.03**	**4.62**	**7.59**	**3.88**	**1.62 (acetaldehyde)**	**1.70**

*The fabric filters controlling particulate emissions from the flour handling are considered integral to the process. Therefore, the potential PM/PM10/PM2.5 emissions from flour handling are considered after controls for the purpose of permit level determination.
**Pursuant to 326 IAC 8-1-6, the VOC emissions from the bread baking oven (P001) shall be controlled by a catalytic oxidizer and the overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

Limited Potential to Emit

Emission Units	PM	PM10	PM2.5	SO2	NOx	VOC	CO	Single HAP	Total HAPs
Baking Oven**	0.00	0.00	0.00	0.00	0.00	2.45	0.00	1.47 (acetaldehyde)	1.47
Proof Box	0.00	0.00	0.00	0.00	0.00	4.89	0.00	0.15 (acetaldehyde)	0.15
Natural Gas Combustion	0.09	0.35	0.35	0.03	4.62	0.25	3.88	0.08 (hexane)	0.09
Flour Handling*	0.13	0.07	0.07	0.00	0.00	0.00	0.00	0.00	0.00
Total	**0.21**	**0.42**	**0.42**	**0.03**	**4.62**	**7.59**	**3.88**	**1.62 (acetaldehyde)**	**1.70**

*The fabric filters controlling particulate emissions from the flour handling are considered integral to the process. Therefore, the potential PM/PM10/PM2.5 emissions from flour handling are considered after controls for the purpose of permit level determination.
**Pursuant to 326 IAC 8-1-6, the VOC emissions from the bread baking oven (P001) shall be controlled by a catalytic oxidizer and the overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

Appendix A: Emissions Calculations
VOC from Bread Baking Line

Company Name: White Castle
Address City IN Zip: 809 North Melville Street, Rensselaer, IN 47978
Permit Number: M073-29819-00039
Reviewer: Summer Keown
Date: May 17, 2011

VOC Emission Factor (lbs VOC/tons bread baked) = 0.95Yi + 0.195ti - 0.51S - 0.86ts + 1.9(

Yi (%)	ti (hours)	S (percent)	ts (hours)	Emission Factor
4.5	2.02	0	0	6.57

This equation is from AP-42, Chapter 9.9.6 for Bread Baking.
Values for Yi, ti, S and ts were provided by the applicant

Uncontrolled Potential Emissions - Bread Baking Oven

Emission Unit	Post-baking Batch size (lbs)	Batches per hour	Emission Factor (lbs/ton bread baked)	Uncontrolled Potential VOC Emissions (lbs/hr)	Uncontrolled Potential VOC Emissions (tons/year)	Control Efficiency (%)*	Controlled Potential VOC Emissions (lbs/hr)	Controlled Potential VOC Emissions (tons/year)
Bread Baking Oven	850	4	6.57	11.17	48.91	95.00%	0.56	2.45

Proof Box emissions = 10% of Bread Baking Oven Emissions**

Uncontrolled Potential Bread Baking Oven VOC Emissions (tons/year)	Percentage	Uncontrolled Potential VOC Emissions from Proof Box (tons/year)
48.91	10.00%	4.89

Total Uncontrolled Potential VOC from Bread Baking Line = 53.80
Total Controlled Potential VOC from Bread Baking Line = 7.34

Methodology
Uncontrolled Potential VOC Emissions for Bread Baking Oven (lbs/hr) = Batch size (lbs) * Batches/hr * Emission Factor (lbs/ton) * 1 ton/2000 lbs
Uncontrolled Potential VOC Emissions for Bread Baking Oven (tons/year = Uncontrolled Potential VOC Emissions (lbs/hr) * 8760 hours/year * 1 ton/2000 lb
Controlled Potential VOC Emissions for Bread Baking Oven (lbs/hr) = Uncontrolled Potential VOC emissions (lbs/hr) * (1 - Control Efficiency (%)
Controlled Potential VOC Emissions for Bread Baking Oven (tons/year) = Uncontrolled Potential VOC emissions (tons/year) * (1 - Control Efficiency (%)
Uncontrolled Potential VOC Emissions from Proof Box (tons/year) = Uncontrolled Potential Bread Baking Oven VOC Emissions (tons/year) * 10%
*A control efficiency of a minimum of 95% VOC for the catalytic oxidizer is required by the permit

**The assumption that emissions from the proof box are 10% of those from the bread baking oven was derived from the "Alternative Control Technology for Bakery Oven Emissions" released by the U.S. EPA in 1992. IDEM, OAQ has agreed to accept this method of calculating VOC potential emissions from the proof box.

Appendix A: Emissions Calculations
Acetaldehyde from Bread Baking Line

Company Name: White Castle
Address City IN Zip: 809 North Melville Street, Rensselaer, IN 47978
Permit Number: M073-29819-00039
Reviewer: Summer Keown
Date: May 17, 2011

Emission Unit	Uncontrolled Potential VOC Emissions (tons/year)	Percentage of VOC that is acetaldehyde*	Uncontrolled Potential Acetaldehyde Emissions (tons/year)
Bread Baking Oven	48.91	3%	1.47
Proof Box	4.89	3%	0.15
Total			**1.61**

Methodology

Uncontrolled Potential Acetaldehyde Emissions (tons/year) = Uncontrolled Potential VOC Emissions (tons/year) * 3% acetaldehyde

*VOC emitted during fermentation (leavening) is assumed to be 97% ethanol and 3% acetaldehyde (VOC/HAP), based on the following documents and supporting information:

1. "Alternative Control Technology Document for Bakery Oven Emissions" (EPA 453/R-92-017, December 1992)
2. Henderson, D.C., 1977, "Commercial Bakeries as a Major Source of Reactive Volatile Organic Gases", U.S. EPA, Region XI Surveillance and Analysis Division

Appendix A: Emissions Calculations
Particulate Emissions from Flour Handling

Company Name: White Castle
Address City IN Zip: 809 North Melville Street, Rensselaer, IN 47978
Permit Number: M073-29819-00039
Reviewer: Summer Keown
Date: May 17, 2011

Emissions Unit	Maximum Throughput Rate (lbs/hr)	Maximum Throughput Rate for Three (3) Silos (tons/hr)	Uncontrolled PM Emission Factor (lb/ton)	Uncontrolled PM10/PM2.5 Emission Factor (lb/ton)	Uncontrolled Potential PM Emissions (lb/hour)	Uncontrolled Potential PM10/PM2.5 Emissions (lbs/hour)	Uncontrolled Potential PM Emissions (tons/yr)	Uncontrolled Potential PM10/PM2.5 Emissions (tons/yr)	Controlled PM Emission Factor (lb/ton)	Controlled PM10/PM2.5 Emission Factor (lb/ton)	Controlled Potential PM Emissions (tons/yr)	Controlled Potential PM10/PM2.5 Emissions (tons/yr)
Three (3) Flour Storage Silos	2083.33	1.04	3.14	1.10	3.27	1.15	14.33	5.02	0.0089	0.0049	0.04	0.02
Two (2) Weigh Feeders	2200	1.10	3.14	1.10	3.45	1.21	15.13	5.30	0.0089	0.0049	0.04	0.02
Two (2) Flour Mixers	2200	1.10	3.14	1.10	3.45	1.21	15.13	5.30	0.0089	0.0049	0.04	0.02
Total							**44.58**	**15.62**			**0.13**	**0.07**

Methodology
Maximum Throughput Rate for 3 Flour Storage Silos (lbs/hr) = 100 batches/day * 500 lbs/batch * 1 day/24 hours
Maximum Throughput Rate for 2 Weigh Feeders (lbs/hr) = Maximum capacity of 3,640 lbs/hour * 2 Weigh feeders
Maximum Throughput Rate for 2 Flour Mixers (lbs/hr) = Maximum capacity of 3,640 lbs/hour * 2 Flour mixers
Maximum Throughput Rate (tons/hr) = Maximum Throughput Rate (lbs/hr) * 1 ton/2000 lbs
Potential PM Emissions (tons/yr) = Maximum Throughput Rate (tons/hr) * Emission Factor (lb/ton) * 8760 hrs/yr * 1 ton/2000 lbs
Potential PM10/PM2.5 Emissions (tons/yr) = Maximum Throughput Rate (tons/hr) * Emission Factor (lb/ton) * 8760 hrs/yr * 1 ton/2000 lbs

Emission factors are from AP-42, Table 11.12-2 for Cement Supplement Unloading to Elevated Storage Silo (Pneumatic), 3-05-011-17, June 2006.

Appendix A: Emissions Calculations
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: White Castle
Address City IN Zip: 809 North Melville Street, Rensselaer, IN 47978
Permit Number: M073-29819-00039
Reviewer: Summer Keown
Date: May 17, 2011

		Pollutant	PM*	PM10*	SO2	NOx**	VOC	CO
		Emission Factor (lb/MMCF)	1.9	7.6	0.6	100	5.5	84.0
	Heat Input Capacity	Potential Throughput	Potential Emission tons/yr					
Emission Unit	MMBtu/hr	MMCF/yr	PM*	PM10*	SO2	NOx**	VOC	CO
Production Air Handler H001	1.98	17.36	0.016	0.066	0.005	0.868	0.048	0.729
Boiler Room Air Handler H002	0.30	2.59	0.002	0.010	0.001	0.129	0.007	0.109
Boiler Room Water Heater H003	0.30	2.63	0.002	0.010	0.001	0.131	0.007	0.110
Boiler Unit Unit Heater H004	0.05	0.39	0.000	0.001	0.000	0.020	0.001	0.017
Office Roof Top Unit H005	0.20	1.75	0.002	0.007	0.001	0.088	0.005	0.074
Dock North Heater H006	0.13	1.14	0.001	0.004	0.000	0.057	0.003	0.048
Mixer Area North Heater H007	0.13	1.14	0.001	0.004	0.000	0.057	0.003	0.048
Dock South Heater H008	0.13	1.10	0.001	0.004	0.000	0.055	0.003	0.046
Production Bailer Unit H009	0.13	1.10	0.001	0.004	0.000	0.055	0.003	0.046
Northwest Production Unit Heater H010	0.13	1.10	0.001	0.004	0.000	0.055	0.003	0.046
Southwest Production Unit Heater H011	0.13	1.10	0.001	0.004	0.000	0.055	0.003	0.046
East B-Room Heater Unit H012	0.13	1.10	0.001	0.004	0.000	0.055	0.003	0.046
West B-Room Heater Unit H013	0.13	1.10	0.001	0.004	0.000	0.055	0.003	0.046
Mezzanine Heater Unit H014	0.05	0.39	0.000	0.001	0.000	0.020	0.001	0.017
A-Room Heater Unit H015	0.05	0.39	0.000	0.001	0.000	0.020	0.001	0.017
Dock Middle Heater H016	0.13	1.14	0.001	0.004	0.000	0.057	0.003	0.048
Boiler B001	2.00	17.52	0.017	0.067	0.005	0.876	0.048	0.736
Oven P001	3.50	30.66	0.029	0.117	0.009	1.533	0.084	1.288
Catalytic Oxidizer	1.00	8.76	0.008	0.033	0.003	0.438	0.024	0.368
Totals	**10.55**		**0.09**	**0.35**	**0.03**	**4.62**	**0.25**	**3.88**

Pollutant	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
	Potential Emission tons/yr									
Emission Unit	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Production Air Handler H001	1.8E-05	1.0E-05	6.5E-04	0.016	3.0E-05	4.3E-06	9.5E-06	1.2E-05	3.3E-06	1.8E-05
Boiler Room Air Handler H002	1.8E-06	1.1E-06	6.6E-05	0.002	3.0E-06	4.4E-07	9.6E-07	1.2E-06	3.3E-07	1.8E-06
Boiler Room Water Heater H003	1.2E-06	6.8E-07	4.3E-05	0.001	1.9E-06	2.8E-07	6.3E-07	8.0E-07	2.2E-07	1.2E-06
Boiler Unit Unit Heater H004	1.2E-06	6.8E-07	4.3E-05	0.001	1.9E-06	2.8E-07	6.3E-07	8.0E-07	2.2E-07	1.2E-06
Office Roof Top Unit H005	1.1E-06	6.6E-07	4.1E-05	0.001	1.9E-06	2.7E-07	6.0E-07	7.7E-07	2.1E-07	1.1E-06
Dock North Heater H006	1.1E-06	6.6E-07	4.1E-05	0.001	1.9E-06	2.7E-07	6.0E-07	7.7E-07	2.1E-07	1.1E-06
Mixer Area North Heater H007	1.1E-06	6.6E-07	4.1E-05	0.001	1.9E-06	2.7E-07	6.0E-07	7.7E-07	2.1E-07	1.1E-06
Dock South Heater H008	1.1E-06	6.6E-07	4.1E-05	0.001	1.9E-06	2.7E-07	6.0E-07	7.7E-07	2.1E-07	1.1E-06
Production Bailer Unit H009	1.1E-06	6.6E-07	4.1E-05	0.001	1.9E-06	2.7E-07	6.0E-07	7.7E-07	2.1E-07	1.1E-06
Northwest Production Unit Heater H010	1.1E-06	6.6E-07	4.1E-05	0.001	1.9E-06	2.7E-07	6.0E-07	7.7E-07	2.1E-07	1.1E-06
Southwest Production Unit Heater H011	4.1E-07	2.4E-07	1.5E-05	0.000	6.7E-07	9.9E-08	2.2E-07	2.8E-07	7.5E-08	4.1E-07
East B-Room Heater Unit H012	4.1E-07	2.4E-07	1.5E-05	0.000	6.7E-07	9.9E-08	2.2E-07	2.8E-07	7.5E-08	4.1E-07
West B-Room Heater Unit H013	1.2E-06	6.8E-07	4.3E-05	0.001	1.9E-06	2.8E-07	6.3E-07	8.0E-07	2.2E-07	1.2E-06
Mezzanine Heater Unit H014	1.8E-05	1.1E-05	6.6E-04	0.016	3.0E-05	4.4E-06	9.6E-06	1.2E-05	3.3E-06	1.8E-05
A-Room Heater Unit H015	3.2E-05	1.8E-05	1.1E-03	0.028	5.2E-05	7.7E-06	1.7E-05	2.1E-05	5.8E-06	3.2E-05
Dock Middle Heater H016	9.2E-06	5.3E-06	3.3E-04	0.008	1.5E-05	2.2E-06	4.8E-06	6.1E-06	1.7E-06	9.2E-06
Boiler B001	1.2E-06	6.8E-07	4.3E-05	0.001	1.9E-06	2.8E-07	6.3E-07	8.0E-07	2.2E-07	1.2E-06
Oven P001	1.2E-06	6.8E-07	4.3E-05	0.001	1.9E-06	2.8E-07	6.3E-07	8.0E-07	2.2E-07	1.2E-06
Catalytic Oxidizer	1.1E-06	6.6E-07	4.1E-05	0.001	1.9E-06	2.7E-07	6.0E-07	7.7E-07	2.1E-07	1.1E-06
Totals	**9.5E-05**	**5.4E-05**	**3.4E-03**	**0.081**	**1.5E-04**	**2.3E-05**	**5.0E-05**	**6.3E-05**	**1.7E-05**	**9.5E-05**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
Potential Throughput (MMCF) = Combined Total Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMCF/1,000 MMBtu
Emission (tons/yr) = Throughput (MMCF/yr) * Emission Factor (lb/MMCF) / 2,000 lb/ton
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 (SUPPLEMENT D 3/98)
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu, MMCF = 1,000,000 Cubic Feet of Gas

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide
DCB = Dichlorobenzene
Pb = Lead
Cd = Cadmium
Cr = Chromium
Mn = Manganese
Ni = Nickel

Indiana Department of Environmental Management
Office of Air Quality

Appendix B
Best Available Control Technology (BACT) Analysis Determination

Source Background and Description

Source Name:	White Castle System, Inc.
Source Location:	809 North Melville Street, Rensselaer, IN 47978
County:	Jasper
SIC Code:	2051
Operation Permit No.:	M073-29819-00039
Permit Reviewer:	Jason R. Krawczyk

Background Information

On October 22, 2010, the Office of Air Quality (OAQ) received an application from White Castle System, Inc., requesting the addition of a catalytic oxidizer to the existing bread making line at their stationary bread baking operation, as well as an update of the potential emission calculations for the source. As a result of this request, the source will be transitioning from a Registration and will be issued a Minor Source Operating Permit with New Source Review. White Castle System, Inc. was issued Registration 073-18775-00039 on April 6, 2004.

The following existing emission units have the potential to emit volatile organic compounds greater than twenty-five (25) tons per twelve (12) consecutive month period and are not regulated under any other rule in 326 IAC 8. Pursuant to the provisions of 326 IAC 8-1-6 Best Available Control Technology, an analysis for VOC was performed for these units:

(a) One (1) baking line, consisting of a proof box and a natural gas-fired bread baking oven, identified as P001, with a maximum heat input capacity of 3.1 MMBtu/hr, and a maximum baking rate of 3,300 pounds of bread per hour, constructed in 1984, and venting to stack #1. The natural gas-fired bread baking oven is equipped with a catalytic oxidizer for VOC control, approved for construction in 2011.

IDEM, OAQ conducts BACT analyses in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, which outlines the steps for conducting a top-down BACT analysis. Those steps are listed below.

(1) Identify all potentially available control options;

(2) Eliminate technically infeasible control options;

(3) Rank remaining control technologies;

(4) Evaluate the most effective controls and document the results; and

(5) Select BACT.

Also in accordance with the *"Top-Down" Best Available Control Technology Guidance Document* outlined in the 1990 draft U.S. EPA *New Source Review Workshop Manual*, BACT analyses take into account the energy, environmental, and economic impacts of the control options. Emission reductions may be

determined through the application of available control techniques, process design, and/or operational limitations. Such reductions are necessary to demonstrate that the emissions remaining after application of BACT will not cause adverse environmental effects to public health and the environment.

VOC BACT Analysis

Step One: Identify All Potentially Available Control Technologies

The following potentially available control technologies were identified for controlling VOC emissions from the baking line:

(a) Catalytic Oxidation

Catalytic oxidation is the process of oxidizing organic contaminants in a waste gas stream within a heated chamber containing a catalyst bed in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The catalyst is used to lower the activation energy of the oxidation reaction. The residence time; temperature; flow velocity and mixing; the oxygen concentration; and type of catalyst used in the combustion chamber affect the oxidation rate and destruction efficiency. Catalytic oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases, and as with the thermal oxidizers, fume preheating devices are commonly used to minimize operating costs. Catalytic oxidizers are typically designed to have a residence time of 0.5 seconds or less and combustion chamber temperatures between 600 and 1,200°F. Catalytic systems are usually limited to 1100-1300°F outlet temperatures, which limits VOC inputs to a maximum of 25% of Lower Explosive Limit (LEL). VOC destruction efficiencies greater than 98% are achievable under certain operating conditions (EPA-453/R-92-017). However, based on the information reviewed for this BACT determination, a VOC destruction efficiency of 95% or a VOC outlet concentration of 10 ppmv or less is achievable on a consistent basis under normal operational conditions for a typical bakery oven.

(1) Precious Metal Type (Platinum, Palladium, etc.)

Precious metals catalyst chambers are usually constructed of a ceramic or metallic substrate with the catalyst applied to the substrate. The catalyst assembly is stationary. These catalysts are highly efficient in a clean state but are subject to deactivation by several mechanisms. Sulfur, phosphorus, halogens, bismuth and heavy metals such as zinc, lead, arsenic, antimony, mercury, iron oxide, tin, and silicon can poison the catalyst bed in a non-reversible manner. A thorough understanding of the VOC constituents is necessary to apply this type of control device.

(2) Non-Precious Metal Type (Chromium, Manganese, etc.)

These systems are usually less susceptible to poisoning and deactivation, but require larger amounts of catalyst. These are usually in bulk form, applied to a ceramic substance and are arranged on a grid or screen. Catalyst beds are usually fixed relative to fume flow; however, there are fluidized bed types that negate the blinding by organic solids. The VOC constituents must be known to apply this control device.

(b) Thermal Oxidizer:

Thermal oxidation is the process of oxidizing organic contaminants in a waste gas stream by raising the temperature above the auto-ignition point in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The residence time; temperature; flow velocity and mixing; and the oxygen concentration in the combustion chamber affect the oxidation rate and destruction efficiency. Thermal oxidizers typically require combustion

of an auxiliary fuel (e.g., natural gas) to maintain a combustion chamber temperature high enough to completely oxidize the contaminant gases. Thermal oxidizers are typically designed to have a residence time of one second or less and combustion chamber temperatures between 1,200 and 2,000°F. VOC destruction efficiencies greater than 98% are achievable under certain operating conditions (see EPA-453/R-92-017). However, a VOC destruction efficiency of 95% is achievable on a consistent basis under normal operational conditions for a typical bakery oven.

The three types of thermal oxidation systems include direct flame, recuperative, and regenerative thermal oxidizers, which are differentiated by the type of heat recovery equipment used.

(1) Direct Flame:

A direct flame thermal oxidizer consists of only a combustion chamber with no heat recovery equipment.

(2) Recuperative Thermal Oxidizer:

In a recuperative thermal oxidizer, the waste gas stream is preheated using the heat content of the treated gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings.

(3) Regenerative Thermal Oxidizer:

In a regenerative thermal oxidizer, a high-density media such as a packed ceramic bed, which was heated in a previous cycle, is used to preheat the incoming waste gas stream, resulting in improved oxidizer efficiency and significant fuel cost savings.

In general, thermal oxidizers are less efficient at treating waste gas streams with highly variable flow rates, since the variable flow rate results in varying residence times, combustion chamber temperature, and poor mixing.

(c) Wet Packed Bed Scrubber:

A wet packed bed scrubber is an absorption system in which a waste gas stream interacts with a scrubbing liquid inside a contact chamber containing a bed of packing media. The scrubber strips contaminant gases from the waste gas stream through the process of dissolution. Water is the most commonly used scrubbing liquid. Other solvents may be used depending on the components of the waste gas stream. Based on information provided by vendors, a wet packed bed scrubber can achieve a VOC removal efficiency of at least 95% on a consistent basis under normal operational conditions for a typical bakery oven.

(d) Bio-filtration:

Bio-filtration systems utilize living organisms to decompose vapor organic compounds. The bio-filtration system consists of large beds of organic material, such as wood chips, which are continually irrigated such that each piece of bed material is covered with a thin film of water. The organisms live in the film and use the organic contaminants as a food source. The rate of degradation of the VOC in the film layer is a function of each specific compound's critical concentration and the biological activity in the film, as well as diffusion of the VOC through the bed.

The rate of the biodegradation process as well as diffusion limitations make these systems best suited to very low concentration vent streams, particularly odorous gas streams. Control efficiencies are dependent upon bed temperatures, humidity, and VOC concentration to ensure continued growth of the microorganisms. A common problem with bio-filter control efficiency is partial or complete "death" of the bed that can occur should any of these parameters or a

variation in the VOC content occur. Large flow rates require huge volumes of bed material, in some instances requiring the construction of entire buildings strictly to contain the necessary volume of bedding.

(e) Carbon Adsorption:

Carbon adsorption is a process by which VOC is retained on a granular carbon surface, which is highly porous and has a very large surface-to-volume ratio. Carbon adsorption systems can operate in two phases: adsorption and desorption. Adsorption is rapid and removes most of the VOC in the stream. Eventually, the adsorbent becomes saturated with the vapors and the system's efficiency drops. The adsorbent must be regenerated or replaced soon after efficiency begins to decline. In regenerative systems, the adsorbent is reactivated with steam or hot air in order to desorb the absorbate (VOC vapors) from the adsorbent, and the adsorbate and regenerated absorbent can be recovered for reuse or disposal. Non-regenerative systems require the removal of the spent adsorbent and replacement with fresh adsorbent.

(f) Condensation System:

Condensation is the process by which the temperature of the waste gas stream is lowered to below the dew points of the contaminants in the waste gas, causing a phase change from gas to liquid for the volatile constituents. The liquid is collected, and the concentration of the volatile constituent that was removed in the condensation step is reduced from the exhaust gas. A refrigeration condenser normally provides a VOC control efficiency greater than 90%. This technology is particularly applicable when concentration of VOCs in the gas stream is greater than one percent (1%).

Step Two: Eliminate Technically Infeasible Control Options

To be considered technically feasible, a control technology must either be successfully demonstrated on a unit or, if not demonstrated, then be "available and applicable". A technology is considered "available" if it can be obtained by the applicant through commercial channels. An available technology is considered "applicable" if it can reasonably be installed and operated on the unit in question.

The feasibility of each of the potentially applicable control options identified is evaluated below.

(a) Based on the information reviewed for this BACT determination, the use of carbon adsorption is infeasible because fats and oils in the bakery oven exhaust clog carbon pores. In addition, the ethanol is difficult to strip from the carbon.

(b) Based on the information reviewed for this BACT determination, the condensation method is infeasible because of the low VOC concentrations and high air flows, temperatures, and moisture content in the bakery oven exhaust. In addition, the fats and oils contained in the exhaust reduce the control efficiency and create sanitation concerns.

(c) Based on the information reviewed for this BACT determination, the use of a biofiltration system is infeasible because the high temperature exhaust stream from the baking ovens would inhibit microbiological activities. The outlet temperature of the ovens would exceed those in the required temperature range for mesophilic bacteria (nominally less than 106° F) and would kill off the microbes. Additionally, during the periods that the oven is shut-down for normal cleaning operations, the biofiltration system would have to be artificially fed in order to maintain system acclimation.

The following table summarizes other BACT determinations at similar sources or for similar processes that were identified in the EPA's RACT/BACT/LAER Clearinghouse (RBLC) under Process Type Code 70.550 (Bakeries and Snack Food), as well as IDEM, OAQ permits issued to date:

Company/ Location	Year Issued	Process Description	Control Device	BACT Emission Limits/Requirements	Reference
Harlan Bakeries, Inc. Avon, IN	2008	Bakery Oven	Catalytic Oxidizer	VOC emissions from the bagel oven shall be controlled by a catalytic oxidizer. Overall VOC efficiency of the catalytic oxidizer shall be 95%, or the VOC outlet concentration shall not exceed 10 ppmv. VOC emissions shall not exceed 0.36 lbs/hr.	Indiana Minor Source Operating Permit M063-24103-00059
Allen Foods, Inc. Elkhart, IN	2006	Bakery Oven	Catalytic Oxidizer	VOC emissions from the bread oven shall be controlled by a catalytic oxidizer. Overall VOC efficiency of the catalytic oxidizer shall be 95%, or the VOC outlet concentration shall not exceed 10 ppmv. VOC emissions shall not exceed 2.29 lbs/hr.	Indiana Federally Enforceable State Operating Permit F039-22633-00643
Holsum of Fort Wayne, Inc. Fort Wayne, IN	2005	Bakery Oven	None	VOC emission shall be limited to 60 tons per twelve (12) consecutive month period	Indiana Part 70 Significant Source Modification SSM 091-27352-00106
The Kroger Company - Indianapolis Bakery Indianapolis, IN	2003	Bakery Oven and Chain Lubricant	None	VOC emissions shall not exceed 49.0 tons per thirteen (13) consecutive twenty-eight (28) day period.	Indiana Federally Enforceable State Operating Permit Significant Permit Revision F097-16909-00161
Maple Leaf Bakery CA	1998	Bakery Oven	Catalytic Oxidizer	92 % Destruction Removal Efficiency Minimal 600°F Operating Temperature	RBLC ID: CA-0854 Permit No.: 0473-170
Freund Baking Company CA	1997	Bakery Oven	Catalytic Oxidizer	95.4 % Destruction Removal Efficiency	RBLC ID: CA-0859 Permit No.: 328570
Interstate Brands Corporation Indianapolis, IN	1997	Combined Bakery Ovens and Chain Lubricant	None	VOC emissions shall not exceed 95 tons per thirteen (13) consecutive twenty-eight (28) day period.	Indiana Federally Enforceable State Operating Permit F097-7413-00171
Holsum Bakery, Inc. AZ	1996	Bakery Oven	Quencher / Scrubber	81 % Control Efficiency 49.9 tons per year	RBLC ID: AZ-0029 Permit No.: 95-0432
KBI, Inc. Morristown, IN	1996	Dough Mixing, Fermentation, and Baking Area	None	VOC emissions shall not exceed a total of 99.9 tons per twelve (12) consecutive month period	Indiana Federally Enforceable State Operating Permit F145-15375-00037
Certified Grocers of California, Ltd CA	1990	Bakery Oven	Catalytic Afterburner	95% Control Efficiency	RBLC ID: CA-0468 Permit Nos.: 228274, 219899
Automatic Rolls of Virginia, Inc. VA	1988	Bakery Oven	None	13.80 pounds per hour 23.00 tons per year	RBLC ID: VA-0110 Permit No.: (7)40761

Step Three: Rank Feasible Technologies

The remaining technically feasible options for controlling VOC emissions from the natural gas-fired bread baking oven (P001) are as follows (listed in descending order of most technically feasible):

Options for VOC Control	Control Efficiency (%)
Catalytic Oxidizer	95%
Thermal Oxidizer	95%
Wet Packed Bed Scrubber	95%

IDEM is aware that that the above control technologies may be able to periodically achieve control efficiencies that exceed 95% under certain operating conditions. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has the discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that greater than 95% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

Step Four: Evaluate Top Control Alternatives

Further evaluation including economic, energy and environmental impacts are required for controlling VOC emissions from the bread baking line. Annualized costs were determined in accordance with the EPA guidance (EPA's Office of Air Quality Planning and Standards Control Cost Manual), with other relevant information provided by the respective equipment vendors, inputs from plant personnel, and engineering judgment.

The costs associated with controlling the entire bread line (natural gas-fired bread baking oven (P001) and the proof box) by means of a thermal oxidizer were not evaluated since the costs of installing a thermal oxidizer were determined to be significantly higher than that of a catalytic oxidizer, which achieves the same level of control.

The costs associated with controlling the entire bread line (natural gas-fired bread baking oven (P001) and the proof box) by means of a wet packed bed scrubber were not evaluated since the costs of installing a wet packed bed scrubber were determined to be significantly higher than those of a catalytic oxidizer or a thermal oxidizer, which achieve the same level of control.

The source proposed three possibilities for controlling potential VOC emissions from the bread baking line:

1) The first option evaluated was to control the VOC emissions from the entire bread line (proof box and oven). This option would include the installation of a clean room surrounding the proof box as well as the conveyor system between the proof box and the oven. Additional air handlers would be required to direct airflow to a catalytic oxidizer that would be installed on the bread baking oven.

2) The second option evaluated was to control VOC emissions from the proof box only. This option would include the installation of a clean room surrounding the proof box as well as the conveyor

system between the proof box and the oven. Additional air handlers would be required to direct airflow to a free standing catalytic oxidizer.

3) The third option evaluated was to control the VOC emissions from the natural gas-fired bread baking oven (P001). This option would include the installation of a catalytic oxidizer installed on the bread baking oven.

Pursuant to Section IV.D.2.c of EPA's BACT Guidance Document, costs that are within the range of normal costs for a control method may be reviewed in comparison to similar sources. This comparison may allow for the elimination of a technologically- and otherwise economically-feasible control option, provided that the costs of pollutant removal for the subject source are unduly high when compared to the costs borne by sources in recent BACT determinations.

The technologically-feasible options for controlling VOC emissions from the bakery line and the costs estimated for White Castle System, Inc. to purchase and operate each control method are summarized in Appendix C. The cost effectiveness for similar controls at similar facilities are not available for comparison for the proof boxes because there are currently no sources within the United States or any other country where control devices have been known to be implemented for VOC control of proof boxes. The costs for installing and operating control devices to control emissions from only the oven are comparable with previously performed Best Available Control Technology (BACT) determinations.

Facility	Cost for Controlling VOCs from Entire Line (Proof Box* & Oven) ($ / Ton Removed)	Cost for Controlling VOCs from Proof Box* Only ($ / Ton Removed)	Cost for Controlling VOCs from Oven Only ($ / Ton Removed)
Bread Line	$23,651	$260,158	$3,827

Note:
*Costs associated with controlling proof boxes are theoretical. These types of facilities have never been required to control VOC emissions.

The cost associated with controlling the combined 52.22 tons of VOC emitted from both the natural gas-fired bread baking oven (P001) and the proof box associated with the bread line has been determined to be $23,651 per ton of VOC removed.

The cost associated with controlling the 47.47 tons of VOC emitted from the natural gas-fired bread baking oven (P001) is $3,827 per ton of VOC removed.

The additional cost associated with controlling the 4.75 tons of VOC emitted from the proof box associated with the bread line is $221,886 per ton of VOC removed. This is equivalent to $1,053,360 per year to control the emissions from the proof box.

Notes: The annual cost to control emissions from the proof box was calculated by taking the difference from the Total Annualized Cost of installing a control device for controlling emissions from the entire baking line (proof box and oven) and the Total Annualized Cost of installing a control device for controlling emissions from the oven only.

$1,235,049 (TAC for controlling proof box & oven) - $181,689 (TAC for controlling oven only) = $1,503,360

The cost per ton of VOC removed was calculated by dividing the annual cost to control the emissions by the tons of VOC emitted from the proof box.

$$\frac{\$1,503,360 \text{ (additional cost for controlling proof box)}}{4.75 \text{ (tons VOC emitted from proof box)}} = \$221,866 \text{ (additional cost per ton VOC removed)}$$

In order to control the 4.75 tons of VOC emissions, the source would be required to install additional air handlers, resulting in the combustion of 3.24 million cubic feet of natural gas per year (MMCF/yr). The combustion results in the following potentials to emit:

PM (tons/yr)	PM10 (tons/yr)	PM2.5 (tons/yr)	VOC (tons/yr)	SO2 (tons/yr)	CO (tons/yr)	NOx (tons/yr)	Combined HAPs (tons/yr)	CO2e (tons/yr)
0.003	0.01	0.01	0.01	0.001	0.14	0.16	0.003	195.82

IDEM, OAQ recognizes that the large incremental increase in controlling VOC emissions from the proof box associated with the bread line would be excessive in costs. The cost associated with controlling one ton of VOC would increase from $3,827 per ton emitted from the natural gas-fire baking oven (P001) to $221,886 for each ton emitted from the proof box. The environmental benefit from the reduction in the proof box emissions would be minimal compared to the cost associated with such a small reduction in VOC emissions. Ninety and ninety one-hundredths (90.90) percent of the emissions from the bread line are being emitted from the natural gas-fired bread baking oven (P001) compared to the nine and ten one-hundredths (9.10) percent that is emitted from the proof box.

The cost for controlling one ton of VOC from the bread line (proof box and P001) is $23,651 which is economically infeasible.

The source proposes that requiring add-on controls for the proof box would place them at a significant economic disadvantage in the baking industry. The source proposes to install a catalytic oxidizer to control emissions from the natural gas-fired bread baking oven (P001), to operate the proof box in accordance with the manufacturer's design and operating specifications, and to sanitize the proof box in accordance with accepted industry procedures and practices along with Food and Drug Administration requirements.

Step Five: Select BACT

IDEM has determined that the best available control technology (BACT) to control VOC emissions from the bread line, shall be as follows:

Natural Gas-Fired Bread Baking Oven (P001)

(a) The VOC emissions from the natural gas-fired bread baking oven (P001) shall be controlled by a catalytic oxidizer.

(b) The overall VOC control efficiency for the catalytic oxidizer (including the capture efficiency and destruction efficiency) shall be at least 95%, or the VOC outlet concentration shall not exceed 10 ppmv.

(c) The VOC emissions from the natural gas-fired bread baking oven (P001) shall not exceed 0.542 pounds per hour.

Proof Box

(a) The source shall operate the proof box associated with the bread baking line in accordance the manufacturer's design and operating specifications.

(b) In order to ensure proper operation and to minimize potential emissions, the source shall perform proof box cleaning operations for the proof box associated with Line 1, on a tiered cleaning schedule and perform at a minimum, the following operations, or their equivalent, in accordance with their Sanitation Standard Operating Procedure:

(1) Weekly Cleaning Procedure:

(A) Scrape, sweep, and remove dough/product from floor inside proof box.

(2) Four (4) Week Cleaning Procedure:

(A) Wipe off interior proof box channel rails where needed;
(B) Remove any dough or oil accumulations from channel rails and cross over framework; and
(C) Wash or mop the floor of the proof box. Remove accumulated waste from floor.

Compliance with the above limits and conditions will satisfy the requirements of 326 IAC 8-1-6 (BACT).

IDEM Contact

Questions regarding this BACT Analysis can be directed to Jason R. Krawczyk at the Indiana Department Environmental Management, Office of Air Quality, 100 North Senate Avenue, MC 61-53, Room 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5174 or toll free at 1-800-451-6027 extension 4-5174.

Appendix C: Cost Analyses for Control Devices
Controlling the Bread Oven (P001) Only of the
One (1) Baking Line

Company Name: White Castle System, Inc.
Address City IN Zip: 809 North Melville Street, Rennselaer, IN 47978
Permit Number: M073-29819-00039
Plt ID: 073-00039
Reviewer: Jason R. Krawczyk
Date: April 12, 2011

Controlling Emissions from the Bread Oven (P001)					Control Devices		
					Catalytic Oxidizer	Thermal Oxidizer	Scrubber
DIRECT COST (Pollution Control Equipment)		**Unit Cost**			**TOTAL ($)**	**TOTAL ($)**	**TOTAL ($)**
Direct Purchased Equipment							
	Equipment Total (A)*	A =			$106,165	$234,264	$319,205
	Instrumentation		0.10	A	$10,617	$23,426	$31,921
	Sales Taxes		0.07	A	$7,432	$16,398	$22,344
	Freight		0.05	A	$5,308	$11,713	$15,960
Total Equipment Costs (B)		**B =**			**$129,521**	**$285,802**	**$389,430**
Direct Installation Cost							
	Foundation and Support*		0.08	B	$18,975	$22,864	$31,154
	Auxiliaries - Ductwork / Fittings (CSM Worldwide)*				$182,000	$182,000	$182,000
	Handling and Erection*		0.14	B	$840	$40,012	$54,520
	Piping*		0.02	B	$2,110	$5,716	$7,789
	Insulation and Painting*		0.01	B	$0	$2,858	$3,894
	Electrical*		0.04	B	$2,911	$11,432	$15,577
	Site Preparation				$0	$0	$0
	Other (Painting)		0.01	B	$0	$2,858	$3,894
Total Direct Installation Costs					**$206,836**	**$267,741**	**$298,829**
TOTAL Direct Investment (TDI) =							
(Total Equipment Cost + Total Direct Installation Cost)		**TDI =**			**$336,357**	**$553,543**	**$688,259**
Indirect Installation Costs							
	Engineering and Supervision		0.1	B	$12,952	$28,580	$38,943
	Construction and Field Expenses		0.05	B	$6,476	$14,290	$19,472
	Contractor Fees		0.1	B	$12,952	$28,580	$38,943
	Start-up and Performance Tests		0.03	B	$5,000	$8,574	$11,683
	Overall Contingencies		0.03	B	$3,886	$8,574	$11,683
	Working Capital				$0	$0	$0
Total Indirect Installation Costs (TIC)		**TIC =**			**$41,266**	**$88,599**	**$120,723**
TOTAL CAPITAL INVESTMENT (TCI) = (TDI +TIC)		**TCI =**			**$377,623**	**$642,141**	**$808,982**
ANNUAL OPERATION & MAINTENANCE							
Direct Operating Costs (DA)							
	Operating Labor (Engineering Estimate)	F			$12,480	$12,480	$24,960
	Supervisor Labor	F1=	0.15	F	$1,872	$1,872	$3,744
	Maintenance Labor (Engineering Estimate)	F2=			$6,500	$6,500	$6,500
	Maintenance Parts (Engineering Estimate)	F3=			$6,500	$6,500	$6,500
	Gas & Electric (Equipment Ratings)				$62,722	$84,473	$6,703
	Water				$0	$0	$66,288
	Water Surcharge				$0	$0	$81,203
	Replacement Parts				$10,000	$8,000	$6,000
Total Direct Operating Costs (DA)		**DA =**			**$100,074**	**$119,825**	**$201,898**
Indirect Operating Costs (IC)							
	Overhead (Engineering Estimate)		0.60	(Sum F:F3)	$16,411	$16,411	$25,022
	Insurance & Administrative Costs		0.04	TCI	$15,105	$25,686	$32,359
	Capital Recovery Cost (Assumes 5.5% interest over 10 years)				$50,099	$85,193	$107,328
Total Indirect Operating Costs (IA)		**IA =**			**$31,516**	**$42,097**	**$57,382**
	Heat Recovery Credits				$0	$0	$0
Total Operating Costs (DA + IA - Heat Recovery Credits)		**TOC =**			**$131,590**	**$161,922**	**$259,280**
Total Annualized Cost (Capital Recovery Cost + TOC)		**TAC =**			**$181,689**	**$247,115**	**$366,607**
Tons VOC Removed @ 95.0% =					47.47	47.47	47.47
Cost per Ton VOC Removed (TAC / Tons VOC Removed) =					**$3,827**	**$5,205**	**$7,722**

Note:
*Costs associated with installing a catalytic oxidizer are based on the Net Book Value of a 5 year old CSM Worldwide Model 30A and actual costs for installation.
Capital costs and various operating information from proposals from 2003 for catalytic oxidation and thermal oxidation.
Scrubber costs scaled from Allen Foods, Inc. permit no. F039-22633-00643, dated July 13, 2006 and adjusted for CPI
Water and water surcharges adjusted using power rule scale factor and 0.6 exponent as presented in Ohio EPA Engineering Guide # 46.
Electricity and natural gas unit rates from actual bills.
Power Rule used to estimate electricity usage for scrubber rather than unit cost.

Appendix C: Cost Analyses for Control Devices Controlling the Proof Box and Bread Oven (P001) of the One (1) Baking Line

Company Name: White Castle System, Inc.
Address City IN Zip: 809 North Melville Street, Rennselaer, IN 47978
Permit Number: M073-29819-00039
Plt ID: 073-00039
Reviewer: Jason R. Krawczyk
Date: April 12, 2011

Clean Room / Catalytic Oxidizer / Air Handlers			
DIRECT COST (Pollution Control Equipment)		**Unit Cost**	**TOTAL ($)**
Direct Purchased Equipment			
	Equipment Total (A)	A =	$1,796,000
	Instrumentation	0.10 A	$179,600
	Sales Taxes	0.07 A	$125,720
	Freight	0.05 A	$89,800
Total Equipment Costs (B)		**B =**	**$2,191,120**
Direct Installation Cost			
	Foundation and Support (Engineering Estimate)		$25,000
	Auxiliaries - Ductwork / Fittings (CSM Worldwide)		$400,000
	Handling and Erection (Engineering Estimate)		$10,000
	Piping		
	Insulation and Painting		
	Electrical (Engineering Estimate)		$25,000
	Site Preparation		
	Other		
Total Direct Installation Costs			**$460,000**
TOTAL Direct Investment (TDI) = (Total Equipment Cost + Total Direct Installation Cost)		**TDI =**	**$2,651,120**
Indirect Installation Costs			
	Engineering and Supervision (Engineering Estimate)		$200,000
	Construction and Field Expenses		
	Contractor Fees		
	Start-up and Performance Tests		
	Performance Test		
	Overall Contingencies (Conceptual Design Estimate)	0.25 TDI	$662,780
	Working Capital		
Total Indirect Installation Costs (TIC)		**TIC =**	**$862,780**
TOTAL CAPITAL INVESTMENT (TCI) = (TDI +TIC)		**TCI =**	**$3,513,900**
ANNUAL OPERATION & MAINTENANCE			
Direct Operating Costs (DA)			
	Operating Labor - Sanitation -2 people (Plant Manager fully loaded)		$124,800
	Operating Labor - Additional Operations- 4 people (Plant Manager fully loaded)		$232,960
	Maintenance Labor - 1 person (Plant Manager fully loaded)		$67,800
	Maintenance Parts & Labor (Engineering Estimate)		$30,000
	Gas & Electric (Equipment Ratings)		$303,300
Total Direct Operating Costs (DA)		**DA =**	**$758,860**
Indirect Operating Costs (IC)			
	Overhead (Engineering Estimate)		$5,000
	Insurance & Administrative Costs		$5,000
	Capital Recovery Cost (Assumes 5.5% interest over 10 years)		$466,189
Total Indirect Operating Costs (IA)		**IA =**	**$10,000**
	Heat Recovery Credits		$0
Total Operating Costs (DA + IA - Heat Recovery Credits)		**TOC =**	**$768,860**
Total Annualized Cost (Capital Recovery Cost + TOC)		**TAC =**	**$1,235,049**
Tons VOC Removed @ 95.0% =			52.22
Cost per Ton VOC Removed (TAC / Tons VOC Removed) =			**$23,651**

Note:

Costs associated with controlling emissions with a wet scrubber or via thermal oxidation were not evaluated since the cost of installing a catalytic oxidizer was determined to be the most economical.

Appendix C: Cost Analyses for Control Devices
Controlling the Proof Box Only of the
One (1) Baking Line

Company Name: White Castle System, Inc.
Address City IN Zip: 809 North Melville Street, Rennselaer, IN 47978
Permit Number: M073-29819-00039
Plt ID: 073-00039
Reviewer: Jason R. Krawczyk
Date: April 12, 2011

Clean Room / Catalytic Oxidizer / Air Handlers		
DIRECT COST (Pollution Control Equipment)	**Unit Cost**	**TOTAL ($)**
Direct Purchased Equipment		
Equipment Total (A)	A =	$1,796,000
Instrumentation	0.10 A	$179,600
Sales Taxes	0.07 A	$125,720
Freight	0.05 A	$89,800
Total Equipment Costs (B)	**B =**	**$2,191,120**
Direct Installation Cost		
Foundation and Support (Engineering Estimate)		$25,000
Auxiliaries - Ductwork / Fittings (CSM Worldwide)		$400,000
Handling and Erection (Engineering Estimate)		$10,000
Piping		
Insulation and Painting		
Electrical (Engineering Estimate)		$25,000
Site Preparation		
Other		
Total Direct Installation Costs		**$460,000**
TOTAL Direct Investment (TDI) = (Total Equipment Cost + Total Direct Installation Cost)	**TDI =**	**$2,651,120**
Indirect Installation Costs		
Engineering and Supervision (Engineering Estimate)		$200,000
Construction and Field Expenses		
Contractor Fees		
Start-up and Performance Tests		
Performance Test		
Overall Contingencies (Conceptual Design Estimate)	0.25 TDI	$662,780
Working Capital		
Total Indirect Installation Costs (TIC)	**TIC =**	**$862,780**
TOTAL CAPITAL INVESTMENT (TCI) = (TDI +TIC)	**TCI =**	**$3,513,900**
ANNUAL OPERATION & MAINTENANCE		
Direct Operating Costs (DA)		
Operating Labor - Sanitation -2 people (Plant Manager fully loaded)		$124,800
Operating Labor - Additional Operations- 4 people (Plant Manager fully loaded)		$232,960
Maintenance Labor - 1 person (Plant Manager fully loaded)		$67,800
Maintenance Parts & Labor (Engineering Estimate)		$30,000
Gas & Electric (Equipment Ratings)		$303,300
Total Direct Operating Costs (DA)	**DA =**	**$758,860**
Indirect Operating Costs (IC)		
Overhead (Engineering Estimate)		$5,000
Insurance & Administrative Costs		$5,000
Capital Recovery Cost (Assumes 5.5% interest over 10 years)		$466,189
Total Indirect Operating Costs (IA)	**IA =**	**$10,000**
Heat Recovery Credits		$0
Total Operating Costs (DA + IA - Heat Recovery Credits)	**TOC =**	**$768,860**
Total Annualized Cost (Capital Recovery Cost + TOC)	**TAC =**	**$1,235,049**
Tons VOC Removed @ 95.0% =		4.75
Cost per Ton VOC Removed (TAC / Tons VOC Removed) =		**$260,158**

Note:

Costs associated with controlling emissions with a wet scrubber or via thermal oxidation were not evaluated since the cost of installing a catalytic oxidizer was determined to be the most economical.

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: Jeffrey Miller
White Castle System, Inc.
555 W Goodale St
Columbus, OH 43215

DATE: October 14, 2011

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

SUBJECT: Final Decision
MSOP
073-29819-00039

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.

Mail Code 61-53

IDEM Staff	CDENNY 10/14/2011 White Castle System, Inc. 073-29819-00039 (final)		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	Type of Mail: **CERTIFICATE OF MAILING ONLY**

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		Jeffrey Miller White Castle System, Inc. 555 W Goodale St Columbus OH 43215 (Source CAATS)									
2		Michael R. Smith Vice-President White Castle System, Inc. 555 W Goodale St Columbus OH 43215 *(RO CAATS)*									
3		Mr. Charles L. Berger Berger & Berger, Attorneys at Law 313 Main Street Evansville IN 47700 *(Affected Party)*									
4		Jasper County Commissioners 115 W. Washington Street Rensselaer IN 47978 *(Local Official)*									
5		Jasper County Health Department 105 W. Kellner St Rensselaer IN 47978-2623 *(Health Department)*									
6		Jasper Co Public Library 208 W Susan St Rensselaer IN 47978-2699 *(Library)*									
7		Mr. Kenny Haun P.O. Box 280 Rensselaer IN 47978 *(Affected Party)*									
8		Rensselaer City Council and Mayors Office P.O. Box 280 Rensselaer IN 47978 *(Local Official)*									
9		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 *(Affected Party)*									
10											
11											
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13											
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