



Joseph E. Kernan
Governor

Lori F. Kaplan
Commissioner

October 20, 2004

100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
(317) 232-8603
(800) 451-6027
www.in.gov/idem

TO: Interested Parties / Applicant

RE: BP Products North America, Inc / 089-19754-00453

FROM: Paul Dubenetzky
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, Room 1049, 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.dot 9/16/03



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PART 70 SIGNIFICANT SOURCE MODIFICATION OFFICE OF AIR QUALITY

**BP Products North America, Inc.
2815 Indianapolis Blvd.
Whiting, IN 46394-2197**

(herein known as the Permittee) is hereby authorized to construct and operate subject to the conditions contained herein, the emission units described in Section A (Source Summary) of this approval.

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

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

Significant Source Modification 089-19754-00453	
Issued by: Original Signed by Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: October 20, 2004

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SECTION A SOURCE SUMMARY

This approval is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the emission units contained in conditions A.1 through 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 approval pursuant to 326 IAC 2, or change other applicable requirements presented in the permit application.

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

The Permittee owns and operates a petroleum refinery.

Responsible Official: Whiting Business Unit Leader
Source Address: 2815 Indianapolis Boulevard, Whiting, IN 46394-2197
Mailing Address: 2815 Indianapolis Boulevard, Whiting, IN 46394-2197
Phone Number: 219-473-3179
SIC Code: 2911
County Location: Lake
County Status: Nonattainment for Ozone and SO₂
Attainment for all other criteria pollutants
Source Status: Part 70 Permit Program
Major Source, under Emission Offset Rules;
Major Source, Section 112 of the Clean Air Act

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

This source is approved to construct and operate the following emission units and pollution control devices:

- (II) The Distillate Hydrotreating (DHT) Unit, identified as Unit ID 720 and rated at 45,000 barrels per day, which removes sulfur from petroleum distillates. Distillate feed is mixed with hydrogen, heated in a process furnace and passed over a catalyst bed to convert sulfur compounds to H₂S. The DHT Unit includes the following emission units:
 - (1) DHT Unit Heater 720-01, rated at 20 million Btu per hour. NO_x emissions are controlled by ultra low-NO_x burners having an emission rate of 0.04 pounds per million Btu heat input or less. Emissions are exhausted to a stack identified as 720-01.
 - (2) Associated valves, pumps, compressors, pressure relief devices, sampling connection systems, open-ended lines or valves, flanges or other connectors, and instrumentation systems.

The DHT Unit shares the DDU Flare, used to control VOC emissions during emergency situations, unit startups and shutdowns.

A.3 Specifically Regulated Insignificant Activities [326 IAC 2-7-1(21)] [326 IAC 2-7-4(c)] [326 IAC 2-7-5(15)]

This source modification does not include any insignificant activities, as defined in 326 IAC 2-7-1(21), that are specifically regulated.

A.4 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because it is a major source, as defined in 326 IAC 2-7-1(22).

SECTION B GENERAL CONSTRUCTION CONDITIONS

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

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

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1.1-9(5)][326 IAC 2-7-10.5(i)]

Pursuant to 326 IAC 2-1.1-9(5)(Revocation of Permits), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

B.4 Significant Source Modification [326 IAC 2-7-10.5(h)]

This document shall also become the approval to operate pursuant to 326 IAC 2-7-10.5(h) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Quality (OAQ), Permit Administration & Development Section, verifying that the emission units were constructed as proposed in the application. The emissions units covered in the Significant Source Modification approval may begin operating on the date the affidavit of construction is postmarked or hand delivered to IDEM if constructed as proposed.
- (b) If actual construction of the emissions units differs from the construction proposed in the application, the source may not begin operation until the source modification has been revised pursuant to 326 IAC 2-7-11 or 326 IAC 2-7-12 and an Operation Permit Validation Letter is issued.
- (c) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
- (d) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (e) In the event that the Part 70 application is being processed at the same time as this application, the following additional procedures shall be followed for obtaining the right to operate:
 - (1) If the Part 70 draft permit has not gone on public notice, then the change/addition covered by the Significant Source Modification will be included in the Part 70 draft.
 - (2) If the Part 70 permit has gone through final EPA proposal and would be issued ahead of the Significant Source Modification, the Significant Source Modification will go through a concurrent 45 day EPA review. Then the Significant Source Modification will be incorporated into the final Part 70 permit at the time of issuance.

- (3) If the Part 70 permit has gone through public notice, but has not gone through final EPA review and would be issued after the Significant Source Modification is issued, then the Modification would be added to the proposed Part 70 permit, and the Title V permit will issued after EPA review.

B.5 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.7(a), the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Actual start-up date (within 15 days after such date); and
- (c) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM, OAQ. The requirements of 40 CFR Part 60 are also federally enforceable.

SECTION C GENERAL OPERATION CONDITIONS

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

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

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

- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) when operation begins, 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 Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

The PMP and the PMP extension notification do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (b) The Permittee shall implement the PMPs as necessary to ensure that failure to implement a PMP does not cause or contribute to a violation of any limitation on emissions or potential to emit.
- (c) 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 contributes to any violation. The PMP does not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (d) Records of preventive maintenance shall be retained for a period of at least five (5) years. These records shall be kept 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.

C.3 Permit Amendment or Modification [326 IAC 2-7-11] [326 IAC 2-7-12]

- (a) Permit amendments and modifications are governed by the requirements of 326 IAC 2-7-11 or 326 IAC 2-7-12 whenever the Permittee seeks to amend or modify this permit.

- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management
Permits Branch, Office of Air Quality
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

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

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

C.4 Opacity [326 IAC 5-1]

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

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

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

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

C.6 Operation of Equipment [326 IAC 2-7-6(6)]

Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that an emission unit controlled by the equipment is in operation.

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

C.7 Performance Testing [326 IAC 3-6][326 IAC 2-1.1-11]

- (a) Compliance testing on new emission units shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up, if specified in Section D of this approval. All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this approval, utilizing any applicable procedures and analysis methods specified in 40 CFR 51, 40 CFR 60, 40 CFR 61, 40 CFR 63, 40 CFR 75, or other procedures approved by IDEM, OAQ.

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

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

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

Compliance Requirements [326 IAC 2-1.1-11]

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

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

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

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

If required by Section D, all monitoring and record keeping requirements shall be implemented when operation begins. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment.

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

C.10 Emergency Provisions [326 IAC 2-7-16]

- (a) An emergency, as defined in 326 IAC 2-7-1(12), is not an affirmative defense for an action brought for noncompliance with a federal or state health-based emission limitation, except as provided in 326 IAC 2-7-16.

(b) An emergency, as defined in 326 IAC 2-7-1(12), constitutes an affirmative defense to an action brought for noncompliance with a health-based or technology-based emission limitation if the affirmative defense of an emergency is demonstrated through properly signed, contemporaneous operating logs or other relevant evidence that describe the following:

- (1) An emergency occurred and the Permittee can, to the extent possible, identify the causes of the emergency;
- (2) The permitted facility was at the time being properly operated;
- (3) During the period of an emergency, the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards or other requirements in this permit;
- (4) For each emergency lasting one (1) hour or more, the Permittee notified IDEM, OAQ within four (4) daytime business hours after the beginning of the emergency, or after the emergency was discovered or reasonably should have been discovered;

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

Telephone Number: 317-233-5674 (ask for Compliance Section)

Facsimile Number: 317-233-5967

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

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

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

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

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

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

- (6) The Permittee immediately took all reasonable steps to correct the emergency.
- (c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

- (d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.
- (e) IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-7-4-(c)(10) be revised in response to an emergency.
- (f) Failure to notify IDEM, OAQ by telephone or facsimile of an emergency lasting more than one (1) hour in accordance with (b)(4) and (5) of this condition shall constitute a violation of 326 IAC 2-7 and any other applicable rules.
- (g) Operations may continue during an emergency only if the following conditions are met:
 - (1) If the emergency situation causes a deviation from a technology-based limit, the Permittee may continue to operate the affected emitting facilities during the emergency provided the Permittee immediately takes all reasonable steps to correct the emergency and minimize emissions.
 - (2) If an emergency situation causes a deviation from a health-based limit, the Permittee may not continue to operate the affected emissions facilities unless:
 - (A) The Permittee immediately takes all reasonable steps to correct the emergency situation and to minimize emissions; and
 - (B) Continued operation of the facilities is necessary to prevent imminent injury to persons, severe damage to equipment, substantial loss of capital investment, or loss of product or raw materials of substantial economic value.

Any operation shall continue no longer than the minimum time required to prevent the situations identified in (g)(2)(B) of this condition.

C.11 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-7-5]
[326 IAC 2-7-6]

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

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

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

C.12 General Record Keeping Requirements [326 IAC 2-7-5(3)][326 IAC 2-7-6]

- (a) Records of all required data, reports and support information 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 kept 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, all record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.13 General Reporting Requirements [326 IAC 2-7-5(3)(C)]

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

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015
- (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) Unless otherwise specified in this permit, all reports required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. All reports do require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years.

SECTION D.38

FACILITY OPERATION CONDITIONS

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

(II) The Distillate Hydrotreating (DHT) Unit, identified as Unit ID 720 and rated at 45,000 barrels per day, which removes sulfur from petroleum distillates. Distillate feed is mixed with hydrogen, heated in a process furnace and passed over a catalyst bed to convert sulfur compounds to H₂S. The DHT Unit includes the following emission units:

- (1) DHT Unit Heater 720-01, rated at 20 million Btu per hour. NO_x emissions are controlled by ultra low-NO_x burners having an emission rate of 0.04 pounds per million Btu heat input or less. Emissions are exhausted to a stack identified as 720-01.
- (2) Associated valves, pumps, compressors, pressure relief devices, sampling connection systems, open-ended lines or valves, flanges or other connectors, and instrumentation systems.

The DHT Unit shares the DDU Flare, used to control VOC emissions during emergency situations, unit startups and shutdowns.

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

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

D.38.1 Particulate Matter [326 IAC 6-1-2]

Pursuant to 326 IAC 6-1-2, particulate matter emissions from Heater 720-01 shall not exceed 0.03 grains per dry standard cubic foot.

D.38.2 Lake County Sulfur Dioxide Emission Limitations [326 IAC 7-4-1.1]

Heater 720-01 shall only burn natural gas as fuel. This condition will ensure that 326 IAC 7-1.1 is not applicable, subsequently rendering 326 IAC 7-4-1.1(a) as not applicable.

D.38.3 New Source Performance Standards [326 IAC 12] [40 CFR 60] [43 CFR 63.640(p)]

- (a) Pursuant to 326 IAC 12 (40 CFR 60, Subpart GGG) the Permittee shall satisfy the requirements of 40 CFR 60.590 through 60.593 and 40 CFR 60.482 through 60.487, as applicable, for equipment leaks from flanges or other connectors in VOC service that are not subject to 326 IAC 20-16-1 (40 CFR 63, Subpart CC).
- (b) Pursuant to 326 IAC 12 (40 CFR 60, Subpart QQQ) the Permittee shall satisfy the requirements of 40 CFR 60.690 through 60.698, as applicable, for individual drain systems, oil-water separators and aggregate facilities.

D.38.4 National Emission Standard for Benzene Waste Operations [326 IAC 14-7] [40 CFR 61 Subpart FF]

Pursuant to 326 IAC 326 IAC 14-7 (40 CFR 61, Subpart FF), the Permittee shall satisfy the requirements of 40 CFR 61.640 through 63.658, as applicable, for the treatment, storage and disposal of benzene-containing hazardous waste streams.

D.38.5 National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries [326 IAC 20-16-1] [40 CFR 63 Subpart CC]

Pursuant to 326 IAC 20-16-1 (40 CFR 63, Subpart CC) the Permittee shall satisfy the requirements of 40 CFR 63.640 through 63.654, as applicable, for equipment leaks from pumps, compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, or instrumentation systems.

D.38.6 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters [40 CFR 63 Subpart DDDDD]

Pursuant to 40 CFR 63, Subpart DDDDD, carbon monoxide emissions from Heater 720-01 shall not exceed 400 parts per million (ppm) by volume on a dry basis, corrected to 3% oxygen.

D.38.7 Emission Offset [326 IAC 2-3]

- (a) Equipment leaks shall comply with the standards in 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC, as applicable for components in gas/vapor service and light liquid service, except that a more stringent definition of a leak shall apply to valves and flanges. An instrument reading of 500 parts per million (ppm) or greater shall constitute a leak for valves and flanges.
- (b) All emissions from pressure relief devices and compressor seal systems shall be vented to a flare and burned as fuel.
- (c) Nitrogen oxide emissions from Process Heater 720-01 shall be controlled by ultra low-NO_x burners having an emission rate of 0.04 pounds per million Btu heat input or less.

This condition renders the requirements of Emission Offset as not applicable.

D.38.8 Preventive Maintenance Plan [326 IAC 2-7-5(13)]

A Preventive Maintenance Plan, in accordance with Section C - Preventive Maintenance Plan, of this permit, is required for this facility.

Compliance Determination Requirements

D.38.9 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

- (a) No later than 180 days after startup of Heater 720-01, the Permittee shall conduct performance tests for carbon monoxide according to Table 5 of 40 CFR 63 Subpart DDDDD. Compliance shall be based on a 3-run average.
- (b) Within 60 days after achieving the maximum production rate at which the DHT Unit will be operated, but no later than 180 days after startup of Heater 720-01, the Permittee shall conduct performance tests for nitrogen oxide emissions and furnish the Commissioner a written report of the results of such performance tests.
- (c) The Permittee shall conduct performance tests for equipment leaks in accordance with 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC, as applicable.
- (d) Compressors in hydrogen service are exempt from the requirements of 40 CFR 60.592 and 40 CFR 63.698(a) and (c) if the Permittee demonstrates that a compressor is in hydrogen service. The Permittee may use engineering judgment to demonstrate that the percent hydrogen content exceeds 50 percent by volume. In the event that OAQ does not agree, OAQ reserves the right to require testing in accordance with 40 CFR 60.593(b)(1) and 40 CFR 63.698(g)(2)(i)(A).

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

D.38.10 Leaks from Petroleum Refineries; Monitoring; Reports [326 IAC 8-4-8][326 IAC 12][40 CFR 60] [326 IAC 20-16-1] [40 CFR 63 Subpart CC]

- (a) Pursuant to 326 IAC 8-4-8, the Permittee shall develop and conduct a monitoring program for this facility addressing the guidelines contained in 326 IAC 8-4-8 (c) through (m).

- (b) The Permittee shall develop and conduct a monitoring program for this facility addressing equipment leaks in accordance with 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC, as applicable.

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

D.38.11 Record Keeping Requirements [326 IAC 3-5-6]

The Permittee shall retain records of all recording/monitoring data and support information for a period of five (5) years, or longer if specified elsewhere in this permit, from the date of the monitoring sample, measurement, or report. Support information includes all calibration and maintenance records, and copies of all reports required by this permit.

D.38.12 Record Keeping Requirements [326 IAC 8-4-8(k)][326 IAC 12] [40 CFR 60] [326 IAC 20-16-1] [40 CFR 63]

- (a) To document compliance with Condition D.38.10(a), the Permittee shall maintain records for the leak monitoring program. These records shall include, at a minimum, the data in 326 IAC 8-4-8(k);

- (b) To document compliance with Condition D.38.10(b), the Permittee shall maintain records for equipment leaks within this facility in accordance with 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC, as applicable. These records may be combined with the records required in Condition D.38.12(a);

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

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

**PART 70 OPERATING PERMIT
CERTIFICATION**

Source Name: BP Products North America, Inc.
Source Address: 2815 Indianapolis Blvd., Whiting, IN 46394-2197
Mailing Address: P.O. Box 710, Whiting, IN 46394-0710
Permit No.: 089-19754-00453

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

Please check what document is being certified:

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

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

Signature:

Printed Name:

Title/Position:

Date:

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH
100 North Senate Avenue
P.O. Box 6015
Indianapolis, Indiana 46206-6015
Phone: 317-233-5674
Fax: 317-233-5967**

**PART 70 OPERATING PERMIT
EMERGENCY OCCURRENCE REPORT**

Source Name: BP Products North America, Inc.
Source Address: 2815 Indianapolis Blvd., Whiting, IN 46394-2197
Mailing Address: P.O. Box 710, Whiting, IN 46394-0710
Permit No.: 089-19754-00453

This form consists of 2 pages

Page 1 of 2

- 9** This is an emergency as defined in 326 IAC 2-7-1(12)
- The Permittee shall notify the Office of Air Quality (OAQ), within four (4) business hours (1-800-451-6027 or 317-233-5674, ask for Compliance Section); and
 - The Permittee shall submit notice in writing or by facsimile within two (2) working days (Facsimile Number: 317-233-5967), and follow the other requirements of 326 IAC 2-7-16.

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

Facility/Equipment/Operation:

Control Equipment:

Permit Condition or Operation Limitation in Permit:

Description of the Emergency:

Describe the cause of the Emergency:

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

Page 2 of 2

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

Form Completed by: _____

Title / Position: _____

Date: _____

Phone: _____

A certification is not required for this report.

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

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

Source Name: BP Products North America, Inc.
 Source Address: 2815 Indianapolis Blvd., Whiting, IN 46394-2197
 Mailing Address: P.O. Box 710, Whiting, IN 46394-0710
 Permit No.: 089-19754-00453

Months: _____ **to** _____ **Year:** _____

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

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

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

Source Background and Description

Source Name:	BP Products North America, Inc. (f/k/a Amoco Oil Company - Whiting Refinery)
Source Location:	2815 Indianapolis Blvd., Whiting, IN 46394-2197
County:	Lake
SIC Code:	2911
Application No.:	089-19754-00453
Permit Reviewer:	Allen R. Davidson

On July 12, 2004, the Office of Air Quality (OAQ) received an application from BP Products North America, Inc. relating to the Ultra Low Sulfur Distillate (ULSD) Project. This project, which will facilitate production of diesel fuel with no more than 15 ppm sulfur content, involves construction and operation of the Distillate Hydrotreater (DHT) Unit, ID 720, rated at 45,000 barrels per day. The DHT Unit includes the following:

- (a) DHT Unit Heater 720-01, rated at 20 million Btu per hour. NOX emissions are controlled by ultra low-NOX burners.
- (b) Associated valves, pumps, compressors, pressure relief devices, sampling connection systems, open-ended lines or valves, flanges or other connectors, and instrumentation systems.

The DHT Unit will also share Flare 698-02, used for emergency situations at the existing Distillate Desulfurization Unit (DDU).

History

Amoco Oil Company - Whiting Refinery submitted a Part 70 permit application for a petroleum refinery on September 30, 1996. This application shall be incorporated in the submitted Part 70 application.

The pending Part 70 application has since received the following revisions:

- (a) Exemption 089-8275-00003, which involved replacing storage tank #3531, was issued on April 30, 1997.
- (b) Exemption 089-9003-00003, which approved one (1) natural gas-fired hot oil heater rated at 12 million Btu per hour and identified as AHE-1200, was issued on November 19, 1997.
- (c) Minor Source Modification 089-11960-00003, which involved replacing storage tank #3705, was issued on June 6, 2000.
- (d) Minor Source Modification 089-11984-00003, which acknowledged removal of the Lubes Unit for an emission reduction credit, was issued on July 20, 2000.

- (e) Minor Source Modification 089-14239-00003, which involved a steam sharing plan with Whiting Clean Energy, was issued on May 11, 2001.
- (f) Significant Source Modification 089-13846-00003, which involved an additional tail gas unit at its Sulfur Recovery Unit, was issued on June 27, 2001.
- (g) Exemption 089-14450-00003, which involved changes to the operation of the #12 Pipe Still and an additional tower for the VRU 300 Merox Treating Section, was issued on July 18, 2001.
- (h) Significant Source Modification 089-14210-00453, which involved the addition of two (2) soil remediation units at the south tank field, was issued on September 13, 2001. This modification is also an Emission Offset Permit pursuant to 326 IAC 2-3.
- (i) Significant Source Modification 089-14630-00003, which involved changes at the Catalytic Feed Hydrotreating Unit (CFHU) to increase the rated capacity to 100,000 barrels per day, was issued on November 30, 2001. This modification also made the requirements of Exemption 089-14450-00003 federally enforceable.
- (j) Administrative Amendment 089-15525-00003, which amended Significant Source Modification 089-13846-00003 to include a modular degassing unit to eliminate sulfur pit emissions and to change permit language to more closely follow the New Source Performance Standards Subpart J, was issued on April 15, 2002.
- (k) Significant Permit Modification 089-15202-00003, which eliminates fuel oil usage at all heaters and boilers on or before June 1, 2003, subjects fuel gas usage to the New Source Performance Standards (NSPS) Subpart J, and subjects the two Fluidized Catalytic Cracking Units FCU 500 and FCU 600 to carbon monoxide limits, was issued on April 24, 2002. It modified Significant Source Modification 089-14630-00003.
- (l) Significant Source Modification 089-15500-00003, which adds selective catalytic reduction (SCR) emission control to Fluidized Catalytic Cracking Unit #600 (FCU 600), was issued on October 18, 2002. It further modified Significant Source Modification 089-14630-00003.
- (m) Minor Source Modification 089-16586-00003, which allowed installation of nitrogen oxide (NO_x) emission controls onto the five (5) boilers at the #3 Stanolind Power Station, was issued on January 30, 2003. It further modified Significant Source Modification 089-14630-00003.
- (n) Minor Permit Modification 089-16840-00003, which incorporates the requirements of Construction Permit Modification 089-9931-00003 into Significant Source Modification 089-14630-00003, was issued on May 14, 2003. (Construction Permit Modification 089-9931-00003, issued on February 19, 1999, allowed an increase in fuel firing capacity for the Distillate Desulfurization Unit (DDU) Process Heater WB-302.)
- (o) Exemption 089-16960-00453, which approves the addition of a wet electrostatic precipitator (WESP) and a carbon bed absorber for the Fluidized Bed Incinerator, was issued on May 27, 2003.

- (p) Minor Permit Modification 089-17230-00453, which increases the capacity of the Distillate Desulfurization Unit (DDU), was issued on September 10, 2003.
- (q) Significant Source Modification 089-15052-00453, which converts the Catalytic Refining Unit (CRU) from a distillate hydrotreater to a naphtha hydrotreater, was issued on November 17, 2003.
- (r) Exemption 089-19041-00453, which approves construction of a caustic scrubbing system on the #4 Ultraformer Unit and an ammonia injection system before the existing electrostatic precipitator on the Fluidized Catalytic Cracking Unit #500 (FCU 500), was issued on June 22, 2004.
- (s) Significant Permit Modification 089-18588-004533, which requested changes involving language incorporating the requirements of EPA Consent Decree 2:96 CV 095 RL, was issued on July 15, 2004. It further modified Significant Source Modification 089-14630-00003.

This application is the twentieth revision to the Part 70 permit application.

Enforcement Issues

OAQ is aware of a consent decree between BP Exploration & Oil Company, Amoco Oil Company, and Atlantic Richfield Company, and the U.S. EPA and nine states including Indiana. However, the proposed changes are not related to the consent decree.

Stack Summary

The following stacks will be added to the emission source:

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (dscfm)	Temperature (EF)
720-01	DHT Unit Heater	97.0	3.33	13,000	659

Recommendation

The staff recommends to the Commissioner that the application be approved as a Significant Source Modification. This recommendation is based on the following facts and conditions:

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 July 12, 2004.

Emission Calculations

Fuel Combustion from New Emission Units

The new fuel combustion unit burns natural gas or refinery gas. See Appendix A of this document for detailed fuel combustion emissions calculations.

Increased Utilization of Existing Facilities

The ULSD project is being done as part of a clean fuels program (fuels with lower than 15 ppm of sulfur by weight). Expanding the hydrotreating capacity will not increase utilization of the boilers or the pipe stills. Since there are no intermediate sulfur removal processes upstream of the DHT Unit, other sulfur removal processes should not be affected.

Increased utilization is expected for the Sulfur Recovery Unit (SRU) of approximately 12 long tons per day. The SRU, rated at 600 long tons per day, does not need physical modification to accommodate the increase.

- (a) The SRU has sulfur dioxide emission limits expressed in parts per million, and the volumetric air flow rates from the SRU remain unchanged. Thus, the potential to emit sulfur dioxide does not increase at the SRU.
- (b) The emission calculations account for a 2% increase in fuel combustion utilization of the SBS Tail Gas Unit under the "main operating scenario."

See Significant Source Modification 089-13846-00003, issued on June 27, 2001, and Administrative Amendment 089-15525-00003, issued on April 15, 2002, for further details regarding the SRU and its requirements.

Increased utilization is expected for the emergency flare 698-01. The amount of refinery fuel gas purged to the flare is estimated to be 3,600 standard cubic feet per hour.

VOC Equipment Leaks

Fugitive VOC emissions from leaking components were calculated using the Screening Ranges Approach based on the *Protocol For Equipment Leak Emission Estimates*, EPA-453/R-95-017.

The Screening Ranges Approach (formerly known as the "leak/no-leak" approach) offers some refinement over the Average Emission Factor Approach, thereby allowing some adjustment for individual unit conditions and operation. This approach requires that measured concentrations (screening data) be collected for the equipment in the process unit. The screening data are an indication of leak rates. When applying this approach, it is assumed that components having screening values greater than 10,000 ppmv have a different average emission rate than components with screening values less than 10,000 ppmv. This approach may be applied when screening data are available as either "greater than or equal to 10,000 ppmv" or as "less than 10,000 ppmv."

Emission factors for refineries for these two ranges of screening values are presented in Appendix A and are taken from Table 2-6 of the *Protocol For Equipment Leak Emission Estimates*.

See Appendix A of this document for detailed emissions calculations.

Potential To Emit

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

Fugitive emissions are counted toward determination of PSD and Emission Offset applicability due to the following:

- (a) petroleum refineries are one of the twenty-eight (28) listed source categories under 326 IAC 2-2, and
- (b) there are applicable New Source Performance Standards that were in effect on August 7, 1980.

The following table reflects the existing source potential to emit. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential To Emit (tons/year)
PM	4,900
PM-10	4,900
SO ₂	15,000
VOC	5,500
CO	361,800
NO _x	10,200

HAP's	Potential To Emit (tons/year)
Single	>10
TOTAL	>25

The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of criteria pollutants is equal to or greater than 100 tons per year. The potential to emit a single hazardous air pollutant (HAP) is equal to or greater than ten (10) tons per year and the potential to emit a combination of HAP is greater than or equal to twenty-five (25) tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-7.

This existing source is a major source for Prevention of Significant Deterioration, 326 IAC 2-2. It is in one of the 28 source categories and pollutants have the potential to emit at a rate of 100 tons per year or more.

The modification's potential to emit, before federally enforceable controls and limits, is as follows:

Pollutant	Potential To Emit (tons/year)
PM	0.8
PM-10	0.8
SO ₂	0.1
VOC	39.3
CO	9.0
NO _x	10.7

HAPs	Potential To Emit (tons/year)
SINGLE	< 10.0
TOTAL	> 25.0

The revision is classifiable as a significant source modification under 326 IAC 2-7-10.5. The source is located in a severe nonattainment area for ozone and the potential to emit volatile organic compounds (VOC) is greater than 25 tons per year.

The modification's potential to emit, after federally enforceable controls, is as follows:

Pollutant	Potential To Emit (tons/year)	PSD/Emission Offset Significant Level (tons/yr)
PM	0.8	25
PM-10	0.8	15
SO ₂	0.1	40
VOC	8.5	25
CO	9.0	100
NO _x	5.5	40

HAP	Potential To Emit (tons/year)	PSD Significant Level (tons/yr)
SINGLE	< 10.0	n/a
TOTAL	< 25.0	n/a

This revision is not a major modification for Prevention of Significant Deterioration (PSD), 326 IAC 2-2, because the potential to emit every attainment pollutant (carbon monoxide (CO), oxides of nitrogen (NO_x) and particulate matter less than 10 microns in diameter (PM-10)) is less than the PSD significant levels. Therefore, the PSD requirements do not apply.

The following table lists the applicable project emissions during the last five (5) years and changes in the potential to emit each pollutant as well as the effective date, the permit number and changes in the emissions bank:

Pollutant Area Status Banked Emissions	VOC NSR	Effective Date	Permit ID Number
TK3604 Conversion	0.3	8/23/2000	(a)
TK 6127	0.1	9/30/2000	(a)
3SPS: Steam Sharing	0.0	5/11/2001	089-14239-00003
SRU: SBS Tail Gas Unit	3.6	6/27/2001	089-13846-00003
VRU 300: Tower T-391	0.2	7/18/2001	089-14450-00003
Soil Remediation: IC Engines	4.0	9/13/2001	089-14210-00453
CFHU: Furnace F-801 C	2.1	11/30/2001	089-14630-00003
Sulfur Pits Project	0.0	4/15/2002	089-15525-00003
Fuel Oil Elimination / NSPS J	0.0	4/24/2002	089-15202-00003
FCU-600 : SCR Project	0.0	10/18/2002	089-15500-00003
3SPS: NO _x Controls	0.0	1/30/2003	089-16586-00003
DDU: incorporate amendment	0.0	5/14/2003	089-16840-00003
FBI: Wet ESP & Carbon Bed	0.0	5/27/2003	089-16960-00453
DDU: Debottlenecking Project	1.1	9/10/2003	089-17230-00453
CRU Conversion Project	2.2	11/17/2003	089-15052-00453
4UF & FCU-500: MACT II Compliance	0.0	7/15/2004	089-19041-00453
ULSD Project	8.5	Pending	089-19754-00453
Total Increases:	22.1		

(a) Records are not readily available.

The increase is classifiable as "de minimis" under 326 IAC 2-3-1(l). The net VOC emissions increases over the past five consecutive year period will be 22.1 tons per year, which is less than the Emission Offset significant levels of 25 tons per year.

The potential to emit volatile organic compounds (VOC) and nitrogen oxides (NOX) total less than the Emission Offset significant levels of 25 tons per year for ozone. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply to VOC emissions.

The potential to emit sulfur dioxide (SO₂) is also less than the Emission Offset significant levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply to SO₂ emissions.

County Attainment Status

The source is located in Lake County.

Pollutant	Status
PM-10	attainment
SO ₂	nonattainment (primary)
NO ₂	attainment
Ozone (1-hour)	nonattainment (severe)
Ozone (8-hour)	nonattainment (moderate)
CO	attainment
Lead	attainment

Volatile organic compounds (VOC) and nitrogen oxides (NO_x) are precursors for the formation of ozone. Lake County has been designated as nonattainment in Indiana for the 1-hour ozone standard and the 8-hour ozone standard. Therefore, VOC and NO_x emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Lake County has also been classified as nonattainment for sulfur dioxide (SO₂). Therefore, these emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3.

Lake County has been classified as attainment for carbon monoxide (CO), oxides of nitrogen (NO_x) and particulate matter less than 10 microns in diameter (PM-10). Therefore, CO, NO_x and PM-10 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Federal Rule Applicability

326 IAC 12 (New Source Performance Standards) (NSPS)

40 CFR 60 Subpart J - Standards of Performance for Petroleum Refineries

Pursuant to Consent Decree 2:96 CV 095 RL, all fuel gas-fired heaters and boilers will be subject to 326 IAC 12 and 40 CFR Part 60 (New Source Performance Standards (NSPS)) Subpart J - Standards of Performance for Petroleum Refineries, regardless of construction dates. Pursuant to these rules, the Permittee shall not burn in heaters and boilers any fuel gas that contains hydrogen sulfide (H₂S) in excess of 0.10 gr/dscf.

40 CFR 60 Subpart VV - Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry

The DHT is not directly subject to the requirements of the New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR 60) Subpart VV - "Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry." It does not conform to the definition of a "process unit" under 40 CFR 60.481. Although there are chemicals listed in 40 CFR 60.489 within the company's products, the facility does not produce those chemicals as intermediates or as final products.

40 CFR 60 Subpart GGG - Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries

The DHT Unit is subject to the requirements of the New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR 60) Subpart GGG "Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries". 40 CFR 60.592 requires compliance with the requirements in 40 CFR 60.482 through 60.487 of Subpart VV, with a few exceptions provided in 40 CFR 60.593. However, most of the requirements are superseded by an applicable NESHAP.

40 CFR 60 Subpart QQQ - Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems

The DHT Unit is subject to the requirements of the New Source Performance Standards (NSPS), 326 IAC 12 (40 CFR 60) Subpart QQQ "Standards of Performance for VOC Emissions From Petroleum Refinery Wastewater Systems." This rule applies to individual drain systems, oil-water separators and aggregate facilities.

326 IAC 14-7 (Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene)

40 CFR 61 Subpart FF - National Emission Standard for Benzene Waste Operations

This source is subject to the requirements of 40 CFR 61 Subpart FF "National Emission Standard for Benzene Waste Operations." This rule applies to the treatment, storage and disposal of benzene-containing hazardous waste streams at petroleum refineries.

326 IAC 20-16-1 (National Emission Standards for Hazardous Air Pollutants) (NESHAP)

40 CFR 63 Subpart CC - NESHAP From Petroleum Refineries

The ULSD Project is subject to the requirements of 40 CFR 63 Subpart CC, "National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries." This NESHAP contains a provision at 40 CFR 63.640(p) stating that equipment leaks that are also subject to the provisions of 40 CFR 60 are required to comply only with the provisions specified in the NESHAP. Flanges or other connectors in VOC service are the only items that may not be considered equipment leaks in the NESHAP but are included in the definition of equipment leaks in NSPS Subpart GGG.

Since the additional petroleum refining process unit does not have the potential to emit 10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants, the addition is not subject to the requirements for a new source.

For existing sources, 40 CFR 63 Subpart CC requires compliance with the requirements in 40 CFR 60 Subpart VV, with a few exceptions and a few additional requirements provided in 40 CFR 63.648.

State Rule Applicability - Entire Source

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The ULSD Project is not subject to subject to 326 IAC 2-4.1-1. It is excluded from the rule under 326 IAC 2-4.1-1(b)(2) because it is subject to 40 CFR 63 Subpart CC.

326 IAC 2-6 (Emission Reporting)

Since this source is required to have an operating permit under 326 IAC 2-7, this source is subject to 326 IAC 2-6 (Emission Reporting). The source also has potential to emit greater than the thresholds in 326 IAC 2-6-3(a)(1). Therefore, an emission statement covering the previous calendar year must be submitted by July 1 annually. The emission statement shall contain, at a minimum, the information specified in 326 IAC 2-6-4.

326 IAC 5-1-2 (Opacity Limitations)

This emission unit is subject to 326 IAC 5-1-2. 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:

- (a) Opacity shall not exceed an average of twenty percent (20%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute non-overlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

State Rule Applicability - Distillate Hydrotreater (DHT) Unit

326 IAC 2-3 (Emission Offset)

- (a) Equipment leaks shall comply with the applicable standards in 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC for components in gas/vapor service and light liquid service, except that a more stringent definition of a leak shall apply. An instrument reading of 500 parts per million (ppm) or greater from components shall constitute a leak.
- (b) Nitrogen oxide emissions from Process Heater 720-01 shall be controlled by ultra low-NO_x burners having an emission rate of 0.04 pounds per million Btu heat input or less.

These limits equate to a potential to emit 8.5 tons of VOC per year and a potential to emit 3.5 tons of nitrogen oxides per year and render the requirements of Emission Offset as not applicable.

326 IAC 6-1-2 (Particulate Emission Limitations)

DHT Unit Heater 720-01 is subject to 326 IAC 6-1-2. Pursuant to 326 IAC 6-1-2 (Particulate Emission Limitations), particulate matter emissions from this facility shall not exceed 0.03 grains per dry standard cubic foot. For a gas flow rate of 13,000 actual cubic feet per minute at 659°F, this condition equates to a limit of 6.91 tons of particulate per year. Unrestricted potential to emit is lower than this limit.

326 IAC 7-4-1.1 (Lake County Sulfur Dioxide Emission Limitations)

326 IAC 7-4-1.1(a) usually requires new fossil fuel-fired combustion units located in Lake County and subject to 326 IAC 7-1.1 to burn natural gas only. However, DHT Unit Heater 720-01 shall only burn refinery process gas or natural gas as fuel. The potential to emit sulfur dioxide is less than twenty-five (25) tons per year and ten (10) pounds per hour, rendering both 326 IAC 7-1.1 and 326 IAC 7-4-1.1(a) as not applicable.

326 IAC 8-4-8 (Leaks from Petroleum Refineries; Monitoring; Reports)

Pursuant to 326 IAC 8-4-8, the emission source shall develop and conduct a monitoring program for this facility addressing the guidelines contained in 326 IAC 8-4-8 (c) through (m).

Conclusion

The operation of these facilities shall be subject to the conditions of the attached Significant Source Modification, No. 089-19754-00453.

Indiana Department of Environmental Management Office of Air Quality

Addendum to the Technical Support Document (TSD) for a Part 70 Significant Source Modification

Source Background and Description

Source Name:	BP Products North America, Inc. (f/k/a Amoco Oil Company - Whiting Refinery)
Source Location:	2815 Indianapolis Blvd., Whiting, IN 46394-2197
County:	Lake
SIC Code:	2911
Application No.:	089-19754-00453
Permit Reviewer:	Allen R. Davidson

On August 26, 2004, the Office of Air Quality (OAQ) had a notice published in *The Times* stating that BP Products North America, Inc. had applied for a Significant Source Modification (SSM) relating to the Ultra Low Sulfur Distillate (ULSD) Project. This project, which will facilitate production of diesel fuel with no more than 15 ppm sulfur content, involves construction and operation of the Distillate Hydrotreater (DHT) Unit, ID 720, rated at 45,000 barrels per day. The notice also stated that OAQ proposed to issue a SSM 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.

Natalie R. Grimmer of BP Products North America, Inc. submitted comments on the proposed modification. The summary of the comments and responses follows. *Italic font indicates that the language is part of the comment. Where OAQ has decided to make revisions to the permit, bold font indicates language has been added, and strikeout font indicates it has been deleted. The Table of Contents has also been modified to reflect the changes.*

Comment 1:

The DHT unit only has one heater, 720-01. Thus, the Facility Description in Section D.38 should be modified as follows:

- (II) *The Distillate Hydrotreating (DHT) Unit, identified as Unit ID 720, which removes sulfur from petroleum distillates. Distillate feed is mixed with hydrogen, heated in a process ~~furnace furnaces~~ and passed over a catalyst bed to convert sulfur compounds to H₂S. The DHT Unit includes the following emission units:*

Response 1:

Condition A.2 has been changed to read as follows:

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

This source is approved to construct and operate the following emission units and pollution control devices:

- (a) The Distillate Hydrotreating (DHT) Unit, identified as Unit ID 720 **and rated at 45,000 barrels per day**, which removes sulfur from petroleum distillates. Distillate feed is mixed with hydrogen, heated in a process **furnace** ~~furnaces~~ and passed over a catalyst bed to convert sulfur compounds to H₂S. The DHT Unit includes the following emission units:

- (1)

DHT Unit Heater 720-01, rated at 20 million Btu per hour. NO_x emissions are controlled by ultra low-NO_x burners having an emission rate of 0.04 pounds per million Btu heat input or less. Emissions are exhausted to a stack identified as 720-01.

- (2) Associated valves, pumps, compressors, pressure relief devices, sampling connection systems, open-ended lines or valves, flanges or other connectors, and instrumentation systems.

The DHT Unit shares the DDU Flare, used to control VOC emissions during emergency situations, unit startups and shutdowns.

Furthermore, the facility description in Section D.38 is changed to read as follows:

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

(II) The Distillate Hydrotreating (DHT) Unit, identified as Unit ID 720 **and rated at 45,000 barrels per day**, which removes sulfur from petroleum distillates. Distillate feed is mixed with hydrogen, heated in a process ~~furnace~~ furnaces and passed over a catalyst bed to convert sulfur compounds to H₂S. The DHT Unit includes the following emission units:

- (1) DHT Unit Heater 720-01, rated at 20 million Btu per hour. NO_x emissions are controlled by ultra low-NO_x burners having an emission rate of 0.04 pounds per million Btu heat input or less. Emissions are exhausted to a stack identified as 720-01.
- (2) Associated valves, pumps, compressors, pressure relief devices, sampling connection systems, open-ended lines or valves, flanges or other connectors, and instrumentation systems.

The DHT Unit shares the DDU Flare, used to control VOC emissions during emergency situations, unit startups and shutdowns.

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

Comment 2:

DHT Heater 720-01 will only operate on pipeline quality natural gas. This condition was stated in the revised construction permit application package that was submitted by BP to IDEM on July 9, 2004. Thus, Heater 720-01 is not subject to 40 CFR 60 Subpart J. BP suggests that Condition D.38.2 should be modified as follows:

D.38.2 Lake County Sulfur Dioxide Emission Limitations [326 IAC 7-4-1.1]

Heater 720-01 shall only burn ~~refinery process gas or~~ natural gas as fuel. This condition will ensure that 326 IAC 7-1.1 is not applicable, subsequently rendering 326 IAC 7-4-1.1(a) as not applicable.

BP also suggests that Conditions D.38.3(a), D.38.9(a), D.38.10, and D.38.14 should be deleted.

Response 2:

Condition D.38 has been changed to read as follows:

D.38.2 Lake County Sulfur Dioxide Emission Limitations [326 IAC 7-4-1.1]

Heater 720-01 shall only burn ~~refinery process gas or~~ natural gas as fuel. This condition will ensure that 326 IAC 7-1.1 is not applicable, subsequently rendering 326 IAC 7-4-1.1(a) as not applicable.

D.38.3 New Source Performance Standards [326 IAC 12] [40 CFR 60] [43 CFR 63.640(p)]

- (a) ~~Pursuant to 326 IAC 12 (40 CFR 60, Subpart J) the Permittee shall not burn in the process heater any fuel gas that contains hydrogen sulfide (H₂S) in excess of 0.10 gr/dscf.~~
- (b) Pursuant to 326 IAC 12 (40 CFR 60, Subpart GGG) the Permittee shall satisfy the requirements of 40 CFR 60.590 through 60.593 and 40 CFR 60.482 through 60.487, as applicable, for equipment leaks from flanges or other connectors in VOC service that are not subject to 326 IAC 20-16-1 (40 CFR 63, Subpart CC).
- (e) (b) Pursuant to 326 IAC 12 (40 CFR 60, Subpart QQQ) the Permittee shall satisfy the requirements of 40 CFR 60.690 through 60.698, as applicable, for individual drain systems, oil-water separators and aggregate facilities.

~~D.38.10 Continuous Monitoring System Required [326 IAC 12] [40 CFR 60.105(a)(4)]~~

~~A continuous monitoring system shall be installed and shall be operated at all times when the process heater is in operation. The monitoring system shall continuously measure and record the concentration, on a dry basis, of hydrogen sulfide in fuel gases before being burned.~~

D.38.14 Reporting of Excess Emissions [326 IAC 12] [40 CFR 60.7] [326 IAC 3-5-7]

~~For the purpose of reports under 40 CFR 60.7, periods of excess emissions shall be determined as all rolling 3-hour periods during which the average concentration of H₂S as measured by the H₂S continuous monitoring system exceeds 0.10 gr/dscf. The rolling 3-hour average shall be determined as the arithmetic average of three contiguous 1-hour averages.~~

Changes to Condition D.38.9(a) are shown elsewhere in this addendum.

Comment 3:

DHT Heater 720-01 is not part of the Consent Decree 2:96 CV 095 RL that was lodged on January 18, 2001. Additionally, as mentioned in Comment 1, this furnace will only burn natural gas. Condition D.38.8 should be deleted.

Response 3:

Consent Decree 2:96 CV states, "On or before June 1, 2003, BP shall eliminate all fuel oil burning at the heaters and boilers located at its Whiting refinery." OAQ interprets this to prohibit all external fuel oil combustion at this emission source after June 1, 2003, without regard to an emission unit's construction date.

Condition D.38.2 expressly restricts the new heater to using only natural gas. As a result, Condition D.38.8 can be considered redundant and removed from the permit. The permit has been changed as follows:

~~D.38.8 Legal Consent Decree~~

~~Pursuant to Consent Decree 2:96-CV-095-RL, fuel-oil shall not be used as fuel for the DHT Unit process heater.~~

Comment 4:

BP would like to clarify the emission leak requirements for the two compressors included in the component listing for the DHT Unit. The two (2) compressors associated with the DHT unit are in hydrogen service ($\geq 50\%$ hydrogen by volume); therefore, they are exempt from any control and/or monitoring requirements per 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC.

Response 4:

40 CFR 63.698(g) states that compressors in hydrogen service are exempt from the requirements of 40 CFR 63.698(a) and (c) if the compressor is in hydrogen service. For a compressor to be considered in hydrogen service, the percent hydrogen content must always exceed 50 percent by volume.

A component that is exempt from 40 CFR 63 Subpart CC could potentially be subject to 40 CFR 60 Subpart GGG, but Subpart GGG provides a similar exclusion. 40 CFR 60.593(b)(1) states that compressors in hydrogen service are exempt from the requirements of 40 CFR 60.592 if the compressor is in hydrogen service.

BP may use engineering judgment to demonstrate that the percent hydrogen content exceeds 50 percent by volume. In the event that OAQ does not agree, OAQ can require testing pursuant to 40 CFR 60.593(b)(1) and 40 CFR 63.698(g)(2)(i)(A).

Condition D.38.9(d) was added to the permit to address the hydrogen service exemption. Changes to Condition D.38.9 are shown elsewhere in this addendum.

Comment 5:

The final Boilers & Heaters MACT rule (40 CFR 63 Subpart DDDDD) was published in the Federal Register on September 13, 2004. Heater 720-01 is subject to this rule and falls under the "new or reconstructed large gaseous fuel" subcategory.

In accordance with 40 CFR 63.7500 and Table 1 of Subpart DDDDD, Heater 720-01 must meet a carbon monoxide (CO) limit of 400 ppm by volume on a dry basis corrected to 3% oxygen (3-run average).

In accordance with 40 CFR 63.7510(c), "if your boiler or process heater is in any of the limited use subcategories or has a heat input capacity less than 100 MMBtu per hour, your initial compliance demonstration is conducting a performance test for carbon monoxide according to Table 5 to this subpart."

Per 40 CFR 63.7514(g), BP must demonstrate initial compliance within 180 days of start-up of Heater 720-01.

Because Heater 720-01 has a heat input capacity of less than 100 MMBtu per hour, it will not be required for BP to install a continuous emissions monitoring system for CO. (See 40 CFR 63.7525).

Based on the above, conditions pursuant to 40 CFR 63 Subpart DDDDD should be added to Section D.38 of SSM 089-19754-00453.

Response 5:

The permit has been changed to read as follows:

D.38.6 National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters [40 CFR 63 Subpart DDDDD]

Pursuant to 40 CFR 63, Subpart DDDDD, carbon monoxide emissions from Heater 720-01 shall not exceed 400 parts per million (ppm) by volume on a dry basis, corrected to 3% oxygen.

(As a result of this insertion, the former Conditions D.38.6 and D.38.7 have been renumbered.)

D.38.9 Testing Requirements [326 IAC 2-7-6(1),(6)][326 IAC 2-1.1-11]

- (a) ~~Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after the issuance of this permit, the Permittee shall conduct performance tests for H₂S concentration in the fuel gas and furnish the Commissioner a written report of the results of such performance tests.~~
- No later than 180 days after startup of Heater 720-01, the Permittee shall conduct performance tests for carbon monoxide according to Table 5 of 40 CFR 63 Subpart DDDDD. Compliance shall be based on a 3-run average.**
- (b) Within 60 days after achieving the maximum production rate at which ~~this facility~~ **the DHT Unit** will be operated, but ~~not~~ **no** later than 180 days after ~~the issuance of this permit~~ **startup of Heater 720-01**, the Permittee shall conduct performance tests for nitrogen oxide emissions and furnish the Commissioner a written report of the results of such performance tests.
- (c) The Permittee shall conduct performance tests for equipment leaks in accordance with 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC, as applicable.
- (d) Compressors in hydrogen service are exempt from the requirements of 40 CFR 60.592 and 40 CFR 63.698(a) and (c) if the Permittee demonstrates that a compressor is in hydrogen service. The Permittee may use engineering judgment to demonstrate that the percent hydrogen content exceeds 50 percent by volume. In the event that OAQ does not agree, OAQ reserves the right to require testing in accordance with 40 CFR 60.593(b)(1) and 40 CFR 63.698(g)(2)(i)(A).
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Comment 6a:

In the VOC emission calculations presented in Appendix A of the Technical Support Document, 95% control was applied to the compressors. BP has confirmed that the seal systems on both compressors will be vented to a flare; thus, the emissions are 100% controlled. The total fugitive VOC emissions from the compressors "after control" should be 0 (zero) ton.

Comment 6b:

BP would like to elect to not have to monitor pumps down to a leak definition of 500 ppmv. It is very difficult and costly to achieve this level on pumps for a minimum benefit. Based on the fugitive VOC calculations, only 0.45 ton of VOC emission reduction is achieved.

Additionally, BP suggests that condition D.38.6 be modified as follows:

D.38.6 Emission Offset [326 IAC 2-3]

- (a) *Equipment leaks shall comply with the standards in 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC, as applicable for **valves and flanges** ~~components~~ in gas/vapor service and light liquid service, except that a more stringent definition of a leak shall apply. An instrument reading of 500 parts per million (ppm) or greater from **valves and flanges** ~~components~~ shall constitute a leak.*

Response 6:

Venting all compressor seal leaks to a flare will result in a decrease in potential to emit VOC of 0.03 tons per year. Not including pumps with the 500 ppmv leak definition will result in an increase in potential to emit VOC of 0.45 tons per year. Thus, the potential to emit VOC from the project becomes 8.9 tons per year.

The former Condition D.38.6 has been changed to read as follows:

~~D.38.6~~ D.38.7 Emission Offset [326 IAC 2-3]

- (a) Equipment leaks shall comply with the standards in 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart CC, as applicable for components in gas/vapor service and light liquid service, except that a more stringent definition of a leak shall apply **to valves and flanges**. An instrument reading of 500 parts per million (ppm) or greater ~~from components~~ shall constitute a leak **for valves and flanges**.
- (b) **All emissions from pressure relief devices and compressor seal systems shall be vented to a flare and burned as fuel.**
- (c) Nitrogen oxide emissions from Process Heater 720-01 shall be controlled by ultra low-NO_x burners having an emission rate of 0.04 pounds per million Btu heat input or less.

This condition renders the requirements of Emission Offset as not applicable.

Comment 7:

On page 6 of 10 in the Technical Support Document in the table listing the applicable project emissions during the last five (5) years, BP believes there is an error for the project listed as "SRU: SBS Tail Gas Unit" (089-13846-00003). This project resulted in total VOC increase of 1.0 ton and not 3.6 tons. The 3.6 tons of VOC was the amount for the total past 5 years at the time of that project and not for the project itself. Also, BP notes a discrepancy in the total VOC tons listed for the "CFHU: Furnace F-801C Project" (089-14630-00003) per our records.

Please modify the table on Page 6 of 10 in the Technical Support Document to reflect these changes.

Response 7:

A review of the Technical Support Document for SSM 089-13846-00003, which involved an additional tail gas unit at the Sulfur Recovery Unit, indicates that the potential to emit VOC increased by 1.0 ton per year.

A review of the Technical Support Document for SSM 089-14630-00003, which involved changes at the Catalytic Feed Hydrotreating Unit (CFHU), indicates that the potential to emit VOC increased by 1.9 ton per year. Emissions from the reconstructed heater are 1.6 tons per year, and emissions from increased utilization of other existing units are 0.3 tons per year.

Including the changes made earlier in this addendum, the revised banked emissions table appears as follows:

Pollutant Area Status Banked Emissions	VOC NSR	Effective Date	Permit ID Number
TK3604 Conversion	0.3	8/23/2000	(a)
TK 6127	0.1	9/30/2000	(a)
3SPS: Steam Sharing	0.0	5/11/2001	089-14239-00003
SRU: SBS Tail Gas Unit	1.0	6/27/2001	089-13846-00003
VRU 300: Tower T-391	0.2	7/18/2001	089-14450-00003
Soil Remediation: IC Engines	4.0	9/13/2001	089-14210-00453
CFHU: Furnace F-801 C	1.9	11/30/2001	089-14630-00003
Sulfur Pits Project	0.0	4/15/2002	089-15525-00003
Fuel Oil Elimination / NSPS J	0.0	4/24/2002	089-15202-00003
FCU-600 : SCR Project	0.0	10/18/2002	089-15500-00003
3SPS: NO _x Controls	0.0	1/30/2003	089-16586-00003
DDU: incorporate amendment	0.0	5/14/2003	089-16840-00003
FBI: Wet ESP & Carbon Bed	0.0	5/27/2003	089-16960-00453
DDU: Debottlenecking Project	1.1	9/10/2003	089-17230-00453
CRU Conversion Project	2.2	11/17/2003	089-15052-00453
4UF & FCU-500: MACT II Compliance	0.0	7/15/2004	089-19041-00453
ULSD Project	8.9	Pending	089-19754-00453
Total Increases:	19.7		(a) Records are not readily available.

Comment 8:

Per review of 326 IAC 2-3-1, BP believes that the definition of the term "de minimis" in 326 IAC 2-3-1(l) allows for both increases and decreases to be considered when calculating the net emissions increases from a source over a five (5) consecutive calendar year period. This is based on the definition of "net emissions increase" in 326 IAC 2-3-1(w), which states that "emissions increases and decreases are to be considered when determining net emissions increase."

Response 8:

BP is referencing an obsolete version of 326 IAC 2-3-1. The definition of "de minimis" now appears in 326 IAC 2-3-1(q) and the definition of "net emissions increase" now appears in 326 IAC 2-3-1(dd). The current version of 326 IAC is available on the Internet at <http://www.in.gov/legislative/iac/title326.html>.

326 IAC 2-3-1(q) reads as follows:

(q) "de minimis", in reference to an emissions increase of volatile organic compounds from a modification in a serious or severe ozone nonattainment area, means an increase that does not exceed twenty-five (25) tons per year when the net emissions increases from the proposed modification are aggregated on a pollutant specific basis with all other net emissions increases from the source over a five (5) consecutive calendar year period prior to, and including, the year of the modification.

326 IAC 2-3-1(dd)(2) reads as follows:

(dd) "Net emissions increase", with respect to any regulated NSR pollutant emitted by a major stationary source, means the following:

(2) For the purpose of determining de minimis in an area classified as serious or severe for ozone, the amount by which the sum of the emission increases and decreases from any source modification project exceeds zero (0).

326 IAC 2-3-1(ss) as follows:

(ss) "Source modification project" means all those physical changes or changes in the methods of operation at a source that are necessary to achieve a specific operational change.

For each separate source modification project, the use of emission increases and decreases is allowed for determining whether a project has a "net emission increase" or a "net emission decrease." However, the definition of "de minimis" does not make the same allowance for the aggregation of emissions from multiple source modification projects. The definition of "de minimis" strictly defines that only net emission increases are aggregated. Therefore, if a source modification project did not have a net emission increase, it cannot be used in the de minimis determination.

Comment 9a:

The DHT Heater 720-01 will mostly operate at a very minimal firing rate. The heater is only needed at a higher firing rate for start-up and the end-of-run. The end-of-run condition is when the catalyst life is near its end. The catalyst is expected to last 2 to 3 years, possibly longer. Due to these operating conditions, it will be difficult to meet the performance testing requirement within 180 days of start-up. Since this is a new unit, it would not be representative to conduct a performance test during the initial start-up in the first few days. Thus, BP is requesting a longer time frame to conduct the performance test.

Comment 9b:

Typically, the performance test is conducted while the facility being tested is operated at 95% to 100% of its permitted capacity as per 326 IAC 3-6-3(b)(1). Note that 326 IAC 3-6-3(a)(3) allows for the source and IDEM to agree upon an alternate capacity. It states, "As used in this subdivision, 'capacity' means the design capacity of the facility or other operating capacities agreed to by the source and the department."

Comment 9c:

Condition D.38.9(b) states that the performance test for NO_x should be conducted "within 180 days of the issuance of the permit", whereas, Condition C.7(a) states it should be run "within 180 days after initial start-up".

BP suggests that Condition D.38.9(b) be modified as follows:

- (b) ~~Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 36 months 180 days after the start-up of Heater 720-01 issuance of this permit, the Permittee shall conduct performance tests for nitrogen oxide emissions and furnish the Commissioner a written report of the results of such performance tests.~~

Response 9:

326 IAC 3-6-3(b) reads as follows:

- (b) All emission tests shall be conducted as follows:
- (1) While the facility being tested is operating at ninety-five percent (95%) to one hundred percent (100%) of its permitted operating capacity.
 - (2) Under conditions representative of normal operations.
 - (3) Under other capacities or conditions specified and approved by the department. As used in this subdivision, "capacity" means the design capacity of the facility or other operating capacities agreed to by the source and the department.

BP should conduct performance tests at a minimum 95% of permitted distillate hydrotreating capacity within 180 days of startup. OAQ acknowledges that Heater 720-01 may not be operating at a minimum 95% of permitted fuel firing capacity at that time, however, OAQ believes that it will not be an issue in this case. The heater's carbon monoxide limit, expressed in terms of parts per million by volume, is not dependent upon fuel firing capacity. The NO_x limit, expressed in terms of pounds per million Btu heat input, is dependent upon fuel firing capacity at the time of operation, not necessarily the maximum fuel firing capacity.

The text in Condition D.38.9(b) is appropriate for existing facilities, but not new facilities. The text which reads "Within 60 days after achieving the maximum production rate at which this facility will be operated, but not later than 180 days after the issuance of this permit" will be changed to read "Within 60 days after achieving the maximum production rate at which the DHT Unit will be operated, but not later than 180 days after the start-up of Heater 720-01". Changes to Condition D.38.9(a) are shown elsewhere in this addendum.

Also, the facility descriptions in Condition A.2 and Section D.38 have been changed to state the permitted distillate hydrotreating capacity. These changes are shown elsewhere in this addendum.

Comment 10:

The flue gas flow rate listed for Stack ID 720-01 on page 3 of 10 of the Technical Support Document should be listed as 13,000 dacfm and not 13,000 dscfm.

Response 10:

The table in the "Stack Summary" section of the Technical Support Document mislabels the flow rate as 13,000 dry standard cubic feet per minute (dscfm) when it is in fact 13,000 actual cubic feet per minute (acfm). This error does not affect the permit. Emission calculations correctly use 13,000 acfm.

Comment 11:

The NSPS requirements in 40 CFR Subpart A no longer require a notification of the anticipated start-up date. Condition B.5(b) should be deleted from the permit.

Response 11:

Condition B.5 has been changed to read as follows:

B.5 NSPS Reporting Requirement

Pursuant to the New Source Performance Standards (NSPS), Part 60.7(a), the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) ~~Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);~~
- (~~e~~) Actual start-up date (within 15 days after such date); and
- (~~d~~) **(c)** Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Quality
100 North Senate Avenue, P. O. Box 6015
Indianapolis, IN 46206-6015

The application and enforcement of these standards have been delegated to the IDEM, OAQ. The requirements of 40 CFR Part 60 are also federally enforceable.

Comment 12:

Condition C.10(d) states that "This emergency provision supersedes 326 IAC 1-6 (Malfunctions)." Thus, the requirements in C.6 per 326 IAC 1-6-4 should be deleted.

Response 12:

326 IAC 1-6 applies in its entirety only to emission sources required to obtain a registration or a minor source operating permit (MSOP). Part 70 emission sources are required under 326 IAC 2-7-4(c)(9)(A) to comply with 326 IAC 1-6-3 only. Condition C.6 has been changed to read as follows:

C.6 Operation of Equipment [326 IAC 2-7-6(6)] [~~326 IAC 1-6-4~~]

- (a) ~~The Permittee shall be responsible for operating and maintaining all emission units and emission control equipment in compliance with all applicable rules. Emissions temporarily exceeding the standards which are due to malfunctions of emission units or emission control equipment shall not be considered a violation of the rules provided the source demonstrates that:~~
 - (1) ~~All reasonable measures were taken to correct, as expeditiously as practicable, the conditions causing the emissions to exceed the allowable limits, including the use of off-shift and over-time labor, if necessary.~~

- (2) ~~All possible steps were taken to minimize the impact of the excessive emissions on ambient air quality which may include, but not be limited to, curtailment of operation and/or shutdown of the facility.~~
- (3) ~~Malfunctions have not exceeded five percent (5%), as a guideline, of the normal operational time of the facility.~~
- (4) ~~The malfunction is not due to the negligence of the operator.~~
- (b) Except as otherwise provided by statute or rule, or in this permit, all air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that an emission unit ~~vented to~~ **controlled by** the control equipment is in operation. ~~and shall not be bypassed, unless:~~
- (1) ~~It is necessary to prevent damage to equipment or injury to persons; or~~
- (2) ~~There is a malfunction and the requirements set forth in part (a) of this condition are met.~~
- (c) Excessive emissions shall be brought into compliance with all practicable speed, and appropriate action, including those actions set forth above, shall be taken:
- (1) ~~to correct the conditions causing such emissions to exceed applicable limits;~~
- (2) ~~to reduce the frequency of occurrence of such conditions,~~
- (3) ~~to minimize the amount by which said limits are exceeded, and~~
- (4) ~~to reduce the length of time for which said limits are exceeded.~~
- ~~These actions shall be initiated as expeditiously as practicable.~~

Comment 13:

The Emergency/Deviation Occurrence Report attached to the permit is not the same version as the one attached to our Draft Title V permit. Our draft Title V permit has two separate forms, one for the Emergency Report and one titled "Quarterly Deviation and Compliance Monitoring Report".

Response 13:

The preferred format for reporting is contained in the draft Part 70 operation permit, which provides separate reporting forms for emergencies and deviations. The Emergency/Deviation Occurrence Report has been replaced by the Emergency Occurrence Report and the Quarterly Deviation and Compliance Monitoring Report.

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

Company Name: BP Products North America, Inc.
Address City IN Zip: 2815 Indianapolis Blvd. Whiting, IN 46394-2197
ID: 089-19754-00453
Reviewer: Allen R. Davidson
Date: 08/04/04

Heat Input Capacity Potential Throughput
MMBtu/hr MMCF/yr

20.000

175.2

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.2	0.7	0.1	8.8	0.5	7.4

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

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

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-3	1.2E-3	75.0E-3	1.8E+0	3.4E-3
Potential Emission in tons/yr	1.840E-04	1.051E-04	6.570E-03	1.577E-01	2.978E-04

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	500.0E-6	1.1E-3	1.4E-3	380.0E-6	2.1E-3
Potential Emission in tons/yr	4.380E-05	9.636E-05	1.226E-04	3.329E-05	1.840E-04

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

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu
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).

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

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

Company Name: BP Products North America, Inc.
Address City IN Zip: 2815 Indianapolis Blvd. Whiting, IN 46394-2197
ID: 089-19754-00453
Reviewer: Allen R. Davidson
Date: 08/04/04

Heat Input Capacity Potential Throughput
MMBtu/hr MMCF/yr

3.720

32.6

	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	1.9	7.6	0.6	100.0 **see below	5.5	84.0
Potential Emission in tons/yr	0.0	0.1	0.0	1.6	0.1	1.4

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

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

HAPs - Organics

	Benzene	Dichlorobenzene	Formaldehyde	Hexane	Toluene
Emission Factor in lb/MMcf	2.1E-3	1.2E-3	75.0E-3	1.8E+0	3.4E-3
Potential Emission in tons/yr	3.422E-05	1.955E-05	1.222E-03	2.933E-02	5.540E-05

HAPs - Metals

	Lead	Cadmium	Chromium	Manganese	Nickel
Emission Factor in lb/MMcf	500.0E-6	1.1E-3	1.4E-3	380.0E-6	2.1E-3
Potential Emission in tons/yr	8.147E-06	1.792E-05	2.281E-05	6.192E-06	3.422E-05

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

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

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).

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

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

Appendix A: Emissions Calculations

Company Name: BP Products North America, Inc.
Address City IN Zip: 2815 Indianapolis Blvd. Whiting, IN 46394-2197
ID: 089-19754-00003
Reviewer: Allen R. Davidson
Date: 08/04/04

NOx Emissions After Controls:

DHT Unit:	20 MMBtu *	0.04 lb NOx *	8760 hr *	ton =	3.50 ton NOx
720-01:	hr	MMBtu	yr	2000 lb	yr

Emission Increase from Utilization of Unused Capacity:

Sulfur Recovery Unit:

SBS TGU:	40 MMBtu * cf *	1033 Btu	2% increase =	0.0008 MMcf	
	hr			hr	
	0.0008 MMcf *	7.6 lb PM10 *	8760 hr *	ton =	0.03 ton PM10
	hr	MMcf	yr	2000 lb	yr
	0.0008 MMcf *	0.6 lb SO2 *	8760 hr *	ton =	0.00 ton SO2
	hr	MMMBtu	yr	2000 lb	yr
	0.0008 MMcf *	100 lb NOx *	8760 hr *	ton =	0.34 ton NOx
	hr	MMcf	yr	2000 lb	yr
	0.0008 MMcf *	5.5 lb VOC *	8760 hr *	ton =	0.02 ton VOC
	hr	MMMBtu	yr	2000 lb	yr
	0.0008 MMcf *	84 lb CO *	8760 hr *	ton =	0.28 ton CO
	hr	MMMBtu	yr	2000 lb	yr

Emissions from the application are as follows:

	PM	PM10	SO2	NOx	VOC	CO
Before Control	0.8	0.8	0.1	10.7	39.3	9.0
After Control	0.8	0.8	0.1	5.5	8.9	9.0

Appendix A: Emissions Calculations

Company Name: BP Products North America, Inc.
Address City IN Zip: 2815 Indianapolis Blvd. Whiting, IN 46394-2197
ID: 089-19754-00003
Reviewer: Allen R. Davidson
Date: 08/04/04

The following calculations determine the emission limit under 326 IAC 6-1-2:

DHT Unit:

Grain loading:	0.03 gr/dscf							
Air flow rate:	13000 acf/min							
0.03 grain * dscf	13000 acf * min *	528 deg. R (460 +	* (100% - 659) deg. R *	0 % moisture) * 100 % *	525600 min * year	1 lb * 7000 grain	1 ton = 2000 lb	6.91 ton/yr

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

Form Completed By: _____

Title/Position: _____

Date: _____

Phone: _____

Attach a signed certification to complete this report.