INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: January 10, 2012

RE: BW Washington Car Shop / 027-29701-00006

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

Notice of Decision: Approval - Effective Immediately

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 13-15-5-3, this permit is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Suite N 501E, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures
FNPER.dot12/03/07

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New Source Review (NSR) and Federally Enforceable State Operating Permit OFFICE OF AIR QUALITY

BW Washington Car Shop
1723 W. Walnut Street
Washington, Indiana 47501

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

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

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-8 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.

Indiana statutes from IC 13 and rules from 326 IAC, quoted in conditions in this permit, are those applicable at the time the permit was issued. The issuance or possession of this permit shall not alone constitute a defense against an alleged violation of any law, regulation or standard, except for the requirement to obtain a FESOP under 326 IAC 2-8.

Operation Permit No.: F027-29701-00006	
Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	Issuance Date: January 10, 2012 Expiration Date: January 10, 2017

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SECTION A SOURCE SUMMARY

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

A.1 General Information [326 IAC 2-8-3(b)]

The Permittee owns and operates a stationary railroad car cleaning and refurbishing operation.

Source Address:	1723 W. Walnut Street, Washington, Indiana 47501
General Source Phone Number:	(812) 254-8940
SIC Code:	4789 (Transportation Services, Not Elsewhere Classified)
County Location:	Daviess
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Federally Enforceable State Operating Permit Program Minor Source, under PSD and Emission Offset Rules Minor Source, Section 112 of the Clean Air Act Not 1 of 28 Source Categories

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-8-3(c)(3)]

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

(a) One (1) rail tank car cleaning operation, approved for construction in 2011, located in Building #3, consisting of ten (10) wash stations, identified as WS-1 through WS-10, for cleaning of the exterior and interior of rail cars, with residual materials removed from rail tank cars as follows:

(1) When cleaning rail cars containing pressurized organic gases, each wash station has a maximum throughput of 0.17 rail cars per hour. Residual pressurized organic gases are removed by rail car depressurization, followed by rail car purging/degassing with nitrogen gas, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Any residual organic gases in the rail tank car after purging/degassing are exhausted through the general ventilation vent CL-1;

(2) When cleaning rail cars containing high vapor pressure liquid organic chemicals, each wash station has a maximum throughput of 0.5 rail cars per hour. Residual high vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1. For rail tank cars with lube oil residuals, after the lube oil is drained and collected, clean fuel oil from storage tank FO-1 is used to rinse the tank car, and the used rinse oil is drained from the tank car and stored in storage tank FO-2 until being sent off-site for disposal, with both storage tanks exhausting through the general ventilation vent CL-2. Following the fuel oil rinse, residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Residual fuel oil in the

rail tank car is removed with mild detergent washes, with the rinse water treated as indicated below under item (6). The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(3) When cleaning rail cars containing low vapor pressure liquid organic chemicals, each wash station has a maximum throughput of one (1) rail car per hour. Residual low vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic liquids in the rail tank car removed with mild detergent washes, with any residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, and with volatile organic compound emissions exhausted through the general ventilation vent CL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(4) When cleaning rail cars containing inorganic chemical solutions/slurries, each wash station has a maximum throughput of one (1) rail car per hour. Residual inorganic chemical solutions/slurries are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(5) When cleaning rail cars containing liquid or semi-solid food grade products, each wash station has a maximum throughput of one (1) rail car per hour. Residual food grade products are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(6) wash and rinse waters (approximately 500 gallons per car) generated at the wash stations are drained from the rail tank cars to a wash pad and collected in a sump system, identified as S-1, where the wash and rinse waters may be treated to adjust pH and/or to remove oil and grease using a dissolved air flotation unit prior to being stored in two (2) rinse tanks, identified as R-1 and R-2, exhausting through the general ventilation vent CL-2. The wash and rinse waters and any oil and grease sludge collected are then sent off-site for disposal; and

(7) One (1) natural gas-assisted enclosed flare, identified as FL-1, equipped with a natural gas-fired pilot that operates at a maximum heat input capacity of 0.476 MMBtu/hr, and controlling VOC emissions at a maximum heat input capacity of 84 MMBtu/hr, exhausting through stack FL-1.

Note: Each of the ten (10) wash stations can clean rail tank cars containing any of the above listed chemicals or products and their combinations.

(b) Two (2) vertical fixed roof fuel oil storage tanks, identified as FO-1 and FO-2, approved for construction in 2011, located in Building #3, each with a maximum storage capacity of 3,422 gallons, with both storage tanks exhausting through the general ventilation vent CL-2.

(c) Two (2) vertical fixed roof rinse tanks, identified as R-1 and R-2, approved for construction in 2011, located in Building #3, each with a maximum storage capacity of 7,050 gallons, with both rinse tanks exhausting through the general ventilation vent CL-2.

(d) One (1) hopper rail car dig out station, identified as WS-11, constructed in 2007, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

(e) One (1) hopper rail car dig out station, identified as WS-12, approved for construction in 2011, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5,000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

(f) One (1) rail car refurbishing operation, constructed in 2007, consisting of the following:

(1) one (1) welding operation, constructed in 2007, located in Repair Buildings #1 and #2, for repair of rail cars, consisting of eighteen (18) metal inert gas (MIG) welding stations, each with a maximum electrode usage rate of 0.29 pounds of electrode stick per hour (Electrode Type E70S), and exhausting through vents V-1 and V-2, respectively;

(2) one (1) flame cutting operation, constructed in 2007, located in Repair Buildings #1 and #2, consisting of eighteen (18) oxyacetylene/electric arc flame cutting stations, each with a maximum metal thickness cut of 1.0 inches and a maximum metal cutting rate of 6.3 inches per minute, and exhausting through vents V-1 and V-2, respectively;

(3) one (1) abrasive blasting unit, constructed in 2007, located in Building #4, using a coal slag blasting media at a maximum usage rate of 4000 pounds of abrasive per hour, with particulate emissions controlled by one (1) dust collector with a maximum outlet grain loading of less than or equal to 0.01 grain per actual cubic foot when operated at a maximum gas flow rate of four thousand (15,000) actual cubic feet per minute (acfm), and exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(4) one (1) abrasive storage silo, constructed in 2007, with a maximum storage capacity of 50 tons, with abrasive pneumatically conveyed to the silo at a maximum loading rate of 25 tons per hour, with particulate emissions controlled by one (1) dust collector associated with the abrasive blasting unit, exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(5) one (1) painting and stenciling operation, constructed in 2007, located in Building #5, with a maximum process rate of 0.144 rail cars per hour, utilizing two (2) air atomized spray guns, for application of surface coatings to rail cars at a maximum rate of 10.5 gallons of based coat per rail car and 14 gallons of top coat per rail car, with cleanup operations utilizing a non-halogenated organic solvent, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(g) One (1) tank car liner installation operation, approved for construction in 2011, located in Building #5, with a maximum throughput of 0.0962 rail cars per hour, using spray gun application at a maximum application rate of 12.3 gallons of liquid liner per rail car, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(h) One (1) natural gas-fired air heater for curing tank car liners, identified as H-1, approved for construction in 2011, located in Building #5, with a maximum heat input capacity of 4.0 MMBtu/hr, equipped with a low NOx burner, and exhausting through vent H-1.

(i) One (1) natural gas-fired steam boiler, approved for construction in 2011, rated at 250 boiler horsepower (HP), with a maximum heat input capacity of 8.37 MMBtu/hr, equipped with a low NOx burner, and exhausting through stack B-1.

(j) Unpaved roads and parking lots with public access.

A.3 Insignificant Activities [326 IAC 2-7-1(21)][326 IAC 2-8-3(c)(3)(I)]

This stationary source does not currently have any insignificant activities, as defined in 326 IAC 2-7-1(21).

A.4 FESOP Applicability [326 IAC 2-8-2]

This stationary source, otherwise required to have a Part 70 permit as described in 326 IAC 2-7-2(a), has applied to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) for a Federally Enforceable State Operating Permit (FESOP).

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-8-1]

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

B.2 Permit Term [326 IAC 2-8-4(2)][326 IAC 2-1.1-9.5][IC 13-15-3-6(a)]

(a) This permit, F027-29701-00006, is issued for a fixed term of five (5) years from the issuance date of this permit, as determined in accordance with IC 4-21.5-3-5(f) and IC 13-15-5-3. Subsequent revisions, modifications, or amendments of this permit do not affect the expiration date of this permit.

(b) If IDEM, OAQ, upon receiving a timely and complete renewal permit application, fails to issue or deny the permit renewal prior to the expiration date of this permit, this existing permit shall not expire and all terms and conditions shall continue in effect, until the renewal permit has been issued or denied.

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

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

(a) the condition is modified in a subsequent permit action pursuant to Title I of the Clean Air Act; or

(b) the emission unit to which the condition pertains permanently ceases operation.

B.4 Enforceability [326 IAC 2-8-6][IC 13-17-12]

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

B.5 Severability [326 IAC 2-8-4(4)]

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

B.6 Property Rights or Exclusive Privilege [326 IAC 2-8-4(5)(D)]

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

B.7 Duty to Provide Information [326 IAC 2-8-4(5)(E)]

(a) The Permittee shall furnish to IDEM, OAQ, within a reasonable time, any information that IDEM, OAQ may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to IDEM, OAQ copies of records required to be kept by this permit.

(b) For information furnished by the Permittee to IDEM, OAQ, the Permittee may include a claim of confidentiality in accordance with 326 IAC 17.1. When furnishing copies of requested records directly to U. S. EPA, the Permittee may assert a claim of confidentiality in accordance with 40 CFR 2, Subpart B.

B.8 Certification [326 IAC 2-8-3(d)][326 IAC 2-8-4(3)(C)(i)][326 IAC 2-8-5(1)]

(a) A certification required by this permit meets the requirements of 326 IAC 2-8-5(a)(1) if:

(1) it contains a certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1), and

(2) the certification states that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete.

(b) The Permittee may use the attached Certification Form, or its equivalent with each submittal requiring certification. One (1) certification may cover multiple forms in one (1) submittal.

(c) An "authorized individual" is defined at 326 IAC 2-1.1-1(1).

B.9 Annual Compliance Certification [326 IAC 2-8-5(a)(1)]

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

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

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

(c) The annual compliance certification report shall include the following:

(1) The appropriate identification of each term or condition of this permit that is the basis of the certification;

(2) The compliance status;

(3) Whether compliance was continuous or intermittent;

(4) The methods used for determining the compliance status of the source, currently and over the reporting period consistent with 326 IAC 2-8-4(3); and

(5) Such other facts, as specified in Sections D of this permit, as IDEM, OAQ may require to determine the compliance status of the source.

The submittal by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

B.10 Compliance Order Issuance [326 IAC 2-8-5(b)]

IDEM, OAQ may issue a compliance order to this Permittee upon discovery that this permit is in nonconformance with an applicable requirement. The order may require immediate compliance or contain a schedule for expeditious compliance with the applicable requirement.

B.11 Preventive Maintenance Plan [326 IAC 1-6-3][326 IAC 2-8-4(9)][326 IAC 2-8-5(a)(1)]

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

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

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

The PMP extension notification does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

The Permittee shall implement the PMPs.

(b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Permittee to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions. The PMPs and their submittal do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) To the extent the Permittee is required by 40 CFR Part 60/63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

B.12 Emergency Provisions [326 IAC 2-8-12]

(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 2-8-12.

(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, or Southwest Regional Office 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 and Enforcement Branch), or
Telephone Number: 317-233-0178 (ask for Office of Air Quality, Compliance and Enforcement Branch)
Facsimile Number: 317-233-6865
Southwest Regional Office phone: (812) 380 2305; fax: (812) 380 2304.

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

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

The notice fulfills the requirement of 326 IAC 2-8-4(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 a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(6) The Permittee immediately took all reasonable steps to correct the emergency.

(c) In any enforcement proceeding, the Permittee seeking to establish the occurrence of an emergency has the burden of proof.

(d) This emergency provision supersedes 326 IAC 1-6 (Malfunctions). This permit condition is in addition to any emergency or upset provision contained in any applicable requirement.

(e) The Permittee seeking to establish the occurrence of an emergency shall make records available upon request to ensure that failure to implement a PMP did not cause or contribute to an exceedance of any limitations on emissions. However, IDEM, OAQ may require that the Preventive Maintenance Plans required under 326 IAC 2-8-3(c)(6) 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 2-8 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 material of substantial economic value.

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

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

(a) All terms and conditions of permits established prior to F027-29701-00006 and issued pursuant to permitting programs approved into the state implementation plan have been either:

(1) incorporated as originally stated,

(2) revised, or

(3) deleted.

(b) All previous registrations and permits are superseded by this permit.

B.14 Termination of Right to Operate [326 IAC 2-8-9][326 IAC 2-8-3(h)]

The Permittee's right to operate this source terminates with the expiration of this permit unless a timely and complete renewal application is submitted at least nine (9) months prior to the date of expiration of the source’s existing permit, consistent with 326 IAC 2-8-3(h) and 326 IAC 2-8-9.

B.15 Permit Modification, Reopening, Revocation and Reissuance, or Termination [326 IAC 2-8-4(5)(C)][326 IAC 2-8-7(a)][326 IAC 2-8-8]

(a) This permit may be modified, reopened, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a Federally Enforceable State Operating Permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any condition of this permit. [326 IAC 2-8-4(5)(C)] The notification by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(b) This permit shall be reopened and revised under any of the circumstances listed in IC 13-15-7-2 or if IDEM, OAQ determines any of the following:

(1) That this permit contains a material mistake.

(2) That inaccurate statements were made in establishing the emissions standards or other terms or conditions.

(3) That this permit must be revised or revoked to assure compliance with an applicable requirement. [326 IAC 2-8-8(a)]

(c) Proceedings by IDEM, OAQ to reopen and revise this permit shall follow the same procedures as apply to initial permit issuance and shall affect only those parts of this permit for which cause to reopen exists. Such reopening and revision shall be made as expeditiously as practicable. [326 IAC 2-8-8(b)]

(d) The reopening and revision of this permit, under 326 IAC 2-8-8(a), shall not be initiated before notice of such intent is provided to the Permittee by IDEM, OAQ at least thirty (30) days in advance of the date this permit is to be reopened, except that IDEM, OAQ may provide a shorter time period in the case of an emergency. [326 IAC 2-8-8(c)]

B.16 Permit Renewal [326 IAC 2-8-3(h)]

(a) The application for renewal shall be submitted using the application form or forms prescribed by IDEM, OAQ and shall include the information specified in 326 IAC 2-8-3. Such information shall be included in the application for each emission unit at this source, except those emission units included on the trivial or insignificant activities list contained in 326 IAC 2-7-1(21) and 326 IAC 2-7-1(40). The renewal application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Request for renewal shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

(b) A timely renewal application is one that is:

(1) Submitted at least nine (9) months prior to the date of the expiration of this permit; and

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

(c) If the Permittee submits a timely and complete application for renewal of this permit, the source's failure to have a permit is not a violation of 326 IAC 2-8 until IDEM, OAQ takes final action on the renewal application, except that this protection shall cease to apply if, subsequent to the completeness determination, the Permittee fails to submit by the deadline specified, pursuant to 326 IAC 2-8-3(g), in writing by IDEM, OAQ any additional information identified as being needed to process the application.

B.17 Permit Amendment or Revision [326 IAC 2-8-10][326 IAC 2-8-11.1]

(a) Permit amendments and revisions are governed by the requirements of 326 IAC 2-8-10 or 326 IAC 2-8-11.1 whenever the Permittee seeks to amend or modify this permit.

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

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.18 Operational Flexibility [326 IAC 2-8-15][326 IAC 2-8-11.1]

(a) The Permittee may make any change or changes at the source that are described in 326 IAC 2-8-15(b) through (d) without a prior permit revision, if each of the following conditions is met:

(1) The changes are not modifications under any provision of Title I of the Clean Air Act;

(2) Any approval required by 326 IAC 2-8-11.1 has been obtained;

(3) The changes do not result in emissions which exceed the limitations provided in this permit (whether expressed herein as a rate of emissions or in terms of total emissions);

(4) The Permittee notifies the:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

and

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

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

(5) The Permittee maintains records on-site, on a rolling five (5) year basis, which document all such changes and emission trades that are subject to 326 IAC 2-8-15(b) through (d). The Permittee shall make such records available, upon reasonable request, for public review.

Such records shall consist of all information required to be submitted to IDEM, OAQ in the notices specified in 326 IAC 2-8-15(b)(2), (c)(1), and (d).

(b) Emission Trades [326 IAC 2-8-15(c)]
The Permittee may trade emissions increases and decreases at the source, where the applicable SIP provides for such emission trades without requiring a permit revision, subject to the constraints of Section (a) of this condition and those in 326 IAC 2-8-15(c).

(c) Alternative Operating Scenarios [326 IAC 2-8-15(d)]
The Permittee may make changes at the source within the range of alternative operating scenarios that are described in the terms and conditions of this permit in accordance with 326 IAC 2-8-4(7). No prior notification of IDEM, OAQ, or U.S. EPA is required.

(d) Backup fuel switches specifically addressed in, and limited under, Section D of this permit shall not be considered alternative operating scenarios. Therefore, the notification requirements of part (a) of this condition do not apply.

B.19 Source Modification Requirement [326 IAC 2-8-11.1]

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

B.20 Inspection and Entry [326 IAC 2-8-5(a)(2)][IC 13-14-2-2][IC 13-17-3-2][IC 13-30-3-1]

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

(a) Enter upon the Permittee's premises where a FESOP source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;

(b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

(c) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

(d) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with this permit or applicable requirements; and

(e) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, utilize any photographic, recording, testing, monitoring, or other equipment for the purpose of assuring compliance with this permit or applicable requirements.

B.21 Transfer of Ownership or Operational Control [326 IAC 2-8-10]

(a) The Permittee must comply with the requirements of 326 IAC 2-8-10 whenever the Permittee seeks to change the ownership or operational control of the source and no other change in the permit is necessary.

(b) Any application requesting a change in the ownership or operational control of the source shall contain a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new Permittee. The application shall be submitted to:

Indiana Department of Environmental Management
Permit Administration and Support Section, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

Any such application does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) The Permittee may implement administrative amendment changes addressed in the request for an administrative amendment immediately upon submittal of the request. [326 IAC 2-8-10(b)(3)]

B.22 Annual Fee Payment [326 IAC 2-7-19][326 IAC 2-8-4(6)][326 IAC 2-8-16][326 IAC 2-1.1-7]

(a) The Permittee shall pay annual fees to IDEM, OAQ no later than thirty (30) calendar days of receipt of a billing. Pursuant to 326 IAC 2-7-19(b), if the Permittee does not receive a bill from IDEM, OAQ the applicable fee is due April 1 of each year.

(b) Failure to pay may result in administrative enforcement action or revocation of this permit.

(c) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

B.23 Credible Evidence [326 IAC 2-8-4(3)][326 IAC 2-8-5][62 FR 8314][326 IAC 1-1-6]

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

SECTION C SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-8-4(1)]

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

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

C.2 Overall Source Limit [326 IAC 2-8]

The purpose of this permit is to limit this source's potential to emit to less than major source levels for the purpose of Section 502(a) of the Clean Air Act.

(a) Pursuant to 326 IAC 2-8:

(1) The potential to emit any regulated pollutant, except particulate matter (PM) and greenhouse gases (GHGs), from the entire source shall be limited to less than one hundred (100) tons per twelve (12) consecutive month period.

(2) The potential to emit any individual hazardous air pollutant (HAP) from the entire source shall be limited to less than ten (10) tons per twelve (12) consecutive month period; and

(3) The potential to emit any combination of HAPs from the entire source shall be limited to less than twenty-five (25) tons per twelve (12) consecutive month period.

(4) The potential to emit greenhouse gases (GHGs) from the entire source shall be limited to less than one hundred thousand (100,000) tons of CO2 equivalent emissions (CO2e) per twelve (12) consecutive month period.

(b) Pursuant to 326 IAC 2-2 (PSD), potential to emit particulate matter (PM) from the entire source shall be limited to less than two hundred fifty (250) tons per twelve (12) consecutive month period.

(c) This condition shall include all emission points at this source including those that are insignificant as defined in 326 IAC 2-7-1(21). The source shall be allowed to add insignificant activities not already listed in this permit, provided that the source's potential to emit does not exceed the above specified limits.

(d) Section D of this permit contains independently enforceable provisions to satisfy this requirement.

C.3 Opacity [326 IAC 5-1]

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

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

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

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1.

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

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

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

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

C.7 Asbestos Abatement Projects [326 IAC 14-10][326 IAC 18][40 CFR 61, Subpart M]

(a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

(b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:

(1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or

(2) If there is a change in the following:

(A) Asbestos removal or demolition start date;

(B) Removal or demolition contractor; or

(C) Waste disposal site.

(c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

(d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

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

The notice shall include a signed certification from the owner or operator that the information provided in this notification is correct and that only Indiana licensed workers and project supervisors will be used to implement the asbestos removal project. The notifications do not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(e) Procedures for Asbestos Emission Control
The Permittee shall comply with the applicable emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-1, emission control requirements are applicable for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

(f) Demolition and Renovation
The Permittee shall thoroughly inspect the affected facility or part of the facility where the demolition or renovation will occur for the presence of asbestos pursuant to 40 CFR 61.145(a).

(g) Indiana Licensed Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Licensed Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos.

Testing Requirements [326 IAC 2-8-4(3)]

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

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

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

no later than thirty-five (35) days prior to the intended test date. The protocol submitted by the Permittee does not require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(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 a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

(c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ not later than forty-five (45) days after the completion of the testing. An extension may be granted by IDEM, OAQ if the Permittee submits to IDEM, OAQ a reasonable written explanation not later than five (5) days prior to the end of the initial forty-five (45) day period.

Compliance Requirements [326 IAC 2-1.1-11]

C.9 Compliance Requirements [326 IAC 2-1.1-11]

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

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.10 Compliance Monitoring [326 IAC 2-8-4(3)][326 IAC 2-8-5(a)(1)]

Unless otherwise specified in this permit, for all monitoring requirements not already legally required, the Permittee shall be allowed up to ninety (90) days from the date of permit issuance or of initial start-up, whichever is later, to begin such monitoring. If due to circumstances beyond the Permittee's control, any monitoring equipment required by this permit cannot be installed and operated no later than ninety (90) days after permit issuance or the date of initial startup, whichever is later, the Permittee may extend the compliance schedule related to the equipment for an additional ninety (90) days provided the Permittee notifies:

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

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

The notification which shall be submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

C.11 Instrument Specifications [326 IAC 2-1.1-11][326 IAC 2-8-4(3)][326 IAC 2-8-5(1)]

(a) When required by any condition of this permit, an analog instrument used to measure a parameter related to the operation of an air pollution control device shall have a scale such that the expected maximum reading for the normal range shall be no less than twenty percent (20%) of full scale.

(b) The Permittee may request that the IDEM, OAQ approve the use of an instrument that does not meet the above specifications provided the Permittee can demonstrate that an alternative instrument specification will adequately ensure compliance with permit conditions requiring the measurement of the parameters.

Corrective Actions and Response Steps [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

C.12 Risk Management Plan [326 IAC 2-8-4][40 CFR 68]

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

C.13 Response to Excursions or Exceedances [326 IAC 2-8-4][326 IAC 2-8-5]

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

(a) The Permittee shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.

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

(1) initial inspection and evaluation;

(2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system); or

(3) any necessary follow-up actions to return operation to normal or usual manner of operation.

(c) A determination of whether the Permittee has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:

(1) monitoring results;

(2) review of operation and maintenance procedures and records; and/or

(3) inspection of the control device, associated capture system, and the process.

(d) Failure to take reasonable response steps shall be considered a deviation from the permit.

(e) The Permittee shall record the reasonable response steps taken.

C.14 Actions Related to Noncompliance Demonstrated by a Stack Test [326 IAC 2-8-4][326 IAC 2-8-5]

(a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall submit a description of its response actions to IDEM, OAQ, no later than seventy-five (75) days after the date of the test.

(b) A retest to demonstrate compliance shall be performed no later than one hundred eighty (180) days after the date of the test. Should the Permittee demonstrate to IDEM, OAQ that retesting in one hundred eighty (180) days is not practicable, IDEM, OAQ may extend the retesting deadline

(c) IDEM, OAQ reserves the authority to take any actions allowed under law in response to noncompliant stack tests.

The response action documents submitted pursuant to this condition do require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

C.15 General Record Keeping Requirements [326 IAC 2-8-4(3)][326 IAC 2-8-5]

(a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.

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

C.16 General Reporting Requirements [326 IAC 2-8-4(3)(C)][326 IAC 2-1.1-11]

(a) The Permittee shall submit the attached Quarterly Deviation and Compliance Monitoring Report or its equivalent. Any deviation from permit requirements, the date(s) of each deviation, the cause of the deviation, and the response steps taken must be reported except that a deviation required to be reported pursuant to an applicable requirement that exists independent of this permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. This report shall be submitted not later than thirty (30) days after the end of the reporting period. The Quarterly Deviation and Compliance Monitoring Report shall include a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1). A deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit.

(b) The address for report submittal is:

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

(c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

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

Stratospheric Ozone Protection

C.17 Compliance with 40 CFR 82 and 326 IAC 22-1

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

SECTION D.1 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(a) One (1) rail tank car cleaning operation, approved for construction in 2011, located in Building #3, consisting of twelve (10) wash stations, identified as WS-1 through WS-10, for cleaning of the exterior and interior of rail cars, with residual materials removed from rail tank cars as follows:

(1) When cleaning rail cars containing pressurized organic gases, each wash station has a maximum throughput of 0.17 rail cars per hour. Residual pressurized organic gases are removed by rail car depressurization, followed by rail car purging/degassing with nitrogen gas, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Any residual organic gases in the rail tank car after purging/degassing are exhausted through the general ventilation vent CL-1;

(2) When cleaning rail cars containing high vapor pressure liquid organic chemicals, each wash station has a maximum throughput of 0.5 rail cars per hour. Residual high vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1. For rail tank cars with lube oil residuals, after the lube oil is drained and collected, clean fuel oil from storage tank FO-1 is used to rinse the tank car, and the used rinse oil is drained from the tank car and stored in storage tank FO-2 until being sent off-site for disposal, with both storage tanks exhausting through the general ventilation vent CL-2. Following the fuel oil rinse, residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Residual fuel oil in the rail tank car is removed with mild detergent washes, with the rinse water treated as indicated below under item (6). The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(3) When cleaning rail cars containing low vapor pressure liquid organic chemicals, each wash station has a maximum throughput of one (1) rail car per hour. Residual low vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic liquids in the rail tank car removed with mild detergent washes, with any residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, and with volatile organic compound emissions exhausted through the general ventilation vent CL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(4) When cleaning rail cars containing inorganic chemical solutions/slurries, each wash station has a maximum throughput of one (1) rail car per hour. Residual inorganic chemical solutions/slurries are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

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

Emissions Unit Description (continued):

(5) When cleaning rail cars containing liquid or semi-solid food grade products, each wash station has a maximum throughput of one (1) rail car per hour. Residual food grade products are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(6) wash and rinse waters (approximately 500 gallons per car) generated at the wash stations are drained from the rail tank cars to a wash pad and collected in a sump system, identified as S-1, where the wash and rinse waters may be treated to adjust pH and/or to remove oil and grease using a dissolved air flotation unit prior to being stored in two (2) rinse tanks, identified as R-1 and R-2, exhausting through the general ventilation vent CL-2. The wash and rinse waters and any oil and grease sludge collected are then sent off-site for disposal; and

(7) One (1) natural gas-assisted enclosed flare, identified as FL-1, equipped with a natural gas-fired pilot that operates at a maximum heat input capacity of 0.476 MMBtu/hr, and controlling VOC emissions at a maximum heat input capacity of 84 MMBtu/hr, exhausting through stack FL-1.

Note: Each of the ten (10) wash stations can clean rail tank cars containing any of the above listed chemicals or products and their combinations.

(d) One (1) hopper rail car dig out station, identified as WS-11, constructed in 2007, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

(e) One (1) hopper rail car dig out station, identified as WS-12, approved for construction in 2011, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5,000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.1.1 Volatile Organic Compounds (VOC) [326 IAC 8-1-6]

Pursuant to 326 IAC 8-1-6 (New Facilities, General Reduction Requirements), the Permittee shall control the VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation using the Best Available Control Technology (BACT), which has been determined to be the following:

(a) When cleaning rail tank cars containing pressurized organic gases:

(1) During Depressurization
Each rail tank car shall be depressurized, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%;

(2) During Purging/Degassing
Each rail tank car shall be purged/degassed equal to or greater than a total of four (4) tank volumes, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%; and

(3) During Venting, Washing, Rinsing, and Drying
Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (a)(1) and (a)(2) above.

(b) When cleaning rail tank cars containing high vapor pressure liquid organic chemicals:

(1) For Residual Liquids in Rail Tank Cars:
The Permittee shall comply with the following work practices:

(A) Residual high vapor pressure liquid organic chemicals shall be drained and collected in a container and sent off-site for re-use or disposal; and

(B) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(2) During Purging/Degassing
Each rail tank car shall be purged/degassed equal to or greater than a total of four (4) tank volumes, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%; and

(3) During Venting, Washing, Rinsing, and Drying
The Permittee shall comply with the following work practices:

(A) Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (b)(1) and (b)(2) above;

(B) The Permittee shall collect, process, store, and dispose of wash waters and rinse waters generated at the wash stations and any organic liquids collected by the dissolved air flotation unit in a manner that minimizes VOC emissions; and

(C) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(c) When cleaning rail tank cars containing low vapor pressure liquid organic chemicals:

(1) For Residual Liquids in Rail Tank Cars:
The Permittee shall comply with the following work practices:

(A) Residual low vapor pressure liquid organic chemicals shall be drained and collected in a container and sent off-site for re-use or disposal; and

(B) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(2) During Venting, Washing, Rinsing, and Drying
The Permittee shall comply with the following work practices:

(A) Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (c)(1) above;

(B) The Permittee shall collect, process, store, and dispose of wash waters and rinse waters generated at the wash stations and any organic liquids collected by the dissolved air flotation unit in a manner that minimizes VOC emissions; and

(C) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(d) When storing and transferring of liquid organic chemicals and VOC containing wastes, the Permittee shall comply with, but not be limited to, the following work practices:

(1) Store all liquid organic chemicals and VOC containing wastes in closed containers that employ a tightly fitting cover. Collection containers shall be free of all liquid leaks. The Permittee shall replace or repair collection containers for which a liquid leak is detected;

(2) Ensure that storage containers are kept closed at all times except when depositing or removing liquid organic chemicals or VOC containing wastes;

(3) Minimize spills of liquid organic chemicals and VOC containing wastes and clean up any spill immediately; and

(4) When transferring liquid organic chemicals or VOC containing wastes from a storage container to another location, convey the material in closed containers or pipes.

D.1.2 Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP) Limitations [326 IAC 2-8-4][326 IAC 2-2][326 IAC 2-4.1]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs) not applicable, the Permittee shall comply with the following:

(a) VOC emissions from the rail tank car cleaning operation shall not exceed 50.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month;

(b) Combined HAP emissions from the rail tank car cleaning operation shall not exceed 3.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month;

(c) Each single HAP emissions from the rail tank car cleaning operation shall not exceed 3.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month;

Compliance with these limits, combined with the potential to emit VOC and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of VOC to less than 100 tons per 12 consecutive month period, any single HAP to less than ten (10) tons per 12 consecutive month period, and total HAPs to less than twenty-five (25) tons per 12 consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs) not applicable.

D.1.3 Rail Tank Car Cleaning Operations [326 IAC 2-8]

In order to ensure compliance with 326 IAC 2-8 (FESOP), the Permittee shall drain or remove residual liquid, solutions/slurries, and semi-solid chemicals and materials contained in the rail tank cars using the practices commonly employed to remove materials from rail tank cars (e.g., draining, pumping, and/or top unloading using tank pressurization and removal by a dip leg, dip tube, or siphon tube). The chemicals and materials shall be collected in a drum and sent off-site for re-use or disposal.

Compliance with this condition shall ensure compliance with 326 IAC 2-8 (FESOP).

D.1.4 Operational Limitations [40 CFR Part 63, Subpart EEE][326 IAC 20-28]

The Permittee shall not combust hazardous waste, as defined under 40 CFR 261.3, in the rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations. Compliance with this condition ensures that the rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations each do not meet the definition of a hazardous waste combustor under 40 CFR 63, Subpart EEE. Therefore, 40 CFR 63, Subpart EEE does not apply to the the rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations.

D.1.5 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(e), particulate emissions from each of the two (2) hopper rail car dig out stations shall not exceed 7.58 pounds per hour when operating at a process weight rate of 2.5 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

D.1.6 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for the rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.1.7 Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP) Control [326 IAC 8-1-2][326 IAC 2-8-4]

In order to comply with Conditions D.1.1 and D.1.2, the flare (FL-1) shall be in operation and control VOC and HAP emissions from the rail tank car cleaning during rail tank car depressurization and purging/degassing as specified in Conditions D.1.1(a)(1) and D.1.1(a)(2).

For the purpose of this section, "operation of the flare" shall mean the presence of a pilot flame or equivalent. The flare shall be operated per manufacturer's specifications.

D.1.8 Testing Requirements [326 IAC 2-8-5(1), (4)] [326 IAC 2-1.1-11]

In order to demonstrate compliance with Condition D.1.1, the Permittee shall perform VOC testing (including capture efficiency and destruction efficiency) for flare FL-1, within 60 days after achieving the maximum capacity of one (1) or more of the wash stations (WS-1 through WS-10), but not later than one hundred eighty (180) days after initial startup of one (1) or more of the wash stations (WS-1 through WS-10), utilizing methods as approved by the Commissioner. This test shall be repeated at least once every five (5) years from the date of the most recent valid compliance demonstration. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

D.1.9 Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAP)

Compliance with the VOC and HAP limits contained in Condition D.1.2 shall be determined as follows:

(a) Emissions of VOC and HAPs from rail tank cars shall be calculated using the following equation:

$$E_{TOT} = \sum_{m=1}^{12} \left(E_D + E_P + E_C \right)$$

Where:

E_{TOT} = Total emissions of pollutant (tons/year);
E_D = Total emissions of pollutant from rail tank car depressurization (tons/month) as calculated in (b) below;
E_P = Total emissions of pollutant from rail tank car purging/degassing (tons/month) as calculated in (c) below;
E_C = Total emissions of pollutant from rail tank car cleaning (venting, washing, and rinsing) (tons/month) as calculated in (d) below; and
m = Each calendar month during the compliance period.

(b) During rail tank car depressurization, VOC and HAP pollutant emissions shall be calculated using the following equations:

$$E_D = \frac{\sum_{j=1}^{J} \left[\sum_{k=1}^{K} \left[\left(M_{k,i} - M_{k,f} \right) * \left(\frac{100\% - CE}{100\%} \right) \right] \right]}{2000\, lbs / ton}$$

$$M_{k,i} = \frac{MW_k * Y_k * P_{TOT,i} * V_{TOT}}{Z_k * R * T_i}$$

$$M_{k,f} = \frac{MW_k * Y_k * P_{TOT,f} * V_{TOT}}{Z_k * R * T_f}$$

Where:

E_D = Total emissions of pollutant from rail tank car depressurization (tons/month);
j = Each rail tank car processed per month
J = The total number of rail tank cars processed per month
k = Each pollutant in rail tank car;
K = The total number of pollutants in each rail tank car;
$M_{k,i}$ = Initial mass of each pollutant in each rail tank car before depressurization (lbs);
$M_{k,f}$ = Final mass of each pollutant in each rail tank car after depressurization (lbs);
CE = Overall control efficiency of flare (this value shall equal 98% until a valid compliance demonstration is conducted, in which case the value shall equal that determined from the most recent valid compliance demonstration);
MW_k = Vapor molecular weight of each pollutant (lb/lbmol);
Y_k = Mole or volume fraction of each pollutant in rail tank car vapor;
$P_{TOT,i}$ = Initial pressure of gas in rail tank car (psia);
$P_{TOT,f}$ = Final pressure of gas in rail tank car (psia);
V_{TOT} = Total volume of each rail tank car (psia);
Z_k = Compressibility factor of pollutant;
R = Universal Gas Constant (10.73 psia-ft^3/lbmol-°R); and
T_i = Initial temperature within each rail tank car (degrees Rankine, °R).
T_f = Final temperature within each rail tank car (degrees Rankine, °R).

(c) During rail tank car purging/degassing, VOC and HAP pollutant emissions shall be calculated using the following equations:

$$E_P = \frac{\sum_{j=1}^{J}\left[\sum_{k=1}^{K}\left[\left(M_{k,i} - M_{k,f}\right) * \left(\frac{100\% - CE}{100\%}\right)\right]\right]}{2000\, lbs / ton}$$

$$M_{k,i} = \frac{MW_k * Y_k * P_{TOT,i} * V_{TOT}}{R * T_i}$$

$$M_{k,f} = \left(\frac{M_{k,i}}{\exp(n)}\right) \approx \left(M_{k,i} * 0.368^n\right)$$

Where:

E_P = Total emissions of pollutant from rail tank car purging/degassing (tons/month);
j = Each rail tank car processed per month;
J = The total number of rail tank cars processed per month;
k = Each pollutant in rail tank car;
K = The total number of pollutants in each rail tank car;
$M_{k,i}$ = Initial mass of each pollutant in each rail tank car before purging/degassing (lbs);
$M_{k,f}$ = Final mass of each pollutant in each rail tank car after purging/degassing (lbs);
CE = Overall control efficiency of flare (this value shall equal 98% until a valid compliance demonstration is conducted, in which case the value shall equal that determined from the most recent valid compliance demonstration);
MW_k = Vapor molecular weight of each pollutant (lb/lbmol);
Y_k = Mole or volume fraction of each pollutant in rail tank car vapor;

$P_{TOT,i}$ = Initial pressure of gas in rail tank car before purging/degassing (psia);
V_{TOT} = Total volume of each rail tank car (psia);
R = Universal Gas Constant (10.73 psia-ft^3/lbmol-°R);
T_i = Initial temperature within each rail tank car (degrees Rankine, °R); and
exp( ) = Exponential function
n = Number of vapor volume changes by purging/degassing for each rail tank car.

(d) During cleaning (venting, washing, and rinsing) of rail tank cars that previously contained pressurized organic gases, high vapor pressure liquid organics, and low vapor pressure liquid organics, VOC and HAP pollutant emissions shall be calculated using the following equations:

$$E_C = \frac{\sum_{j=1}^{J}\left[\sum_{k=1}^{K}\left(M_{k,i}\right)\right]}{2000\,lbs/ton}$$

$$M_{k,i} = \frac{MW_k * Y_k * P_{TOT,i} * V_{TOT}}{R * T_i}$$

Where:

E_C = Total emissions of pollutant from rail tank car cleaning (venting, washing, and rinsing) (tons/month);
j = Each rail tank car processed per month;
J = The total number of rail tank cars processed per month;
k = Each pollutant in rail tank car;
K = The total number of pollutants in each rail tank car;
$M_{k,i}$ = Initial mass of each pollutant in each rail tank car before cleaning (venting, washing, and rinsing) (lbs);
MW_k = Vapor molecular weight of each pollutant (lb/lbmol);
Y_k = Mole or volume fraction of each pollutant in rail tank car vapor;
$P_{TOT,i}$ = Initial pressure of gas in rail tank car before cleaning (venting, washing, and rinsing) (psia);
V_{TOT} = Total volume of each rail tank car (psia);
R = Universal Gas Constant (10.73 psia-ft^3/lbmol-°R); and
T_i = Initial temperature within each rail tank car (degrees Rankine, °R).

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.1.10 Flare Parametric Monitoring

To demonstrate compliance with Conditions D.1.1, D.1.2, and D.1.7, the Permittee shall continuously monitor the presence of the flare pilot flame using a thermocouple or any other equivalent device to detect the presence of a flame. For the purpose of this condition, continuous means no less than once per minute. If a condition exists which should result in a response step, the Permittee shall take a reasonable response step(s). Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take a response step(s) shall be considered a deviation of this permit.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.1.11 Record Keeping Requirements

(a) To document the compliance status with Conditions D.1.1, D.1.2, and D.1.9, the Permittee shall maintain records in accordance with (1) through (6). Records maintained for (1) through (6) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC and HAP emission limits established in Conditions D.1.1 and D.1.2.

(1) The number of rail tank cars processed in the rail tank car cleaning operation each month.

(2) The type and amount of material contained in each rail tank car each month and the type and content of VOC and HAP in each material.

(A) Records shall include manifests, receiving papers, material certifications, material safety data sheets (MSDS), and/or other documentation necessary to verify the type and amount of material contained in each rail tank car and the type and content of VOC and HAP in each material.

(B) Records shall specify whether the material is a pressurized organic gas, a high vapor pressure liquid organic chemical, a low vapor pressure liquid organic chemical, an inorganic chemical solution/slurry, a liquid or semi-solid food grade product, or a solid material.

(3) The type and amount of materials vented to the flare and the phase of the rail tank car cleaning process that was vented to the flare (e.g., rail tank car depressurization or purging/degassing);

(4) Parameter values used to calculate pollutant emissions as specified in the equations contained in Condition D.1.9;

(5) The total VOC, total worst case single HAP, total combined HAPs, emitted each month and each compliance period using the equations contained in Condition D.1.9; and

(6) The Permittee shall include in its daily record when a record is not taken and the reason for the lack of a record (e.g., the facility did not process any rail tank cars that day).

(b) To document the compliance status with Conditions D.1.3 and D.1.4, the Permittee shall maintain records in accordance with (1) through (2).

(1) The Permittee shall maintain daily records of the type of chemicals and materials received and shipped offsite for re-use of disposal.

(A) Records shall include manifests, receiving papers, shipping papers, material certifications, material safety data sheets (MSDS), and/or other documentation necessary to verify the type and amount of chemicals/materials received and shipped by the source;

(B) Records shall differentiate between those chemicals/materials shipped offsite for re-use and those chemicals/materials shipped offsite for disposal;

(C) Records shall specify whether the chemical/material received by the source is an unused commercial chemical product and whether the chemical/material received by the source is a hazardous waste;

(2) The Permittee shall include in its daily record when a record is not taken and the reason for the lack of a record (e.g., the facility did not receive or ship chemicals/materials that day).

(c) To document compliance with Conditions D.1.7 and D.1.10, the Permittee shall maintain records of the following:

(1) Date and time when the rail tank car cleaning operation was venting to the flare and documentation that a flare pilot flame was present.

(2) Monthly records to demonstrate the thermocouple or equivalent device detects the presence of a flame no less than once per minute.

(3) A copy of the manufacturer's operation and maintenance manual that defines operating procedures that will ensure destruction efficiency at the flare.

(4) The design specifications for the flare.

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

D.1.12 Reporting Requirements

A quarterly summary of the information to document the compliance status with Conditions D.1.2(a), D.1.2(b), and D.1.2(c) shall be submitted using the reporting forms located at the end of this permit, or their equivalent, no later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

SECTION D.2 EMISSIONS UNIT OPERATION CONDITIONS

Emissions Unit Description:

(f) One (1) rail car refurbishing operation, constructed in 2007, consisting of the following:

(3) one (1) abrasive blasting unit, constructed in 2007, located in Building #4, using a coal slag blasting media at a maximum usage rate of 4000 pounds of abrasive per hour, with particulate emissions controlled by one (1) dust collector with a maximum outlet grain loading of less than or equal to 0.01 grain per actual cubic foot when operated at a maximum gas flow rate of four thousand (15,000) actual cubic feet per minute (acfm), and exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(4) one (1) abrasive storage silo, constructed in 2007, with a maximum storage capacity of 50 tons, with abrasive pneumatically conveyed to the silo at a maximum loading rate of 25 tons per hour, with particulate emissions controlled by one (1) dust collector associated with the abrasive blasting unit, exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(5) one (1) painting and stenciling operation, constructed in 2007, located in Building #5, with a maximum process rate of 0.144 rail cars per hour, utilizing two (2) air atomized spray guns, for application of surface coatings to rail cars at a maximum rate of 10.5 gallons of based coat per rail car and 14 gallons of top coat per rail car, with cleanup operations utilizing a non-halogenated organic solvent, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(g) One (1) tank car liner installation operation, approved for construction in 2011, located in Building #5, with a maximum throughput of 0.0962 rail cars per hour, using spray gun application at a maximum application rate of 12.3 gallons of liquid liner per rail car, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(i) One (1) natural gas-fired steam boiler, approved for construction in 2011, rated at 250 boiler horsepower (HP), with a maximum heat input capacity of 8.37 MMBtu/hr, equipped with a low NOx burner, and exhausting through stack B-1.

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

Emission Limitations and Standards [326 IAC 2-8-4(1)]

D.2.1 PM, PM10, and PM2.5 Limitations [326 IAC 2-8-4][326 IAC 2-2]

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

(a) The total hours of operation for the abrasive blasting unit shall be less than 1800 hours per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM emissions before control from the abrasive blasting unit shall not exceed 40.0 pounds per hour.

(c) PM10 emissions before control from the abrasive blasting unit shall not exceed 28.0 pounds per hour.

(d) PM2.5 emissions before control from the abrasive blasting unit shall not exceed 28.0 pounds per hour.

Note: The above limitations are based the uncontrolled potential to emit of the abrasive blasting unit. The use of one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

Compliance with these limits, combined with the potential to emit PM, PM10, and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period, PM10 to less than 100 tons per 12 consecutive month period, and PM2.5 to less than 100 tons per 12 consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

D.2.2 Particulate Emission Limitations for Manufacturing Processes [326 IAC 6-3-2]

(a) Pursuant to 326 IAC 6-3-2(e), particulate emissions from the one (1) abrasive blasting unit shall not exceed 41.28 pounds per hour when operating at a process weight rate of 69700 pounds per hour (65700 pound rail car plus 4000 pounds of abrasive per hour). The pound per hour limitation was calculated with the following equation:

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

$E = 55.0\ P^{0.11} - 40$ where: E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

(b) Pursuant to 326 IAC 6-3-2(e), particulate emissions from the one (1) abrasive storage silo shall not exceed 35.43 pounds per hour when operating at a process weight rate of 25 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

(c) Pursuant to 326 IAC 6-3-2(d), particulate from the one (1) painting and stenciling operation shall be controlled by dry particulate filters and the Permittee shall operate the control device in accordance with the manufacturer's specifications.

(d) Pursuant to 326 IAC 6-3-2(d), particulate from the one (1) tank car liner installation operation shall be controlled by dry particulate filters and the Permittee shall operate the control device in accordance with the manufacturer's specifications.

D.2.3 Volatile Organic Compounds [326 IAC 8-2-9]

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the Permitee shall comply with the following requirements for the one (1) painting and stenciling operation and the one (1) tank car liner installation operation:

(a) The Permittee shall not cause, allow, or permit the discharge into the atmosphere of any VOC in excess of the following:

(1) Four and three-tenths (4.3) pounds per gallon of coating, excluding water, delivered to a coating applicator that applies clear coatings.

(2) Three and five-tenths (3.5) pounds per gallon of coating, excluding water, delivered to a coating applicator in a coating application system that is air dried or forced warm air dried at temperatures up to one hundred ninety-four (194) degrees Fahrenheit.

(3) Three and five-tenths (3.5) pounds per gallon of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings.

(4) Three (3) pounds per gallon of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems.

If more than one (1) of these emission limitations applies to a specific coating, then the least stringent emission limitation shall apply.

(b) Work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include, but not be limited to, the following:

(1) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.

(2) Ensure that mixing and storage containers used for VOC containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.

(4) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.

(5) Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

D.2.4 Particulate Emission Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

Pursuant to 326 IAC 6-2-4(a), particulate emissions from the one (1) natural gas-fired steam boiler shall not exceed 0.6 pound per MMBtu of heat input.

D.2.5 Preventive Maintenance Plan [326 IAC 2-8-4(9)]

A Preventive Maintenance Plan is required for the abrasive blasting unit, the abrasive storage silo, the painting and stenciling operation, the tank car liner installation operation, and their control devices. Section B – Preventive Maintenance Plan contains the Permittee's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements

D.2.6 Volatile Organic Compounds [326 IAC 8-1-2][326 IAC 8-1-4]

Compliance with the VOC content contained in Condition D.2.3 shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ**,** reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Compliance Monitoring Requirements [326 IAC 2-8-4][326 IAC 2-8-5(a)(1)]

D.2.7 Monitoring

(a) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters associated with the painting and stenciling operation and the tank car liner installation operation. To monitor the performance of the dry filters or other control device, weekly observations shall be made of the overspray from the painting and stenciling operation and the tank car liner installation operation vent V-5 while one or more of the surface coating operations are in operation. If a condition exists which should result in a response step, the Permittee shall take a reasonable response step(s). Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take a response step(s) shall be considered a deviation from this permit.

(b) Monthly inspections shall be performed of the coating emissions from vent V-5 and the presence of overspray on the rooftops and the nearby ground. When there is a noticeable change in overspray emissions, or when evidence of overspray emissions is observed, the Permittee shall take a reasonable response step(s). Section C - Response to Excursions or Exceedances contains the Permittee's obligation with regard to the reasonable response steps required by this condition. Failure to take a response step(s) shall be considered a deviation from this permit.

Record Keeping and Reporting Requirements [326 IAC 2-8-4(3)]

D.2.8 Record Keeping Requirements

(a) To document the compliance status with Condition D.2.1(a), the Permittee shall maintain records of the total hours of operation for the abrasive blasting unit each month and each twelve (12) consecutive month period.

(b) To document compliance with Condition D.2.3, the Permittee shall maintain records in accordance with (1) through (2) below. Records maintained for (1) through (2) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC emission limits established in Condition D.2.3. Records necessary to demonstrate compliance shall be available within 30 days of the end of each compliance period.

(1) The VOC content of each coating material and solvent used.

(2) The amount of coating material and solvent less water used on a monthly basis.

(A) Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used.

(B) Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents.

(c) To document the compliance status with Condition D.2.7, the Permittee shall maintain a log of weekly overspray observations, daily and monthly inspections.

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

D.2.9 Reporting Requirements

A quarterly summary of the information to document the compliance status with Condition D.2.1(a) shall be submitted using the reporting forms located at the end of this permit, or their equivalent, no later than thirty (30) days after the end of the quarter being reported. Section C - General Reporting contains the Permittee's obligation with regard to the reporting required by this condition. The report submitted by the Permittee does require a certification that meets the requirements of 326 IAC 2-8-5(a)(1) by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) CERTIFICATION

Source Name: BW Washington Car Shop
Source Address: 1723 W. Walnut Street, Washington, Indiana 47501
FESOP Permit No.: F027-29701-00006

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

Please check what document is being certified:

☐ Annual Compliance Certification Letter

☐ Test Result (specify)_____

☐ Report (specify)_____

☐ Notification (specify)_____

☐ Affidavit (specify)_____

☐ Other (specify)_____

I certify that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. Signature:
Printed Name:
Title/Position:
Date:

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

FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP) EMERGENCY OCCURRENCE REPORT

Source Name: BW Washington Car Shop
Source Address: 1723 W. Walnut Street, Washington, Indiana 47501
FESOP Permit No.: F027-29701-00006

This form consists of 2 pages **Page 1 of 2**

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

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

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

If any of the following are not applicable, mark N/A **Page 2 of 2**

Date/Time Emergency started:
Date/Time Emergency was corrected:
Was the facility being properly operated at the time of the emergency? Y N 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:_____

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

FESOP Quarterly Report

Source Name: BW Washington Car Shop
Source Address: 1723 W. Walnut Street, Washington, Indiana 47501
FESOP Permit No.: F027-29701-00006
Facility: Rail Tank Car Cleaning Operation (Wash Stations WS-1 through WS-10)
Parameter: VOC Emissions
Limit: VOC emissions from the rail tank car cleaning operation shall not exceed 50.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

VOC emissions shall be determined using the equations contained in Condition D.1.9.

QUARTER:_____ YEAR:_____

Month	VOC Emissions (tons)	VOC Emissions (tons)	VOC Emissions (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone:_____

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

FESOP Quarterly Report

Source Name: BW Washington Car Shop
Source Address: 1723 W. Walnut Street, Washington, Indiana 47501
FESOP Permit No.: F027-29701-00006
Facility: Rail Tank Car Cleaning Operation (Wash Stations WS-1 through WS-10)
Parameter: Combined HAP Emissions
Limit: Combined HAP emissions from the rail tank car cleaning operation shall not exceed 3.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Combined HAP emissions shall be determined using the equations contained in Condition D.1.9.

QUARTER:_____ YEAR:_____

Month	Combined HAP Emissions (tons)	Combined HAP Emissions (tons)	Combined HAP Emissions (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone:_____

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

FESOP Quarterly Report

Source Name: BW Washington Car Shop
Source Address: 1723 W. Walnut Street, Washington, Indiana 47501
FESOP Permit No.: F027-29701-00006
Facility: Rail Tank Car Cleaning Operation (Wash Stations WS-1 through WS-10)
Parameter: Worst Single HAP emissions
Limit: Each single HAP emissions from the rail tank car cleaning operation shall not exceed 3.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month.

Worst Single HAP emissions shall be determined using the equations contained in Condition D.1.9.

QUARTER:_____ YEAR:_____

Month	Worst Single HAP Emissions (tons)	Worst Single HAP Emissions (tons)	Worst Single HAP Emissions (tons)
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone:_____

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

FESOP Quarterly Report

Source Name: BW Washington Car Shop
Source Address: 1723 W. Walnut Street, Washington, Indiana 47501
FESOP Permit No.: F027-29701-00006
Facility: Abrasive Blasting Unit
Parameter: Total hours of operation
Limit: The total hours of operation for the abrasive blasting unit shall be less than 1800 hours per twelve (12) consecutive month period, with compliance determined at the end of each month.

QUARTER:_____ YEAR:_____

Month	Abrasive Blasting Unit Total Hours of Operation	Abrasive Blasting Unit Total Hours of Operation	Abrasive Blasting Unit Total Hours of Operation
	This Month	Previous 11 Months	12 Month Total

☐ No deviation occurred in this quarter.
☐ Deviation/s occurred in this quarter.
Deviation has been reported on: _____

Submitted by: _____

Title / Position: _____

Signature: _____

Date: _____

Phone:_____

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT BRANCH
FEDERALLY ENFORCEABLE STATE OPERATING PERMIT (FESOP)
QUARTERLY DEVIATION AND COMPLIANCE MONITORING REPORT

Source Name: BW Washington Car Shop
Source Address: 1723 W. Walnut Street, Washington, Indiana 47501
FESOP Permit No.: F027-29701-00006

Months: _____ to _____ Year: _____

Page 1 of 2

This report shall be submitted quarterly based on a calendar year. Any deviation from the requirements of this permit, the date(s) of each deviation, the probable cause of the deviation, and the response steps taken must be reported. A deviation required to be reported pursuant to an applicable requirement that exists independent of the permit, shall be reported according to the schedule stated in the applicable requirement and does not need to be included in this report. Additional pages may be attached if necessary. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".
☐ NO DEVIATIONS OCCURRED THIS REPORTING PERIOD.
☐ THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD

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

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

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

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

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

Form Completed by:_____

Title / Position: _____

Date:_____

Phone: _____

Indiana Department of Environmental Management
Office of Air Quality

Addendum to the Technical Support Document (TSD) for a Source Specific Operating Agreement (SSOA) Transitioning to a Federally Enforceable State Operating Permit (FESOP) with New Source Review (NSR)

Source Background and Description

Source Name:	**BW Washington Car Shop**
Source Location:	**1723 W. Walnut Street, Washington, IN 47501**
County:	**Daviess County**
SIC Code:	**4789 (Transportation Services, Not Elsewhere Classified)**
Operation Permit No.:	**F027-29701-00006**
Permit Reviewer:	**Nathan C. Bell**

On December 7, 2011, the Office of Air Quality (OAQ) had a notice published in the Washington Times Herald newspaper, Washington, Indiana, stating that BW Washington Car Shop had applied for a FESOP with NSR. The notice also stated that the OAQ proposed to issue a FESOP with NSR for this operation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Comments and Responses

No comments were received during the public notice period.

Additional Changes

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

1. The emission unit descriptions in Sections A.2, D.1, and D.2 have been revised to correct a typographical error in the lettering as follows:

   (a) One (1) rail tank car cleaning operation, approved for construction in 2011, located in Building #3, consisting of ten (10) wash stations, identified as WS-1 through WS-10, for cleaning of the exterior and interior of rail cars, with residual materials removed from rail tank cars as follows:

      (1) When cleaning rail cars containing pressurized organic gases, each wash station has a maximum throughput of 0.17 rail cars per hour. Residual pressurized organic gases are removed by rail car depressurization, followed by rail car purging/degassing with nitrogen gas, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Any residual organic gases in the rail tank car after purging/degassing are exhausted through the general ventilation vent CL-1;

      (2) When cleaning rail cars containing high vapor pressure liquid organic chemicals, each wash station has a maximum throughput of 0.5 rail cars per hour. Residual

high vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1. For rail tank cars with lube oil residuals, after the lube oil is drained and collected, clean fuel oil from storage tank FO-1 is used to rinse the tank car, and the used rinse oil is drained from the tank car and stored in storage tank FO-2 until being sent off-site for disposal, with both storage tanks exhausting through the general ventilation vent CL-2. Following the fuel oil rinse, residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Residual fuel oil in the rail tank car is removed with mild detergent washes, with the rinse water treated as indicated below under item (6). The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(3) When cleaning rail cars containing low vapor pressure liquid organic chemicals, each wash station has a maximum throughput of one (1) rail car per hour. Residual low vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic liquids in the rail tank car removed with mild detergent washes, with any residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, and with volatile organic compound emissions exhausted through the general ventilation vent CL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(4) When cleaning rail cars containing inorganic chemical solutions/slurries, each wash station has a maximum throughput of one (1) rail car per hour. Residual inorganic chemical solutions/slurries are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(5) When cleaning rail cars containing liquid or semi-solid food grade products, each wash station has a maximum throughput of one (1) rail car per hour. Residual food grade products are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(6) wash and rinse waters (approximately 500 gallons per car) generated at the wash stations are drained from the rail tank cars to a wash pad and collected in a sump system, identified as S-1, where the wash and rinse waters may be treated to adjust pH and/or to remove oil and grease using a dissolved air flotation unit prior to being stored in two (2) rinse tanks, identified as R-1 and R-2, exhausting through the general ventilation vent CL-2. The wash and rinse waters and any oil and grease sludge collected are then sent off-site for disposal; and

(7) One (1) natural gas-assisted enclosed flare, identified as FL-1, equipped with a natural gas-fired pilot that operates at a maximum heat input capacity of 0.476 MMBtu/hr, and controlling VOC emissions at a maximum heat input capacity of

84 MMBtu/hr, exhausting through stack FL-1.

Note: Each of the ten (10) wash stations can clean rail tank cars containing any of the above listed chemicals or products and their combinations.

(b) Two (2) vertical fixed roof fuel oil storage tanks, identified as FO-1 and FO-2, approved for construction in 2011, located in Building #3, each with a maximum storage capacity of 3,422 gallons, with both storage tanks exhausting through the general ventilation vent CL-2.

(**c**~~d~~) Two (2) vertical fixed roof rinse tanks, identified as R-1 and R-2, approved for construction in 2011, located in Building #3, each with a maximum storage capacity of 7,050 gallons, with both rinse tanks exhausting through the general ventilation vent CL-2.

(**d**~~e~~) One (1) hopper rail car dig out station, identified as WS-11, constructed in 2007, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

(**e**~~f~~) One (1) hopper rail car dig out station, identified as WS-12, approved for construction in 2011, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5,000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

(**f**~~g~~) One (1) rail car refurbishing operation, constructed in 2007, consisting of the following:

(1) one (1) welding operation, constructed in 2007, located in Repair Buildings #1 and #2, for repair of rail cars, consisting of eighteen (18) metal inert gas (MIG) welding stations, each with a maximum electrode usage rate of 0.29 pounds of electrode stick per hour (Electrode Type E70S), and exhausting through vents V-1 and V-2, respectively;

(2) one (1) flame cutting operation, constructed in 2007, located in Repair Buildings #1 and #2, consisting of eighteen (18) oxyacetylene/electric arc flame cutting stations, each with a maximum metal thickness cut of 1.0 inches and a maximum metal cutting rate of 6.3 inches per minute, and exhausting through vents V-1 and V-2, respectively;

(3) one (1) abrasive blasting unit, constructed in 2007, located in Building #4, using a coal slag blasting media at a maximum usage rate of 4000 pounds of abrasive per hour, with particulate emissions controlled by one (1) dust collector with a maximum outlet grain loading of less than or equal to 0.01 grain per actual cubic foot when operated at a maximum gas flow rate of four thousand (15,000) actual cubic feet per minute (acfm), and exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(4) one (1) abrasive storage silo, constructed in 2007, with a maximum storage capacity of 50 tons, with abrasive pneumatically conveyed to the silo at a maximum loading rate of 25 tons per hour, with particulate emissions controlled by one (1) dust collector associated with the abrasive blasting unit, exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(5) one (1) painting and stenciling operation, constructed in 2007, located in Building #5, with a maximum process rate of 0.144 rail cars per hour, utilizing two (2) air atomized spray guns, for application of surface coatings to rail cars at a maximum rate of 10.5 gallons of based coat per rail car and 14 gallons of top coat per rail car, with cleanup operations utilizing a non-halogenated organic solvent, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(**g**~~h~~) One (1) tank car liner installation operation, approved for construction in 2011, located in Building #5, with a maximum throughput of 0.0962 rail cars per hour, using spray gun application at a maximum application rate of 12.3 gallons of liquid liner per rail car, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(**h**~~i~~) One (1) natural gas-fired air heater for curing tank car liners, identified as H-1, approved for construction in 2011, located in Building #5, with a maximum heat input capacity of 4.0 MMBtu/hr, equipped with a low NOx burner, and exhausting through vent H-1.

(**i**~~j~~) One (1) natural gas-fired steam boiler, approved for construction in 2011, rated at 250 boiler horsepower (HP), with a maximum heat input capacity of 8.37 MMBtu/hr, equipped with a low NOx burner, and exhausting through stack B-1.

(**j**~~k~~) Unpaved roads and parking lots with public access.

IDEM Contact

(a) Questions regarding this proposed MSOP can be directed to Nathan Bell at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-5670 or toll free at 1-800-451-6027 extension (35670).

(b) A copy of the permit is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Indiana Department of Environmental Management
Office of Air Quality

Technical Support Document (TSD) for a Source Specific Operating Agreement (SSOA) Transitioning to a Federally Enforceable State Operating Permit (FESOP) with New Source Review (NSR)

Source Description and Location

Source Name:	**BW Washington Car Shop**
Source Location:	**1723 W. Walnut Street, Washington, IN 47501**
County:	**Daviess County**
SIC Code:	**4789 (Transportation Services, Not Elsewhere Classified)**
Operation Permit No.:	**F027-29701-00006**
Permit Reviewer:	**Nathan C. Bell**

On September 21, 2010, the Office of Air Quality (OAQ) received an application from BW Washington Car Shop related to the construction and operation of a new rail tank car cleaning operation at an existing stationary rail car refurbishing operation (sandblasting, repairing, and painting) and transition from a SSOA to a FESOP with NSR.

Existing Approvals

The source has been operating under Source Specific Operating Agreement (SSOA) No. S027-23911-00006, issued on January 11, 2007.

Due to this application, the source is transitioning from a SSOA to a FESOP with NSR.

County Attainment Status

The source is located in Daviess County.

Pollutant	Designation
SO_2	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O3	Unclassifiable or attainment effective June 15, 2004, for the 8-hour ozone standard.[1]
PM_{10}	Unclassifiable effective November 15, 1990.
NO_2	Cannot be classified or better than national standards.
Pb	Not designated.
[1]Unclassifiable or attainment effective October 18, 2000, for the 1-hour ozone standard which was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for $PM_{2.5}$.	

(a) Ozone Standards
Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to ozone. Daviess County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

(b) PM2.5
Daviess County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for $PM_{2.5}$ emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct $PM_{2.5}$ significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct $PM_{2.5}$ and SO_2 emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.

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

Fugitive Emissions

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

Background and Description of Permitted and New Emission Units

The Office of Air Quality (OAQ) has reviewed an application, submitted by BW Washington Car Shop on September 21, 2010, relating to construction and operation of a new rail tank car cleaning operation at an existing rail car refurbishing operation (sandblasting, repairing, and painting) and transition from a SSOA to a FESOP with NSR.

The source consists of the following permitted emission units:

(a) One (1) rail car refurbishing operation, constructed in 2007, consisting of the following:

(1) one (1) welding operation, constructed in 2007, located in Repair Buildings #1 and #2, for repair of rail cars, consisting of eighteen (18) metal inert gas (MIG) welding stations, each with a maximum electrode usage rate of 0.29 pounds of electrode stick per hour (Electrode Type E70S), and exhausting through vents V-1 and V-2, respectively;

(2) one (1) flame cutting operation, constructed in 2007, located in Repair Buildings #1 and #2, consisting of eighteen (18) oxyacetylene/electric arc flame cutting stations, each with a maximum metal thickness cut of 1.0 inches and a maximum metal cutting rate of 6.3 inches per minute, and exhausting through vents V-1 and V-2, respectively;

(3) one (1) abrasive blasting unit, constructed in 2007, located in Building #4, using a coal slag blasting media at a maximum usage rate of 4000 pounds of abrasive per hour, with particulate emissions controlled by one (1) dust collector with a maximum outlet grain loading of less than or equal to 0.01 grain per actual cubic foot when operated at a maximum gas flow rate of four thousand (15,000) actual cubic feet per minute (acfm), and exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(4) one (1) abrasive storage silo, constructed in 2007, with a maximum storage capacity of 50 tons, with abrasive pneumatically conveyed to the silo at a maximum loading rate of

25 tons per hour, with particulate emissions controlled by one (1) dust collector associated with the abrasive blasting unit, exhausting through vent V-4;

Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

(5) one (1) painting and stenciling operation, constructed in 2007, located in Building #5, with a maximum process rate of 0.144 rail cars per hour, utilizing two (2) air atomized spray guns, for application of surface coatings to rail cars at a maximum rate of 10.5 gallons of based coat per rail car and 14 gallons of top coat per rail car, with cleanup operations utilizing a non-halogenated organic solvent, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(b) One (1) hopper rail car dig out station, identified as WS-11, constructed in 2007, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

(c) Unpaved roads and parking lots with public access.

The following is a list of the new emission units and pollution control devices:

(d) One (1) rail tank car cleaning operation, approved for construction in 2011, located in Building #3, consisting of ten (10) wash stations, identified as WS-1 through WS-10, for cleaning of the exterior and interior of rail cars, with residual materials removed from rail tank cars as follows:

(1) When cleaning rail cars containing pressurized organic gases, each wash station has a maximum throughput of 0.17 rail cars per hour. Residual pressurized organic gases are removed by rail car depressurization, followed by rail car purging/degassing with nitrogen gas, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Any residual organic gases in the rail tank car after purging/degassing are exhausted through the general ventilation vent CL-1;

(2) When cleaning rail cars containing high vapor pressure liquid organic chemicals, each wash station has a maximum throughput of 0.5 rail cars per hour. Residual high vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1. For rail tank cars with lube oil residuals, after the lube oil is drained and collected, clean fuel oil from storage tank FO-1 is used to rinse the tank car, and the used rinse oil is drained from the tank car and stored in storage tank FO-2 until being sent off-site for disposal, with both storage tanks exhausting through the general ventilation vent CL-2. Following the fuel oil rinse, residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Residual fuel oil in the rail tank car is removed with mild detergent washes, with the rinse water treated as indicated below under item (6). The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(3) When cleaning rail cars containing low vapor pressure liquid organic chemicals, each wash station has a maximum throughput of one (1) rail car per hour. Residual low vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a

drum and sent off-site for re-use or disposal, with residual organic liquids in the rail tank car removed with mild detergent washes, with any residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, and with volatile organic compound emissions exhausted through the general ventilation vent CL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(4) When cleaning rail cars containing inorganic chemical solutions/slurries, each wash station has a maximum throughput of one (1) rail car per hour. Residual inorganic chemical solutions/slurries are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(5) When cleaning rail cars containing liquid or semi-solid food grade products, each wash station has a maximum throughput of one (1) rail car per hour. Residual food grade products are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(6) wash and rinse waters (approximately 500 gallons per car) generated at the wash stations are drained from the rail tank cars to a wash pad and collected in a sump system, identified as S-1, where the wash and rinse waters may be treated to adjust pH and/or to remove oil and grease using a dissolved air flotation unit prior to being stored in two (2) rinse tanks, identified as R-1 and R-2, exhausting through the general ventilation vent CL-2. The wash and rinse waters and any oil and grease sludge collected are then sent off-site for disposal; and

(7) One (1) natural gas-assisted enclosed flare, identified as FL-1, equipped with a natural gas-fired pilot that operates at a maximum heat input capacity of 0.476 MMBtu/hr, and controlling VOC emissions at a maximum heat input capacity of 84 MMBtu/hr, exhausting through stack FL-1.

Note: Each of the ten (10) wash stations can clean rail tank cars containing any of the above listed chemicals or products and their combinations.

(e) One (1) hopper rail car dig out station, identified as WS-12, approved for construction in 2011, located in Building #3, used to remove residual solid materials from rail cars, with a maximum process rate of 5,000 pounds of material removed per hour, with solid materials collected and sent off-site for re-use or disposal, exhausting through the general ventilation vent CL-1.

(f) One (1) tank car liner installation operation, approved for construction in 2011, located in Building #5, with a maximum throughput of 0.0962 rail cars per hour, using spray gun application at a maximum application rate of 12.3 gallons of liquid liner per rail car, with particulate emissions controlled by dry filters, and exhausting through the general ventilation vent V-5.

(g) One (1) natural gas-fired air heater for curing tank car liners, identified as H-1, approved for construction in 2011, located in Building #5, with a maximum heat input capacity of 4.0 MMBtu/hr, equipped with a low NOx burner, and exhausting through vent H-1.

(h) One (1) natural gas-fired steam boiler, approved for construction in 2011, rated at 250 boiler horsepower (HP), with a maximum heat input capacity of 8.37 MMBtu/hr, equipped with a low NOx burner, and exhausting through stack B-1.

(i) Two (2) vertical fixed roof fuel oil storage tanks, identified as FO-1 and FO-2, approved for construction in 2011, located in Building #3, each with a maximum storage capacity of 3,422 gallons, with both storage tanks exhausting through the general ventilation vent CL-2.

(j) Two (2) vertical fixed roof rinse tanks, identified as R-1 and R-2, approved for construction in 2011, located in Building #3, each with a maximum storage capacity of 7,050 gallons, with both rinse tanks exhausting through the general ventilation vent CL-2.

Enforcement Issues

There are no pending enforcement actions related to this source.

Emission Calculations

(a) See Appendix A of this TSD for detailed emission calculations. Since each of the ten (10) wash stations can clean rail tank cars containing any of listed chemicals or products and their combinations (see descriptions of the units), PTE was determined based on the worst case gas being cleaned.

(b) See Appendix B of this TSD for tables summarizing the residual materials that BW Washington Car Shop anticipates will be received by this source in rail tank cars and hopper rail cars.

Permit Level Determination – FESOP

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

Pollutant	Potential To Emit (tons/year)
PM	254.8
PM10(1)	195.5
PM2.5	195.5
SO_2	0.03
NO_x	2.66
VOC	12603.4
CO	4.46
GHGs as CO_2e	12774.6
Total HAPs	3864.2
Worst Single HAP	3843.5 (triethylamine)

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

(a) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of PM10, PM2.5, and VOC is greater than one hundred (100) tons per year, each. The PTE of all other regulated criteria pollutants are less than one hundred (100) tons per year, each. The source would have been subject to the provisions of 326 IAC 2-7. However, the source will be issued a Federally Enforceable State Operating Permit (FESOP) (326 IAC 2-8) with New Source Review (NSR), because the source will limit emissions to less than the Title V major source threshold levels.

(b) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) of any single HAP is greater than ten (10) tons per year and the PTE of a combination of HAPs is greater than twenty-five (25) tons per year. Therefore, the source would have been subject to the provisions of 326 IAC 2-7.

However, the source will be issued Federally Enforceable State Operating Permit (FESOP) (326 IAC 2-8) with New Source Review (NSR), because the source will limit emissions of HAPs to less than the Title V major source threshold levels.

(c) The potential to emit (PTE) (as defined in 326 IAC 2-7-1(29)) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO_2 equivalent emissions (CO_2e) per year.

PTE of the Entire Source After Issuance of the FESOP

The table below summarizes the potential to emit of the entire source after issuance of this FESOP, reflecting all limits, of the emission units. Any control equipment is considered federally enforceable only after issuance of this FESOP, and only to the extent that the effect of the control equipment is made practically enforceable in the permit.

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of FESOP (tons/year)									
	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP
Non-Fugitive Emissions* **										
Welding & Flame Cutting	4.95	4.95	4.95	0.0	0.0	0.0	0.0	0.0	0.03	0.02 (manganese)
Abrasive Blasting Unit	36.00	25.20	25.20	0.0	0.0	0.0	0.0	0.0	0.0	---
Abrasive Storage Silo	2.63	0.63	0.63	0.0	0.0	0.0	0.0	0.0	0.0	---
Painting and Stenciling Operation	56.63	56.63	56.63	0.0	0.0	27.61	0.0	0.0	12.11	6.84 (xylenes)
Dig Out Stations	6.57	1.58	1.58	0.0	0.0	0.0	0.0	0.0	0.0	---
Rail Tank Car Draining Operation	0.0	0.0	0.0	0.0	0.0	5.04	0.00	0.0	5.04	5.04 (methanol)
Rail Tank Car Cleaning Operation	0.0	0.0	0.0	0.0	0.0	50.0	0.00	0.0	3.0	3.0 (each single HAP)
Flare (FL-1) (waste gas combustion)	0.17	0.17	0.17	0.007	3.09	0.0	16.83	6302.8	0.0	---
Flare (FL-1) (natural gas combustion)	0.004	0.02	0.02	0.001	0.20	0.01	0.17	246.8	0.004	0.004 (hexane)
Tank Car Liner Installation	8.69	8.69	8.69	0.0	0.0	15.20	0.0	0.0	3.42	2.90 (phenol)
Natural Gas Combustion	0.10	0.40	0.40	0.03	2.66	0.29	4.46	12774.6	0.10	0.10 (hexane)
Fuel Oil Storage Tanks	0.0	0.0	0.0	0.0	0.0	0.01	0.00	0.0	negl.	negl.
Total PTE (non-fugitive)* **	**115.74**	**98.26**	**98.26**	**0.04**	**5.95**	**98.16**	**21.47**	**19324.1**	**23.70**	**9.84**
Title V Major Source Thresholds	NA	100	100	100	100	100	100	100,000	25	10
PSD Major Source Thresholds	250	250	250	250	250	250	250	100,000	NA	NA
Fugitive Emissions* **										
Unpaved Roads	1.20	0.30	0.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total PTE (fugitive)* **	**1.20**	**0.30**	**0.30**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**

Process/ Emission Unit	Potential To Emit of the Entire Source After Issuance of FESOP (tons/year)									
	PM	PM10*	PM2.5	SO_2	NOx	VOC	CO	GHGs as CO_2e**	Total HAPs	Worst Single HAP

negl. = negligible
*Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".
**The 100,000 CO_2e threshold represents the Title V and PSD subject to regulation thresholds for GHGs in order to determine whether a source's emissions are a regulated NSR pollutant under Title V and PSD.
***Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, 326 IAC 2-3, or 326 IAC 2-7, and there is no applicable New Source Performance Standard that was in effect on August 7, 1980, fugitive emissions are not counted toward the determination of PSD and Part 70 Permit applicability.

FESOP Status and PSD Minor Source Status

This existing source is not a Title V major stationary source because the potential to emit criteria pollutants from the entire source is limited to less than the Title V major source threshold levels. In addition, this existing source is not a major source of HAPs, as defined in 40 CFR 63.41, because the potential to emit HAPs is limited to less than ten (10) tons per year for a single HAP and twenty-five (25) tons per year of total HAPs. Therefore, this source is an area source under Section 112 of the Clean Air Act and is subject to the provisions of 326 IAC 2-8 (FESOP).

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

Rail Tank Car Cleaning Operation

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and render the requirements of 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs) not applicable, the Permittee shall comply with the following:

(a) VOC emissions from the rail tank car cleaning operation shall not exceed 50.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month;

(b) Combined HAP emissions from the rail tank car cleaning operation shall not exceed 3.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month;

(c) Each single HAP emissions from the rail tank car cleaning operation shall not exceed 3.0 tons per twelve (12) consecutive month period with compliance determined at the end of each month;

Note: Since VOC and HAP emissions are dependent on the type and physical properties of the residual organic chemical being removed from the rail tank cars, and in order to provide flexibility for certain phases of the cleaning process that are controlled by the flare, compliance with these VOC and HAP limits will be determined using equations. See Compliance Determination, Monitoring and Testing Requirement Section of this TSD for details.

Compliance with these limits, combined with the potential to emit VOC and HAPs from all other emission units at this source, shall limit the source-wide total potential to emit of VOC to less than 100 tons per 12 consecutive month period, any single HAP to less than ten (10) tons per 12 consecutive month period, and total HAPs to less than twenty-five (25) tons per 12 consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits), 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)), and 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs) not applicable.

Abrasive Blasting Unit

In order to comply with the requirements of 326 IAC 2-8-4 (FESOP) and render the requirements of 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable, the Permittee shall comply with the following:

(a) The total hours of operation for the abrasive blasting unit shall be less than 1800 hours per twelve (12) consecutive month period, with compliance determined at the end of each month.

(b) PM emissions before control from the abrasive blasting unit shall not exceed 40.0 pounds per hour.

(c) PM10 emissions before control from the abrasive blasting unit shall not exceed 28.0 pounds per hour.

(d) PM2.5 emissions before control from the abrasive blasting unit shall not exceed 28.0 pounds per hour.

Note: The above limitations are based the uncontrolled potential to emit of the abrasive blasting unit. The use of one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

Compliance with these limits, combined with the potential to emit PM, PM10, and PM2.5 from all other emission units at this source, shall limit the source-wide total potential to emit of PM to less than 250 tons per 12 consecutive month period, PM10 to less than 100 tons per 12 consecutive month period, and PM2.5 to less than 100 tons per 12 consecutive month period and shall render 326 IAC 2-7 (Part 70 Permits) and 326 IAC 2-2 (Prevention of Significant Deterioration (PSD)) not applicable.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

(a) The requirements of the New Source Performance Standard (NSPS) for Fossil-Fuel-Fired Steam Generators for Which Construction Is Commenced After August 17, 1971, 40 CFR 60, Subpart D (326 IAC 12), are not included in the permit for the natural gas-fired steam boiler, because this boiler has a heat input rate less than 250 million Btu per hour (MMBtu/hr).

(b) The requirements of the New Source Performance Standard (NSPS) for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978, 40 CFR 60, Subpart Da (326 IAC 12), are not included in the permit for the natural gas-fired steam boiler, because this boiler has a heat input rate less than 250 million Btu per hour (MMBtu/hr) and this source does not produce steam for the purpose of generating and supplying electrical power to any utility power distribution system for sale.

(c) The requirements of the New Source Performance Standard (NSPS) for Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Db (326 IAC 12), are not included in the permit for the natural gas-fired steam boiler, because this boiler has a heat input rate less than 100 million Btu per hour (MMBtu/hr).

(d) The requirements of the New Source Performance Standard (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (326 IAC 12), are not included in the permit for the natural gas-fired steam boiler, because this boiler has a heat input rate less than or equal to 10 million Btu per hour (MMBtu/hr).

(e) The requirements of the New Source Performance Standards (NSPS) for Incinerators, 40 CFR 60, Subpart E (60.50 through 60.54) (326 IAC 12), are not included in the pemit, because flare (FL-1) will not be combusting refuse consisting of more than 50 percent municipal type waste (household, commercial/ retail, and/or institutional waste).

(f) The requirements of the following New Source Performance Standards (NSPS) are not included in the pemit, because flare (FL-1) is not considered a municipal waste combustor or hospital/medical/infectious waste incinerator:

(1) 40 CFR 60, Subpart Ea (60.50a through 60.59a), Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced after December 20, 1989 and on or before September 20, 1994 (326 IAC 12)

(2) 40 CFR 60, Subpart Eb (60.50b through 60.59b), Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced after September 20, 1994, or for Which Modification or Reconstruction is commenced after June 19, 1996 (326 IAC 12)

(3) 40 CFR 60, Subpart Ec (60.50c through 60.58c), Standards of Performance for Hospital/Medical/Infectious Waste Incinerators for Which Construction is Commenced after January 20, 1996 (326 IAC 12)

(4) 40 CFR 60, Subpart AAAA (60.1000 through 60.1465), Standards of Performance for Small Municipal Waste Combustion Units for Which Construction is Commenced After August 30, 1999 or for Which Modification or Reconstruction is Commenced After June 6, 2001 (326 IAC 12)

(g) The requirements of the New Source Performance Standards (NSPS) for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984, 40 CFR 60, Subpart Kb (60.110b through 60.117b) (326 IAC 12), are not included in the permit for the two (2) fuel oil storage tanks (FO-1 and FO-2) and the two (2) rinse tanks (R-1 and R-2), since each of the tanks has a capacity less than seventy-five (75) cubic meters (m3) (19,813 gallons).

(h) The requirements of New Source Performance Standard (NSPS) for Commercial and Industrial Solid Waste Incinerations Units for Which Construction is Commenced After November 30, 1999 or for Which Modification or Reconstruction is Commenced on or After June 1, 2001, 40 CFR 60, Subpart CCCC (60.2000 through 60.2265) (326 IAC 12), are not included in this permit for the following reasons:

(1) The rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations will not burn solid waste as defined in 40 CFR 60.2265. Under 40 CFR 60.2265, the definition of solid waste includes discarded material, including contained gaseous material, resulting from industrial, commercial, mining, agricultural operations, and from community activities. Residual liquid organic chemicals, residual inorganic chemical

solutions/slurries, and residual solid materials within the rail tank cars will drained/removed and collected in drums that will be sent off-site for re-use or disposal, with flare (FL-1) used as a pollution control device to combust residual organic vapors in the rail tank cars. For the residual pressurized gases, the rail tank car cleaning operation will not combust "contained gaseous materials" as defined by 40 CFR 60.2265, because the organic gases combusted are not in a container that is also combusted.

(2) Flare (FL-1) is not condisidered a commercial and industrial solid waste incineration (CISWI) unit as defined by 40 CFR 60.2265, since a commercial and industrial solid waste incineration (CISWI) unit does not include air pollution control equipment.

(i) The requirements of the New Source Performance Standards for Other Solid Waste Incineration Units for Which Construction is Commenced After December 9, 2004 or for Which Modification or Reconstruction is commenced on or After June 16, 2006, 40 CFR 60, Subpart EEEE (60.2280 through 60, 2891), are not included in this permit for the following reasons:

(1) The rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations will not burn municipal solid waste or institutional waste as defined in 40 CFR 60.2977.

(2) The rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations will not burn solid waste as defined in 40 CFR 60.2977. Under 40 CFR 60.2977, the definition of solid waste includes discarded material, including contained gaseous material, resulting from industrial, commercial, mining, agricultural operations, and from community activities. Residual liquid organic chemicals, residual inorganic chemical solutions/slurries, and residual solid materials within the rail tank cars will drained/removed and collected in drums that will be sent off-site for re-use or disposal, with flare (FL-1) used as a pollution control device to combust residual organic vapors in the rail tank cars. For the residual organic gases, the rail tank car cleaning operation will not combust "contained gaseous materials" as defined by 40 CFR 60.2977, because the organic gases combusted are not in a container that is also combusted.

(3) Flare (FL-1) is not considered an other solid waste incineration (OSWI) unit as defined in 40 CFR 60.2977, since an other solid waste incineration (OSWI) unit does not include air pollution control equipment.

(j) The requirements of the New Source Performance Standard (NSPS) for Automobile and Light Duty Truck Surface Coating Operations, 40 CFR 60, Subpart MM (326 IAC 12), are not included in the permit for the painting and stenciling operation, because this source does not contain any surface coating of automobiles or light duty trucks operations. This source applies surface coatings to rail tank cars.

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

<u>National Emission Standards for Hazardous Air Pollutants (NESHAP)</u>

(l) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) from Off-Site Waste and Recovery Operations, 40 CFR Part 63, Subpart DD (326 IAC 20-23), are not included in the permit, because this source is not a major source of HAPs.

(m) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Hazardous Waste Combustors, 40 CFR 63, Subpart EEE (63.1200 through 63.1214) (326 IAC 20-28), are not included in the permit for the rail tank car cleaning operation, Flare (FL-1), and each of the hopper rail car dig out stations for the following reasons:

(1) each of the pressurized gases combusted in Flare (FL-1) is not considered a "hazardous waste" as defined in 40 CFR 63.1201 and 40 CFR 261.3. The pressurized gases combusted in Flare (FL-1) will be unused commercial chemical products and will consist of propane, butane, and liquefied petroleum gas (LPG), which (as received in the rail tank cars) will not meet any of the hazardous waste criteria under 261.3(a)(2). Each of these pressurized gases (as received in the rail tank cars) do not exhibit the characteristic of ignitability as defined by 40 CFR 261.21 and are each not considered "ignitable compressed gas" as defined by 40 CFR 261.21(a)(3), because the rail tank cars (as received) will not contain these pressurized gases at an absolute pressure exceeding 40 psia at 70°F and these pressurized gases (as received in the rail tank cars) would not have an absolute pressure exceeding 104 psia at 130°F.

(2) each of the residual liquid chemicals processed in the rail tank car cleaning operation will not be combusted, but will be drained/removed and collected in drums that will be sent off-site for re-use or disposal. Flare (FL-1) will only be used as a pollution control device to combust residual vapors in the empty rail tank cars. The residual liquid chemicals (as received in the rail tank cars) and any residual vapors combusted in Flare (FL-1) are each not considered a "hazardous waste" as defined in 40 CFR 63.1201 and 40 CFR 261.3, because of one or more of the following reasons:

(A) the residual liquid chemical is considered an unused commercial chemical product that will not meet any of the hazardous waste criteria under 261.3(a)(2). Since these residual liquid chemicals are not a "hazardous waste", the residual vapors combusted in Flare (FL-1) are not considered "hazardous waste".

(B) the residual liquid chemical will be drained/removed, collected in drums, and sent off-site for re-use and would not be considered a "solid waste" as defined by 40 CFR 261.2, and therefore not a "hazardous waste" as defined by 40 CFR 261.3, because it would be recycled pursuant to 40 CFR 261.2(e)(1). Since these residual liquid chemicals are not a "hazardous waste", the residual vapors combusted in Flare (FL-1) are not considered "hazardous waste".

(C) each of the rail tank cars processed in the rail tank car cleaning operation that contain residual liquid chemicals will meet the definition of an empty container under 40 CFR 261.7(b)(1) and will not be subject to regulation under 40 CFR Parts 261 through 268, 270, or 124 or to the notification requirements of section 3010 of RCRA. Pursuant to 40 CFR 261.7(b)(1), each of the rail tank cars (approximately 30,000 gallons in size and weighing approximatetly 65,700 pounds empty) will contain a maximum of 20 gallons (167 pounds, assuming density of 8.34 pounds/gallon) of residual liquid chemicals and will meet the definition of empty, since all wastes will have been previously removed from the rail tank cars that can be removed using the practices commonly employed to remove materials from rail tank cars (e.g., draining, pumping, and/or top unloading using tank pressurization and removal by a dip leg, dip tube, or siphon tube) and each rail tank car will contain no more than 0.3 percent by weight of the total capacity of the container (i.e., approximately 0.25 percent). However, if any of the residual liquid chemicals that are drained/removed and collected in drums for off-site disposal meet any of the hazardous waste criteria under 261.3(a)(2), then those chemicals are considered "hazardous waste" once they are collected in drums for off-site disposal (i.e., the intent to discard the collected chemicals is demonstrated and a "hazardous waste" is thereby generated).

(3) each of the residual inorganic chemical solutions/slurries processed in the rail tank car cleaning operation will not be combusted, but will be drained/removed and collected in drums that will be sent off-site for re-use or disposal.

(4) each of the liquid or semi-solid food grade products processed in this operation are not considered "hazardous wastes" as defined in 40 CFR 63.1201 and 40 CFR 261.3 and they are not combusted in the rail tank car cleaning operation (i.e., they will be drained/removed and collected in drums that will be sent off-site for re-use or disposal);

(5) each of the residual solid materials processed in the rail tank car cleaning operation will not be combusted, but will be drained/removed and collected in drums that will be sent off-site for re-use or disposal.

The Permitted has agreed to include the following condition in the permit:

The Permittee shall not combust hazardous waste, as defined under 40 CFR 261.3, in the rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations. Compliance with this condition ensures that the rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations each do not meet the definition of a hazardous waste combustor under 40 CFR 63, Subpart EEE. Therefore, 40 CFR 63, Subpart EEE does not apply to the the rail tank car cleaning operation, flare (FL-1), and each of the hopper rail car dig out stations.

(n) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs): Surface Coating of Automobiles and Light-Duty Trucks, 40 CFR Part 63, Subpart IIII (326 IAC 20-85), are not included in the permit for the painting and stenciling operation, because this source is not a major source of HAPs and does not surface coat automobiles or light duty trucks. This source applies surface coatings to rail tank cars.

(o) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Miscellaneous Metal Parts and Products, 40 CFR Part 63, Subpart MMMM (326 IAC 20-80), are not included in the permit for the painting and stenciling operation, because this source is not a major source of HAPs. [Note: As discussed in the preamble (page 143) to the final rule for 40 CFR Part 63, National Emission Standards for Hazardous Air Pollutants: Surface Coating of Miscellaneous Metal Parts and Products (see Federal Register, Vol. 69, No. 1, Page 143, January 2, 2004), "The routine maintenance of metal parts (such as rail car maintenance and drum refurbishment) is not exempt from the final rule when it is performed at sources for which their principal activity is the routine maintenance, including surface coating, of metal parts that are not new parts."]

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

(q) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs): Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources, 40 CFR Part 63, Subpart HHHHHH, are not included in the permit for this source, because this source does not include facilities that conduct paint stripping operations that involve the use of chemical strippers that contain methylene chloride; autobody refinishing operations that encompass motor vehicle and mobile equipment spray-applied surface coating operations; or spray application of coatings containing compounds of chromium, lead, manganese, nickel, or cadmium.

(r) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJJ, are not included in the natural gas-fired steam boiler, because it is a gas-fired boiler, as defined by 40 CFR 63.11237, which is specifically exempted from this rule under 40 CFR 63.11195(e).

(s) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

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

State Rule Applicability Determination

The following state rules are applicable to the source:

326 IAC 2-8-4 (FESOP)
FESOP applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))
PSD applicability is discussed under the PTE of the Entire Source After Issuance of the FESOP section above.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAPs))
The unlimited potential to emit of HAPs from this source is greater than ten (10) tons per year for any single HAP and is greater than twenty-five (25) tons per year of a combination of HAPs. However, the source shall limit the potential to emit of HAPs from this source to less than ten (10) tons per year for any single HAP and less than twenty-five (25) tons per year of a combination of HAPs. Therefore, the source is not subject to the requirements of 326 IAC 2-4.1. See PTE of the Entire Source After Issuance of the FESOP Section above.

326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.

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

(a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

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

326 IAC 6-4 (Fugitive Dust Emissions Limitations)

The source is subject to the requirements of 326 IAC 6-4 because the unpaved roads have the potential to emit fugitive particulate emissions. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4.

326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)

The source is not subject to the requirements of 326 IAC 6-5, because the unpaved roads at this source have potential fugitive particulate emissions less than 25 tons per year.

326 IAC 12 (New Source Performance Standards)

See Federal Rule Applicability Section of this TSD.

326 IAC 20 (Hazardous Air Pollutants)

See Federal Rule Applicability Section of this TSD.

<u>Rail Car Refurbishing Operation</u>

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

(a) Pursuant to 326 IAC 6-3-1(b)(9), each of the welding operations is exempt from the requirements of 326 IAC 6-3, because the potential to consume welding wire is less than six hundred twenty-five (625) pounds per day.

(b) Pursuant to 326 IAC 6-3-1(b)(9), the torch cutting operation is exempt from the requirements of 326 IAC 6-3, because the maximum capacity of the torch cutting operation is less than three thousand four hundred (3,400) inches per hour of stock one (1) inch thickness or less is cut.

(c) Pursuant to 326 IAC 6-3-1(b)(14), the requirements of 326 IAC 6-3-2 are applicable to the one (1) abrasive blasting unit, since it has potential particulate emissions greater than five hundred fifty-one thousandths (0.551) pound per hour. Pursuant to 326 IAC 6-3-2(e), particulate emissions from the one (1) abrasive blasting unit shall not exceed 41.28 pounds per hour when operating at a process weight rate of 69,700 pounds per hour (65,700 pound rail car plus 4,000 pounds of abrasive per hour). The pound per hour limitation was calculated with the following equation:

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

$E = 55.0\ P^{0.11} - 40$ where: E = rate of emission in pounds per hour; and
P = process weight rate in tons per hour

Since, the abrasive blasting unit has uncontrolled potential particulate emissions of 40.0 pounds per hour, which is less than the 326 IAC 6-3-2 allowable particulate emission rate of 41.28 pounds per hour, the dust collector is not needed to comply with this limit.

(d) Pursuant to 326 IAC 6-3-1(b)(14), the requirements of 326 IAC 6-3-2 are applicable to the one (1) abrasive storage silo, since it has potential particulate emissions greater than five hundred fifty-one thousandths (0.551) pound per hour. Pursuant to 326 IAC 6-3-2(e), particulate emissions from the one (1) abrasive storage silo shall not exceed 35.43 pounds per hour when operating at a process weight rate of 25 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

Since, the abrasive storage silo has uncontrolled potential particulate emissions of 7.50 pounds per hour, which is less than the 326 IAC 6-3-2 allowable particulate emission rate of 35.43 pounds per hour, the dust collector is not needed to comply with this limit.

(e) Pursuant to 326 IAC 6-3-1(b)(15), the one (1) painting and stenciling operation is subject to the requirements of 326 IAC 6-3, since it has the potential to use greater than five (5) gallons per day of surface coatings. Pursuant to 326 IAC 6-3-2(d), particulate from the one (1) painting and stenciling operation shall be controlled by dry particulate filters and the Permittee shall operate the control device in accordance with the manufacturer's specifications.

326 IAC 8-2-9 (Miscellaneous Metal Coating Operations)

Pursuant to 326 IAC 8-2-1(a)(4), this rule applies to facilities located in any county, constructed after July 1, 1990, which have actual emissions of greater than fifteen (15) pounds of VOC per day before add-on controls, and that perform surface coating of metal and plastic parts as specified in 326 IAC 8-2-9(a) and (b). The one (1) painting and stenciling operation is subject to the requirements of 326 IAC 8-2-9, since it has actual emissions of greater than fifteen (15) pounds of VOC per day before add-on controls and consists of the surface coating of railroad cars, which is specifically listed under 326 IAC 8-2-9(a)(2)(Q).

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the Permitee shall comply with the following requirements for the one (1) painting and stenciling operation:

(a) The Permittee shall not cause, allow, or permit the discharge into the atmosphere of any VOC in excess of the following:

(1) Four and three-tenths (4.3) pounds per gallon of coating, excluding water, delivered to a coating applicator that applies clear coatings.

(2) Three and five-tenths (3.5) pounds per gallon of coating, excluding water, delivered to a coating applicator in a coating application system that is air dried or forced warm air dried at temperatures up to one hundred ninety-four (194) degrees Fahrenheit.

(3) Three and five-tenths (3.5) pounds per gallon of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings.

(4) Three (3) pounds per gallon of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems.

If more than one (1) of these emission limitations applies to a specific coating, then the least stringent emission limitation shall apply.

(b) Work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include, but not be limited to, the following:

(1) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.

(2) Ensure that mixing and storage containers used for VOC containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.

(4) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.

(5) Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

The painting and stenciling operation is able to comply with the VOC content limitations in item (a) above, since it has a VOC content of less than 3.0 pounds per gallon of coating, excluding water. The painting and stenciling operation uses a base coat with a VOC content (as applied) of 2.47 pounds per gallon of coating, excluding water, and a top coat with a VOC content (as applied) of 0.71 pounds per gallon of coating, excluding water,

Hopper Rail Car Dig Out Stations

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(14), the requirements of 326 IAC 6-3-2 are applicable to each of the two (2) hopper rail car dig out stations, since they each have potential particulate emissions greater than five hundred fifty-one thousandths (0.551) pound per hour. Pursuant to 326 IAC 6-3-2(e), particulate emissions from each of the two (2) hopper rail car dig out stations shall not exceed 7.58 pounds per hour when operating at a process weight rate of 2.5 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

Since the uncontrolled potential particulate emissions are less than the 326 IAC 6-3-2 allowable particulate emission rate, no particulate controls are necessary to comply with this limit.

Rail Tank Car Cleaning Operation (Wash Stations WS-1 through WS-10)

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

Each of the wash stations (WS-1 through WS-10) associated with the rail tank car cleaning operation will be constructed after January 1, 1980, has potential VOC emissions of greater than twenty-five (25) tons per year, and is not regulated by other rules in 326 IAC 8. Therefore, each of the wash stations is subject to 326 IAC 8-1-6 and the Permittee is required to control VOC emissions from each wash station using the Best Available Control Technology (BACT). According to the BACT analysis contained in Appendix C, IDEM, OAQ has determined that the following requirements represent BACT for each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation:

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the best available control technology (BACT) for VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation shall be as follows:

(a) When cleaning rail tank cars containing pressurized organic gases:

(1) During Depressurization
Each rail tank car shall be depressurized, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%;

(2) During Purging/Degassing
Each rail tank car shall be purged/degassed equal to or greater than a total of four (4) tank volumes, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%; and

(3) During Venting, Washing, Rinsing, and Drying
Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (a)(1) and (a)(2) above.

(b) When cleaning rail tank cars containing high vapor pressure liquid organic chemicals:

(1) For Residual Liquids in Rail Tank Cars:
The Permittee shall comply with the following work practices:

(A) Residual high vapor pressure liquid organic chemicals shall be drained and collected in a container and sent off-site for re-use or disposal; and

(B) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(2) During Purging/Degassing
Each rail tank car shall be purged/degassed equal to or greater than a total of four (4) tank volumes, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%; and

(3) During Venting, Washing, Rinsing, and Drying
The Permittee shall comply with the following work practices:

(A) Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (b)(1) and (b)(2) above;

(B) The Permittee shall collect, process, store, and dispose of wash waters and rinse waters generated at the wash stations and any organic liquids collected by the dissolved air flotation unit in a manner that minimizes VOC emissions; and

(C) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(c) When cleaning rail tank cars containing low vapor pressure liquid organic chemicals:

(1) For Residual Liquids in Rail Tank Cars:
The Permittee shall comply with the following work practices:

(A) Residual low vapor pressure liquid organic chemicals shall be drained and collected in a container and sent off-site for re-use or disposal; and

(B) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(2) During Venting, Washing, Rinsing, and Drying
The Permittee shall comply with the following work practices:

(A) Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (c)(1) above;

(B) The Permittee shall collect, process, store, and dispose of wash waters and rinse waters generated at the wash stations and any organic liquids collected by the dissolved air flotation unit in a manner that minimizes VOC emissions; and

(C) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(d) When storing and transferring of liquid organic chemicals and VOC containing wastes, the Permittee shall comply with, but not be limited to, the following work practices:

(1) Store all liquid organic chemicals and VOC containing wastes in closed containers that employ a tightly fitting cover. Collection containers shall be free of all liquid leaks. The Permittee shall replace or repair collection containers for which a liquid leak is detected;

(2) Ensure that storage containers are kept closed at all times except when depositing or removing liquid organic chemicals or VOC containing wastes;

(3) Minimize spills of liquid organic chemicals and VOC containing wastes and clean up any spill immediately; and

(4) When transferring liquid organic chemicals or VOC containing wastes from a storage container to another location, convey the material in closed containers or pipes.

326 IAC 8-6 (VOC Rules: Organic Solvent Emission Limitations)

Pursuant to 326 IAC 8-6-1, this rule applies to sources commencing operation after October 7, 1974 and prior to January 1, 1980, located anywhere in the state, with potential VOC emissions of 100 tons per year or more, and not regulated by any other provision of Article 8. Pursuant to 326

IAC 8-6-1, this source is not subject to the requirements 326 IAC 8-6, because this source, which is located in Daviess County, did not commence operation after October 7, 1974 and prior to January 1, 1980, and is regulated by 326 IAC 8-1-6.

326 IAC 8-7 (VOC Rules; Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)
Pursuant to 326 IAC 8-7-2(a), this source is not subject to the requirements of 326 IAC 8-7, since it is not located in Lake, Porter, Clark, or Floyd County.

326 IAC 8-18 (VOC Rules; Synthetic Organic Chemical Manufacturing Industry Air Oxidation, Distillation, and Reactor Processes)
Pursuant to 326 IAC 8-18-1, this source is not subject to the requirements of 326 IAC 8-18, since it is not located in Lake or Porter County, and does not contain any air oxidation unit processes, distillation operations, and reactor processes as defined by 326 IAC 8-18-1(b).

326 IAC 8-19 (VOC Rules; Control of Volatile Organic Compound Emissions from Process Vents in Batch Operations)
Pursuant to 326 IAC 8-19-1, this source is not subject to the requirements of 326 IAC 8-19, since this source does have a batch process train associated with any of the SIC code listed in 326 IAC 8-19(a), this source is not located in Lake or Porter County, and the potential to emit VOC is limited to less than one hundred (100) tons per year.

326 IAC 8-20 (VOC Rules; Industrial Wastewater)
Pursuant to 326 IAC 8-20-1, this source is not subject to the requirements of 326 IAC 8-20, since it is not located in Lake or Porter County and the potential to emit VOC is limited to less than one hundred (100) tons per year.

<u>Flare (FL-1)</u>

326 IAC 6-2 (Particulate Limitations for Sources of Indirect Heating)
The one (1) natural gas-assisted enclosed flare (FL-1) is not subject to the provisions of 326 IAC 6-2 because this facility is not a source of indirect heating.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(2), the one (1) natural gas-assisted enclosed flare (FL-1) is exempt from the requirements of 326 IAC 6-3, because it is considered an incineration unit.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
Pursuant to 326 IAC 7-1.1-1, the one (1) natural gas-assisted enclosed flare (FL-1) is not subject to the requirements of 326 IAC 7-1.1, since it has unlimited sulfur dioxide (SO_2) emissions less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.

<u>Tank Car Liner Installation Operation</u>

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-1(b)(15), the one (1) tank car liner installation operation is subject to the requirements of 326 IAC 6-3, since it has the potential to use greater than five (5) gallons per day of surface coatings. Pursuant to 326 IAC 6-3-2(d), particulate from the one (1) tank car liner installation operation shall be controlled by dry particulate filters and the Permittee shall operate the control device in accordance with the manufacturer's specifications.

326 IAC 8-2-9 (Miscellaneous Metal Coating Operations)
Pursuant to 326 IAC 8-2-1(a)(4), this rule applies to facilities located in any county, constructed after July 1, 1990, which have actual emissions of greater than fifteen (15) pounds of VOC per day before add-on controls, and that perform surface coating of metal and plastic parts as

specified in 326 IAC 8-2-9(a) and (b). The one (1) tank car liner installation operation is subject to the requirements of 326 IAC 8-2-9, since it has actual emissions of greater than fifteen (15) pounds of VOC per day before add-on controls and consists of the surface coating of railroad cars, which is specifically listed under 326 IAC 8-2-9(a)(2)(Q).

Pursuant to 326 IAC 8-2-9 (Miscellaneous Metal Coating Operations), the Permitee shall comply with the following requirements for the one (1) tank car liner installation operation:

(a) The Permittee shall not cause, allow, or permit the discharge into the atmosphere of any VOC in excess of the following:

(1) Four and three-tenths (4.3) pounds per gallon of coating, excluding water, delivered to a coating applicator that applies clear coatings.

(2) Three and five-tenths (3.5) pounds per gallon of coating, excluding water, delivered to a coating applicator in a coating application system that is air dried or forced warm air dried at temperatures up to one hundred ninety-four (194) degrees Fahrenheit.

(3) Three and five-tenths (3.5) pounds per gallon of coating, excluding water, delivered to a coating applicator that applies extreme performance coatings.

(4) Three (3) pounds per gallon of coating, excluding water, delivered to a coating applicator for all other coatings and coating application systems.

If more than one (1) of these emission limitations applies to a specific coating, then the least stringent emission limitation shall apply.

(b) Work practices shall be used to minimize VOC emissions from mixing operations, storage tanks, and other containers, and handling operations for coatings, thinners, cleaning materials, and waste materials. Work practices shall include, but not be limited to, the following:

(1) Store all VOC containing coatings, thinners, coating related waste, and cleaning materials in closed containers.

(2) Ensure that mixing and storage containers used for VOC containing coatings, thinners, coating related waste, and cleaning materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC containing coatings, thinners, coating related waste, and cleaning materials.

(4) Convey VOC containing coatings, thinners, coating related waste, and cleaning materials from one (1) location to another in closed containers or pipes.

(5) Minimize VOC emissions from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

The tank car liner installation operation is able to comply with the VOC content limitations in item (a)(2) above, since it has a VOC content of less than 3.5 pounds per gallon of coating, excluding water, and is a coating application system that is air dried or forced warm air dried at temperatures up to 194°F. The tank car liner installation operation uses a coating with a VOC

content of 3.24 pounds per gallon of coating, excluding water, and is dried at temperatures ranging from 225°F to 400°F.

Natural Gas Combustion

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

(a) The one (1) natural gas-fired air heater for curing tank car liner installation (H-1) is not subject to the provisions of 326 IAC 6-2 because this facility is not a source of indirect heating.

(b) The one (1) natural gas-fired steam boiler (8.37 MMBtu/hr) is subject to the requirements of 326 IAC 6-2-4 because this facility will begin operation after September 21, 1983, and is a source of indirect heating. Pursuant to 326 IAC 6-2-4(a), for a total source maximum operating capacity rating (Q) less than 10 MMBtu/hr, particulate emissions (Pt) shall not exceed 0.6 pound per MMBtu of heat input. Therefore, pursuant to 326 IAC 6-2-4(a), particulate emissions from the one (1) natural gas-fired steam boiler shall not exceed 0.6 pound per MMBtu of heat input.

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

The one (1) natural gas-fired air heater and the one (1) natural gas-fired steam boiler are each exempt from the requirements of 326 IAC 6-3, because, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight. In addition, pursuant to 326 IAC 6-3-1(b)(14), the one (1) natural gas-fired air heater and the one (1) natural gas-fired steam boiler are each exempt from the requirements of 326 IAC 6-3, because they each have potential particulate emissions of less than five hundred fifty one thousandths (0.551) pound per hour.

326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)

Pursuant to 326 IAC 7-1.1-1, the one (1) natural gas-fired air heater and the one (1) natural gas-fired steam boiler are each not subject to the requirements of 326 IAC 7-1.1, since each has unlimited sulfur dioxide (SO_2) emissions less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.

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

The one (1) natural gas-fired air heater and the one (1) natural gas-fired steam boiler are each not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each unit is less than twenty-five (25) tons per year.

Storage Tanks

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

Each of the storage tanks is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each unit is less than twenty-five (25) tons per year.

326 IAC 8-4-3 (Petroleum Sources; Petroleum Liquid Storage Facilities)

Pursuant to 326 IAC 8-4-1(c) and 326 IAC 8-4-3(a), each of the storage vessels at this source is not subject to the requirements of 326 IAC 8-4-3, since:

(1) each of the two (2) vertical fixed roof fuel oil storage tanks (FO-1 and FO-2), which were constructed after January 1, 1980, has a storage capacity less than thirty-nine thousand (39,000) gallons; and

(2) each of the two (2) vertical fixed roof rinse tanks (R-1 and R-2) do not store petroluem liquids.

326 IAC 8-9 (VOC Rules; Volatile Organic Liquid Storage Vessels)

Pursuant to 326 IAC 8-9-1(a), this source is not subject to the requirements of 326 IAC 8-9, since it is not located in Lake, Porter, Clark, or Floyd County.

Compliance Determination, Monitoring and Testing Requirements

(a) The compliance determination requirements applicable to this source are as follows:

Painting And Stenciling Operation and the Tank Car Liner Installation Operation

Compliance with the VOC content limitations shall be determined pursuant to 326 IAC 8-1-4(a)(3) and 326 IAC 8-1-2(a) by preparing or obtaining from the manufacturer the copies of the "as supplied" and "as applied" VOC data sheets. IDEM, OAQ**,** reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

Rail Tank Car Cleaning Operation (Wash Stations WS-1 through WS-10)

Note: The below equations were developed using guidance provided in the following documents:

1. Control of Volatile Organic Compound Emissions from Batch Processes - Alternative Control Techniques Information Document, EPA-453/R-93-017, February 1994, Sections 3.1.2.1 and 3.1.7.2.

2. Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, Final, August 2007, Emission Inventory Improvement Program, Volume II, Chapter 16, Section 3.2.1

For the rail tank car cleaning operation (Wash Stations WS-1 through WS-10), compliance with the VOC and HAP FESOP limitations shall be determined as follows:

(1) Emissions of VOC and HAPs from rail tank cars shall be calculated using the following equation:

$$E_{TOT} = \sum_{m=1}^{12} \left(E_D + E_P + E_C \right)$$

Where:

E_{TOT} = Total emissions of pollutant (tons/year);
E_D = Total emissions of pollutant from rail tank car depressurization (tons/month) as calculated in (2) below;
E_P = Total emissions of pollutant from rail tank car purging/degassing (tons/month) as calculated in (3) below;
E_C = Total emissions of pollutant from rail tank car cleaning (venting, washing, and rinsing) (tons/month) as calculated in (4) below; and
m = Each calendar month during the compliance period.

(2) During rail tank car depressurization, VOC and HAP pollutant emissions shall be calculated using the following equations:

$$E_D = \frac{\sum_{j=1}^{J}\left[\sum_{k=1}^{K}\left[\left(M_{k,i} - M_{k,f}\right)*\left(\frac{100\% - CE}{100\%}\right)\right]\right]}{2000\,lbs/ton}$$

$$M_{k,i} = \frac{MW_k * Y_k * P_{TOT,i} * V_{TOT}}{Z_k * R * T_i}$$

$$M_{k,f} = \frac{MW_k * Y_k * P_{TOT,f} * V_{TOT}}{Z_k * R * T_f}$$

Where:

E_D = Total emissions of pollutant from rail tank car depressurization (tons/month);
j = Each rail tank car processed per month
J = The total number of rail tank cars processed per month
k = Each pollutant in rail tank car;
K = The total number of pollutants in each rail tank car;
$M_{k,i}$ = Initial mass of each pollutant in each rail tank car before depressurization (lbs);
$M_{k,f}$ = Final mass of each pollutant in each rail tank car after depressurization (lbs);
CE = Overall control efficiency of flare (this value shall equal 98% until a valid compliance demonstration is conducted, in which case the value shall equal that determined from the most recent valid compliance demonstration);
MW_k = Vapor molecular weight of each pollutant (lb/lbmol);
Y_k = Mole or volume fraction of each pollutant in rail tank car vapor;
$P_{TOT,i}$ = Initial pressure of gas in rail tank car (psia);
$P_{TOT,f}$ = Final pressure of gas in rail tank car (psia);
V_{TOT} = Total volume of each rail tank car (psia);
Z_k = Compressibility factor of pollutant;
R = Universal Gas Constant (10.73 psia-ft^3/lbmol-°R); and
T_i = Initial temperature within each rail tank car (degrees Rankine, °R).
T_f = Final temperature within each rail tank car (degrees Rankine, °R).

(3) During rail tank car purging/degassing, VOC and HAP pollutant emissions shall be calculated using the following equations:

$$E_P = \frac{\sum_{j=1}^{J}\left[\sum_{k=1}^{K}\left[\left(M_{k,i} - M_{k,f}\right)*\left(\frac{100\% - CE}{100\%}\right)\right]\right]}{2000\,lbs/ton}$$

$$M_{k,i} = \frac{MW_k * Y_k * P_{TOT,i} * V_{TOT}}{R * T_i}$$

$$M_{k,f} = \left(\frac{M_{k,i}}{\exp(n)}\right) \approx \left(M_{k,i} * 0.368^n\right)$$

Where:

E_P = Total emissions of pollutant from rail tank car purging/degassing (tons/month);
j = Each rail tank car processed per month;
J = The total number of rail tank cars processed per month;
k = Each pollutant in rail tank car;
K = The total number of pollutants in each rail tank car;
$M_{k,i}$ = Initial mass of each pollutant in each rail tank car before purging/degassing (lbs);
$M_{k,f}$ = Final mass of each pollutant in each rail tank car after purging/degassing (lbs);
CE = Overall control efficiency of flare (this value shall equal 98% until a valid compliance demonstration is conducted, in which case the value shall equal that determined from the most recent valid compliance demonstration);
MW_k = Vapor molecular weight of each pollutant (lb/lbmol);
Y_k = Mole or volume fraction of each pollutant in rail tank car vapor;
$P_{TOT,i}$ = Initial pressure of gas in rail tank car before purging/degassing (psia);
V_{TOT} = Total volume of each rail tank car (psia);
R = Universal Gas Constant (10.73 psia-ft^3/lbmol-°R);
T_i = Initial temperature within each rail tank car (degrees Rankine, °R); and
exp( ) = Exponential function
n = Number of vapor volume changes by purging/degassing for each rail tank car.

(4) During cleaning (venting, washing, and rinsing) of rail tank cars that previously contained pressurized organic gases, high vapor pressure liquid organics, and low vapor pressure liquid organics, VOC and HAP pollutant emissions shall be calculated using the following equations:

$$E_C = \frac{\sum_{j=1}^{J}\left[\sum_{k=1}^{K}\left(M_{k,i}\right)\right]}{2000\,lbs/ton}$$

$$M_{k,i} = \frac{MW_k * Y_k * P_{TOT,i} * V_{TOT}}{R * T_i}$$

Where:

E_C = Total emissions of pollutant from rail tank car cleaning (venting, washing, and rinsing) (tons/month);
j = Each rail tank car processed per month;
J = The total number of rail tank cars processed per month;
k = Each pollutant in rail tank car;
K = The total number of pollutants in each rail tank car;
$M_{k,i}$ = Initial mass of each pollutant in each rail tank car before cleaning (venting, washing, and rinsing) (lbs);
MW_k = Vapor molecular weight of each pollutant (lb/lbmol);
Y_k = Mole or volume fraction of each pollutant in rail tank car vapor;
$P_{TOT,i}$ = Initial pressure of gas in rail tank car before cleaning (venting, washing, and rinsing) (psia);
V_{TOT} = Total volume of each rail tank car (psia);
R = Universal Gas Constant (10.73 psia-ft^3/lbmol-°R); and
T_i = Initial temperature within each rail tank car (degrees Rankine, °R).

(b) The compliance monitoring requirements applicable to this source are as follows:

Emission Unit	Control Device	Monitoring Frequency and Operating Parameters
Rail Tank Car Cleaning Operation	flare	continuous monitoring for presence of the flare pilot flame
Painting And Stenciling Operation	dry particulate filters	1. daily inspections of control device; 2. weekly overspray observations of vent V-5; and 3. monthly inspections of vent V-5 for presence of overspray on the rooftops and the nearby ground
Tank Car Liner Installation Operation		

(c) The testing requirements applicable to this source are as follows:

Testing Requirements				
Emission Units	**Control Device**	**Pollutant**	**Timeframe for Testing**	**Frequency of Testing**
Wash Stations (WS-1 through WS-10),	Flare FL-1	VOC (including capture efficiency and destruction efficiency)	Within 60 days after achieving the maximum capacity of one (1) or more of the wash stations (WS-1 through WS-10), but not later than one hundred eighty (180) days after initial startup of one (1) or more of the wash stations (WS-1 through WS-10)	Once every five (5) years from the date of the most recent valid compliance demonstration

These testing requirements are necessary to demonstrate compliance with 326 IAC 8-1-6 (BACT).

Conclusion and Recommendation

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant. An application for the purposes of this review was received on September 21, 2010. Additional information was submitted on October 4, 2010, October 12, 2010, January 4, 2011, June 23, 2011, July 22, 2011, July 25, 2011, and October 31, 2011.

The construction of new units and operation of this source shall be subject to the conditions of the attached proposed New Source Review and FESOP No. F027-29701-00006. The staff recommends to the Commissioner that this New Source Review and FESOP be approved.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Nathan Bell at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-5670 or toll free at 1-800-451-6027 extension 35670.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A: Emissions Calculations
Emission Summary

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

	Unlimited/Uncontrolled Potential to Emit (PTE) (tons/year)															
	Non-Fugitive Emissions*														Fugitive Emissions*	
Category	Pollutant	Welding & Flame Cutting	Abrasive Blasting Unit	Abrasive Storage Silo	Painting and Stenciling Operation	Dig Out Stations	Rail Tank Car Draining Operation	Rail Tank Car Cleaning Operation	Flare (FL-1) (waste gas combustion)	Flare (FL-1) (natural gas combustion)	Tank Car Liner Installation	Natural Gas Combustion	Fuel Oil Storage Tanks	**Total PTE (Non-Fugitive)***	Unpaved Roads	**Total PTE (Fugitive)***
Criteria	PM	4.95	175.20	2.63	56.63	6.57	0.0	0.0	NA	NA	8.69	0.10	0.0	**254.8**	1.20	**1.20**
Pollutants	PM10	4.95	122.64	0.63	56.63	1.58	0.0	0.0	NA	NA	8.69	0.40	0.0	**195.5**	0.30	**0.30**
and	PM2.5	4.95	122.64	0.63	56.63	1.58	0.0	0.0	NA	NA	8.69	0.40	0.0	**195.5**	0.30	**0.30**
GHGs	SO2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	0.03	0.0	**0.03**	0.0	**0.0**
	NOx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	2.66	0.0	**2.66**	0.0	**0.0**
	VOC	0.0	0.0	0.0	27.61	0.0	5.04	12,555.2	NA	NA	15.20	0.29	0.01	**12,603.4**	0.0	**0.0**
	CO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	4.46	0.0	**4.46**	0.0	**0.0**
	GHGs as CO2e	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	12,774.6	0.0	**12,774.6**	0.0	**0.0**
Hazardous	Benzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	1.1E-04	negl.	**1.1E-04**	0.0	0.0
Air	Cadmium	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	5.8E-05	negl.	**5.8E-05**	0.0	0.0
Pollutants	Chromium	8.96E-03	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	7.4E-05	negl.	**9.0E-03**	0.0	0.0
	Dichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	6.4E-05	negl.	**6.4E-05**	0.0	0.0
	Formaldehyde	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.52	4.0E-03	negl.	**0.53**	0.0	0.0
	Lead	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	2.7E-05	negl.	**2.7E-05**	0.0	0.0
	Manganese	0.02	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	2.0E-05	negl.	**0.02**	0.0	0.0
	n-Hexane	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	0.10	negl.	**0.10**	0.0	0.0
	Nickel	3.00E-03	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	1.1E-04	negl.	**3.1E-03**	0.0	0.0
	Toluene	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	0.0	1.8E-04	negl.	**1.8E-04**	0.0	0.0
	Ethylbenzene	0.0	0.0	0.0	1.22	0.0	0.0	0.0	NA	NA	0.0	0.0	negl.	**1.22**	0.0	0.0
	Methanol	0.0	0.0	0.0	0.0	0.0	5.04	0.0	NA	NA	0.0	0.0	negl.	**5.04**	0.0	0.0
	Methyl isobutyl ketone (MIBK)	0.0	0.0	0.0	4.05	0.0	0.0	0.0	NA	NA	0.0	0.0	negl.	**4.05**	0.0	0.0
	Phenol	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	NA	2.90	0.0	negl.	**2.90**	0.0	0.0
	Triethylamine	0.0	0.0	0.0	0.0	0.0	0.0	3843.5	NA	NA	0.0	0.0	negl.	**3,843.45**	0.0	0.0
	Xylenes	0.0	0.0	0.0	6.84	0.0	0.0	0.0	NA	NA	0.0	0.0	negl.	**6.84**	0.0	0.0
	Totals	**0.03**	**0.0**	**0.0**	**12.11**	**0.0**	**5.04**	**3843.5**	**0.0**	**0.0**	**3.42**	**0.10**	**negl.**	**3864.2**	**0.0**	**0.0**
													Worst Case Single HAP	**3843.45**		**0.0**
														(Triethylamine)		---

NA = Not Applicable (flare emissions are after limits and controls); negl. = negligible

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

Appendix A: Emissions Calculations
Emission Summary

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

		Limited Potential to Emit (PTE) (tons/year)														
		Non-Fugitive Emissions*													Fugitive Emissions*	
Category	Pollutant	Welding & Flame Cutting	Abrasive Blasting Unit**	Abrasive Storage Silo	Painting and Stenciling Operation	Dig Out Stations	Rail Tank Car Draining Operation	Rail Tank Car Cleaning Operation	Flare (FL-1) (waste gas combustion)	Flare (FL-1) (natural gas combustion)	Tank Car Liner Installation	Natural Gas Combustion	Fuel Oil Storage Tanks	**Total PTE (Non-Fugitive)***	Unpaved Roads	**Total PTE (Fugitive)***
Criteria	PM	4.95	36.00	2.63	56.63	6.57	0.0	0.0	0.17	0.004	8.69	0.10	0.0	**115.74**	1.20	**1.20**
Pollutants	PM10	4.95	25.20	0.63	56.63	1.58	0.0	0.0	0.17	0.02	8.69	0.40	0.0	**98.26**	0.30	**0.30**
and	PM2.5	4.95	25.20	0.63	56.63	1.58	0.0	0.0	0.17	0.02	8.69	0.40	0.0	**98.26**	0.30	**0.30**
GHGs	SO2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.007	0.001	0.0	0.03	0.0	**0.04**	0.0	**0.0**
	NOx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.09	0.20	0.0	2.66	0.0	**5.95**	0.0	**0.0**
	VOC	0.0	0.0	0.0	27.61	0.0	5.04	50.00	0.0	0.01	15.20	0.29	0.01	**98.16**	0.0	**0.0**
	CO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.83	0.17	0.0	4.46	0.0	**21.47**	0.0	**0.0**
	GHGs as CO2e	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6302.8	246.8	0.0	12,774.6	0.0	**19,324.1**	0.0	**0.0**
Hazardous	Benzene	0.0	0.0	0.0	0.0	0.0	0.0	Each Single HAP Less Than 3.0	0.0	4.3E-06	0.0	1.1E-04	negl.	**Each Single HAP Less Than 10**	0.0	0.0
Air	Cadmium	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.2E-06	0.0	5.8E-05	negl.		0.0	0.0
Pollutants	Chromium	8.96E-03	0.0	0.0	0.0	0.0	0.0		0.0	2.9E-06	0.0	7.4E-05	negl.		0.0	0.0
	Dichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5E-06	0.0	6.4E-05	negl.		0.0	0.0
	Formaldehyde	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5E-04	0.52	4.0E-03	negl.		0.0	0.0
	Lead	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.0E-06	0.0	2.7E-05	negl.		0.0	0.0
	Manganese	0.02	0.0	0.0	0.0	0.0	0.0		0.0	7.8E-07	0.0	2.0E-05	negl.		0.0	0.0
	n-Hexane	0.0	0.0	0.0	0.0	0.0	0.0		0.0	3.7E-03	0.0	0.10	negl.		0.0	0.0
	Nickel	3.00E-03	0.0	0.0	0.0	0.0	0.0		0.0	4.3E-06	0.0	1.1E-04	negl.		0.0	0.0
	Toluene	0.0	0.0	0.0	0.0	0.0	0.0		0.0	6.9E-06	0.0	1.8E-04	negl.		0.0	0.0
	Ethylbenzene	0.0	0.0	0.0	1.22	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Methanol	0.0	0.0	0.0	0.0	0.0	5.04		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Methyl isobutyl ketone (MIBK)	0.0	0.0	0.0	4.05	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Phenol	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	2.90	0.0	negl.		0.0	0.0
	Triethylamine	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Xylenes	0.0	0.0	0.0	6.84	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Totals	**0.03**	**0.0**	**0.0**	**12.11**	**0.0**	**5.04**	Combined HAPs Less Than **3.0**	**0.0**	**0.004**	**3.42**	**0.10**	**negl.**	**23.70**	**0.0**	**0.0**

negl. = negligible

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

**Note: The limited PTE of the abrasive blasting unit is based on an hours of operation limit of 1800 hours per year. This limitation is based on the uncontrolled potential to emit of the abrasive blasting unit. The use of one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

Appendix A: Emissions Calculations
Emission Summary

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

		Limited/Controlled Potential to Emit (PTE) (tons/year)														
		Non-Fugitive Emissions*													Fugitive Emissions*	
Category	Pollutant	Welding & Flame Cutting	Abrasive Blasting Unit**	Abrasive Storage Silo**	Painting and Stenciling Operation	Dig Out Stations	Rail Tank Car Draining Operation	Rail Tank Car Cleaning Operation	Flare (FL-1) (waste gas combustion)	Flare (FL-1) (natural gas combustion)	Tank Car Liner Installation	Natural Gas Combustion	Fuel Oil Storage Tanks	**Total PTE (Non-Fugitive)***	Unpaved Roads	**Total PTE (Fugitive)***
Criteria	PM	4.95	1.80	2.63	5.66	6.57	0.0	0.0	0.17	0.004	0.87	0.10	0.0	**22.75**	1.20	**1.20**
Pollutants	PM10	4.95	1.26	0.63	5.66	1.58	0.0	0.0	0.17	0.02	0.87	0.40	0.0	**15.54**	0.30	**0.30**
and	PM2.5	4.95	1.26	0.63	5.66	1.58	0.0	0.0	0.17	0.02	0.87	0.40	0.0	**15.54**	0.30	**0.30**
GHGs	SO2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.007	0.001	0.0	0.03	0.0	**0.04**	0.0	**0.0**
	NOx	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.09	0.20	0.0	2.66	0.0	**5.95**	0.0	**0.0**
	VOC	0.0	0.0	0.0	27.61	0.0	5.04	50.00	0.0	0.01	15.20	0.29	0.01	**98.16**	0.0	**0.0**
	CO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.83	0.17	0.0	4.46	0.0	**21.47**	0.0	**0.0**
	GHGs as CO2e	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6302.8	246.8	0.0	12,774.6	0.0	**19,324.1**	0.0	**0.0**
Hazardous	Benzene	0.0	0.0	0.0	0.0	0.0	0.0	Each Single HAP Less Than 3.0	0.0	4.3E-06	0.0	1.1E-04	negl.	**Each Single HAP Less Than 10**	0.0	0.0
Air	Cadmium	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.2E-06	0.0	5.8E-05	negl.		0.0	0.0
Pollutants	Chromium	8.96E-03	0.0	0.0	0.0	0.0	0.0		0.0	2.9E-06	0.0	7.4E-05	negl.		0.0	0.0
	Dichlorobenzene	0.0	0.0	0.0	0.0	0.0	0.0		0.0	2.5E-06	0.0	6.4E-05	negl.		0.0	0.0
	Formaldehyde	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.5E-04	0.52	4.0E-03	negl.		0.0	0.0
	Lead	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.0E-06	0.0	2.7E-05	negl.		0.0	0.0
	Manganese	0.02	0.0	0.0	0.0	0.0	0.0		0.0	7.8E-07	0.0	2.0E-05	negl.		0.0	0.0
	n-Hexane	0.0	0.0	0.0	0.0	0.0	0.0		0.0	3.7E-03	0.0	0.10	negl.		0.0	0.0
	Nickel	3.00E-03	0.0	0.0	0.0	0.0	0.0		0.0	4.3E-06	0.0	1.1E-04	negl.		0.0	0.0
	Toluene	0.0	0.0	0.0	0.0	0.0	0.0		0.0	6.9E-06	0.0	1.8E-04	negl.		0.0	0.0
	Ethylbenzene	0.0	0.0	0.0	1.22	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Methanol	0.0	0.0	0.0	0.0	0.0	5.04		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Methyl isobutyl ketone (MIBK)	0.0	0.0	0.0	4.05	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Phenol	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	2.90	0.0	negl.		0.0	0.0
	Triethylamine	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Xylenes	0.0	0.0	0.0	6.84	0.0	0.0		0.0	0.0	0.0	0.0	negl.		0.0	0.0
	Totals	**0.03**	**0.0**	**0.0**	**12.11**	**0.0**	**5.04**	Combined HAPs Less Than **3.0**	**0.0**	**0.004**	**3.42**	**0.10**	**negl.**	**23.70**	**0.0**	**0.0**

negl. = negligible

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

**Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.

Appendix A: Emissions Calculations
Welding and Flame Cutting Operation

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

Particulate Matter (PM) and Hazardous Air Pollutants (HAPs)

Process	Type of Welding (electrode type)	Number of Stations	Maximum Electrode Consumption per station (lbs/hr)	Maximum Electrode Consumption per station (lbs/day)	Total Combined Electrode Consumption (lbs/year)	Emission Factors* (lb pollutant/lb electrode)					Potential Emissions (lbs/hr)					
						PM/PM10/PM2.5	Cr	Co	Mn	Ni	PM/PM10/PM2.5	Cr	Co	Mn	Ni	Total HAPs
Metal Inert Gas (MIG) Welding Operation (Building 1)	Gas Metal Arc Welding (E70S)	9	0.29	7.0	22,864	5.2E-03	1.0E-06	1.0E-06	3.2E-04	1.0E-06	0.014	2.6E-06	2.6E-06	8.3E-04	2.6E-06	8.4E-04
Metal Inert Gas (MIG) Welding Operation (Building 2)	Gas Metal Arc Welding (E70S)	9	0.29	7.0	22,864	5.2E-03	1.0E-06	1.0E-06	3.18E-04	1.0E-06	0.014	2.6E-06	2.6E-06	8.3E-04	2.6E-06	8.4E-04

Process	Type of Flame Cutting	Number of Stations	Maximum Metal Thickness Cut (in)	Maximum Metal Cutting Rate per station (in/minute)	Maximum Metal Cutting Rate per station (in/hour)	Emission Factors (lb pollutant/1,000 inches cut/1 inch thickness)					Potential Emissions (lbs/hr)					
						PM/PM10/PM2.5	Cr	Co	Mn	Ni	PM/PM10/PM2.5	Cr	Co	Mn	Ni	Total HAPs
Flame Cutting Operation (Building 1)	Oxyacetylene/ Electric Arc	9	1.00	6.30	378	1.6E-01	3.0E-04	---	5.0E-04	1.0E-04	0.55	1.0E-03	---	1.7E-03	3.4E-04	3.1E-03
Flame Cutting Operation (Building 2)	Oxyacetylene/ Electric Arc	9	1.00	6.30	378	1.6E-01	3.0E-04	---	5.0E-04	1.0E-04	0.55	1.0E-03	---	1.7E-03	3.4E-04	3.1E-03

Abbreviations
Cr = Chromium Mn = Manganese
Co = Cobalt Ni = Nickel

Total Potential Emissions (lbs/hr)	1.13	2.0E-03	5.2E-06	5.1E-03	6.9E-04	7.8E-03
Total Potential Emissions (lbs/day)	27.14	0.05	1.3E-04	0.12	1.6E-02	0.19
Total Potential Emissions (tons/year)	4.95	9.0E-03	2.3E-05	0.02	3.0E-03	0.03

METHODOLOGY
*Emission Factors from AP-42 Section 12.19 Electric Arc Welding Tables 12.19-1 and Table 12.19-2 for Gas Metal Arc Welding (GMAW) (SCC 3-09-052) Electrode Type E70S
Welding
Maximum Electrode Consumption per station (lbs/day) = [Maximum Electrode Consumption per station (lb electrode/hr)] * [24 hours/day
Maximum Electrode Consumption per station (lbs/day) = [Number of stations] * [Maximum Electrode Consumption per station (lb electrode/hr)] * {24 hours/day] * [365 days/year
Welding Potential Emissions (lbs/hr) = [Number of stations] * [Maximum Electrode Consumption per station (lb electrode/hr)] * [Emission Factor (lb pollutant/lb of electrode)
Welding Potential Emissions (lbs/day) = [Welding Potential Emissions (lbs/hr)] * [24 hrs/day]
Welding Potential Emissions (tons/year) = [Welding Potential Emissions (lbs/hr)] * [8760 hrs/year] * [ton/2000 lbs
Flame Cutting
Maximum Metal Cutting Rate per station (in/hour) = [Maximum Metal Cutting Rate per station (in/minute)] * [60 minutes/hour
Cutting Potential Emissions (lb/hr) = [Number of stations] * [Maximum Metal Thickness Cut (in)] * [Maximum Metal Cutting Rate per station (in/min)] * [60 min/hr] * [Emission Factor (lb pollutant/1,000 in. cut/1 in thickness
Cutting Potential Emissions (lbs/day) = [Cutting Potential Emissions (lbs/hr)] * [24 hrs/day
Cutting Potential Emissions (tons/year) = [Cutting Potential Emissions (lbs/hr)] * [8760 hrs/year] * [ton/2000 lbs

Appendix A: Emission Calculations
Abrasive Blasting Unit

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

Emission Factors for Abrasives (Stappa/Alapco, 1991)*

Abrasive	Emission Factor		
	lb PM/lb abrasive	lb PM10/lb PM	
Sand	0.041	0.7	
Grit	**0.01**	**0.7**	<---- emission factors used for black beauty grit abrasive
Steel Shot	0.004	0.86	
Other	0.01		

Unlimited Potential to Emit (PTE) PM/PM10/PM2.5

Emission Unit (Abrasive Blasting Media)	Maximum Abrasive Usage Rate (lbs/hr)	Unlimited/Uncontrolled PTE (lbs/hr)			Maximum Hours of Operation (hours/year)	Unlimited/Uncontrolled PTE (tons/yr)		
		PM	PM10	PM2.5**		PM	PM10	PM2.5**
Abrasive Blasting Unit (Black Beauty Grit)	4000	40.00	28.00	28.00	8760	175.20	122.64	122.64

Limited Potential to Emit (PTE) PM/PM10/PM2.5

Emission Unit	Maximum Abrasive Usage Rate (lbs/hr)	Unlimited/Uncontrolled PTE (lbs/hr)			Limited Hours of Operation (hours/year)	Limited/Uncontrolled PTE (tons/yr)			Control Efficiency (%)	Limited/Controlled PTE (tons/yr)***		
		PM	PM10	PM2.5**		PM	PM10	PM2.5**		PM	PM10	PM2.5**
Abrasive Blasting Unit (Black Beauty Grit)	4000	40.00	28.00	28.00	1800	36.00	25.20	25.20	95.0%	1.80	1.26	1.26

Methodology:
*Emission Factors from STAPPA/ALAPCO "Air Quality Permits", Vol. I, Section 3 "Abrasive Blasting" (1991 edition)
**PM2.5 emissions assumed equal to PM10 emissions.
***Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.
Unlimited/Uncontrolled PTE of PM (lbs/hr) = [Maximum Abrasive Usage Rate (lb/hr)] * [Emission Factor (lb PM/lb abrasive)]
Unlimited/Uncontrolled PTE of PM10 (lbs/hr) = [Unlimited/Uncontrolled PTE of PM (tons/yr)] * [0.86 lb PM10/lb PM
Unlimited/Uncontrolled PTE (tons/yr) = [Unlimited/Uncontrolled PTE (lbs/hr)] * [8,760 hrs/year] * [tons/2,000 lbs]
Limited/Uncontrolled PTE of PM (tons/yr) = [Unlimited/Uncontrolled PTE of PM (lbs/hr)] * [Limited Hours of Operation (hours/year)] * [tons/2,000 lbs
Limited/Uncontrolled PTE of PM10 (tons/yr) = [Limited/Uncontrolled PTE of PM (tons/yr)] * [0.86 lb PM10/lb PM
Limited/Controlled PTE (tons/yr) = [Limited/Uncontrolled PTE (tons/yr)] * [1 - control efficiency

326 IAC 6-3-2 Allowable PM Emission Rate

Unit	Average Weight of Rail Tank Car (lbs)*	Maximum Abrasive Usage Rate (lbs/hr)	Total Process Weight Rate (lbs/hr)**	Total Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)	Uncontrolled PTE of PM (lbs/hr)	Control Efficiency (%)	Controlled PTE of PM (lbs/hr)
Abrasive Blating Unit	65700	4000	69700	34.85	41.28	40.00	95.0%	2.00

Methodology:
*Average weight based on a 30,000 gallon rail tank car.
**Assuming that one rail tank car can be processed during a 1 hour period.
Total Process Weight Rate (lbs/hr) = [Average Weight of Rail Tank Car (lbs) / 1 hour] + [Abrasive Usage Rate (lbs/hr)]
326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr) = [55.0 * [Total Process Weight Rate (tons/hr)]^0.11] - 40
Uncontrolled PTE of PM (lbs/hr) = [Maximum Blasting Rate (lb/hr)] * [Emission Factor (lb PM/lb abrasive)]
Controlled PTE (tons/yr) = [Uncontrolled PTE (tons/yr)] * [1 - control efficiency]

Acronyms
PTE = Potential to Emit
PM = Particulate Matter
PM10 = Particulate Matter less than 10 micrometers
PM2.5 = Particulate Matter less than 2.5 micrometers

Appendix A: Emission Calculations
Abrasive Storage Silo

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

To estimate particulate emissions from loading of black beauty abrasive grit into the storage silo, it was assumed that the grit particle size was similar to crushed stone fines and that loading of the grit into the storage silo could be conservatively estimated using emission factors for fines screening at crushed stone processing operations (AP 42 Chapter 11.19.2, Table 11.19.2-2).

Unlimited Potential to Emit (PTE) PM/PM10/PM2.5

		Uncontrolled Emission Factor (lbs/ton)*			Uncontrolled PTE (tons/yr)				Controlled PTE (tons/yr)***		
Emission Unit	Maximium Abrasive Throughput (lbs/hr)	PM	PM10	PM2.5**	PM	PM10	PM2.5**	Control Efficiency (%)	PM	PM10	PM2.5**
Abrasive Storage Silo	4000	0.30	0.072	0.072	2.63	0.63	0.63	95.0%	0.13	0.03	0.03

Methodology
*Emission factors are for fines screening at crushed stone processing operations (AP 42 Chapter 11.19.2, Table 11.19.2-2).
**PM2.5 emissions assumed equal to PM10 emissions.
***Note: Operation of the one (1) dust collector is not required to comply with any requirement and is operated by the Permittee on a voluntary basis.
Uncontrolled PTE (tons/yr) = [Maximum Abrasive Throughput (lbs/hr)] * [ton/2000 lbs] * [Uncontrolled Emission Factor (lbs/ton)] * [8760 hours/year] * [ton/2000 lb
Controlled PTE (tons/yr) = [Uncontrolled PTE (tons/yr)] * [1 - control efficiency]

326 IAC 6-3-2 Allowable PM Emission Rate

Unit	Maximum Batch Silo Filling Rate (tons/hr)*	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)	Uncontrolled PTE of PM (lbs/hr)	Control Efficiency (%)	Controlled PTE of PM (lbs/hr)
Abrasive Storage Silo	25.0	35.43	7.50	95.0%	0.38

Methodology:
*Assuming that the delivery tank truck can unload 25 tons of abrasive grit into the storage silo in 1 hour.
326 IAC 6-3-2 Allowable PM Emission Rate = 4.10 * [Process Weight Rate (tons/hr)]^0.67
Uncontrolled PTE of PM (lbs/hr) = [Maximum Blasting Rate (lb/hr)] * [Emission Factor (lb PM/lb abrasive)]
Controlled PTE (tons/yr) = [Uncontrolled PTE (tons/yr)] * [1 - control efficiency]

Acronyms
PTE = Potential to Emit
PM = Particulate Matter
PM10 = Particulate Matter less than 10 micrometers
PM2.5 = Particulate Matter less than 2.5 micrometers

Appendix A: Emissions Calculations
Surface Coating and Solvents
Surface Coating: Painting and Stenciling Operation

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

Potential Material Usage

Material	Primary Type of Surface Coated	Maximum Material Usage (gal/car)	Production Capacity (cars/hr)**	Maximum Material Usage (gal/day)
Worst Case Top Coat (as applied)*	metal	14.0	0.144	48.38
Worst Case Base Coat (as applied)*	metal	10.5	0.144	36.29
Cleanup Solvent (Methyl ethyl ketone)	n/a	1.47	0.144	5.08

Potential to Emit (PTE) of Volatile Organic Compounds (VOC) and Particulate Matter (PM)

Material	Density (lbs/gal)	Weight % Volatile (H20 & Organics)	Weight % Water + Non-VOC	Weight % Organics	Weight % Solids	Volume % Water + Non-VOC	Volume % Organics	Volume % Solids	VOC Content (lbs/gal) Less Water	VOC Content (lbs/gal)	Transfer Efficiency	Control Efficiency	PTE of VOC (lb/hr)	PTE of VOC (lb/day)	PTE of VOC (tons/yr)	Uncontrolled PTE of PM/PM10/PM2.5 (lb/hr)	Uncontrolled PTE of PM/PM10/PM2.5 (tons/yr)	Controlled PTE of PM/PM10/PM2.5 (lb/hr)	Controlled PTE of PM/PM10/PM2.5 (tons/yr)
Worst Case Top Coat (Part A)*	13.41	26.00%	24.44%	1.56%	74.0%	28.00%	2.00%	70.00%	0.29	0.21									
Worst Case Top Coat (Part B)*	13.27	15.00%	8.00%	7.00%	85.0%	11.50%	8.50%	80.00%	1.05	0.93									
Worst Case Top Coat (as applied)*	**13.34**	**20.50%**	**16.22%**	**4.28%**	**79.5%**	**19.75%**	**5.25%**	**75.00%**	**0.71**	**0.57**	**65%**	**90%**	**1.15**	**27.62**	**5.04**	**7.48**	**32.78**	**0.75**	**3.28**
Worst Case Base Coat (Part A)*	14.19	8.80%	0.0%	8.8%	91.2%	0.0%	13.00%	87.00%	1.25	1.25									
Worst Case Base Coat (Part B)*	11.33	29.90%	0.0%	29.9%	70.1%	0.0%	34.00%	66.00%	3.39	3.39									
Worst Case Base Coat (as applied)*	**12.76**	**19.35%**	**0.0%**	**19.35%**	**80.7%**	**0.0%**	**23.50%**	**76.50%**	**2.47**	**2.47**	**65%**	**90%**	**3.73**	**89.60**	**16.35**	**5.45**	**23.85**	**0.54**	**2.39**
Cleanup Solvent (Methyl ethyl ketone)	6.71	100.0%	0.0%	100%	0.0%	0.0%	100.0%	0.0%	6.71	6.71	100%	0%	1.42	34.07	6.22	0.00	0.00	0.00	0.00
												Potential to Emit:	**6.30**	**151.29**	**27.61**	**12.93**	**56.63**	**1.29**	**5.66**

Potential to Emit (PTE) of Hazardous Air Pollutants (HAPs)

Material	Density (lbs/gal)	Weight % Ethylbenzene	Weight % Xylene	Weight % MIBK	PTE of Ethylbenzene (tons/yr)	PTE of Xylenes (tons/yr)	PTE of MIBK (tons/yr)
Worst Case Top Coat (Part A)*	13.41	0.20%	1.0%	0%			
Worst Case Top Coat (Part B)*	13.27	0.30%	2.0%	4.00%			
Worst Case Top Coat (as applied)*	**13.34**	**0.25%**	**1.5%**	**2.00%**	**0.29**	**1.77**	**2.36**
Worst Case Base Coat (Part A)*	14.19	0.2%	1.0%	4.00%			
Worst Case Base Coat (Part B)*	11.33	2.0%	11.0%	0.00%			
Worst Case Base Coat (as applied)*	**12.76**	**1.1%**	**6.0%**	**2.00%**	**0.93**	**5.07**	**1.69**
Cleanup Solvent (Methyl ethyl ketone)	6.71	0.0%	0.0%	0.0%	0.00	0.00	0.00
				Totals	**1.22**	**6.84**	**4.05**

PTE of Total HAPs (tons/year) = 12.11

Methodology

*Top coat is composed of a 1:1 ratio of top coat parts A and B and base coat is composed of a 1:1 ratio of base coat parts A and B.
**The poduction capacity is based on anticipated actual production of 300 cars/year during an actual operating time of 2080 hours/year, where [300 cars/year]/[2080 hours/year] = 0.144 cars/hour
At 8760 hours per year, the annual production capacity is [0.144 cars/hour] * [8760 hours/year] = 1263 cars/year
Weight % Organics = [Weight % Volatiles (H20 & Organics)] - [Weight % Water + Non-VOC]
VOC Content (lbs/gal) Less Water = [Density (lbs/gal)] * [Weight % Organics] / [1 - Volume % Water]
VOC Content (lbs/gal) = [Density (lb/gal)] * [Weight % Organics]
Maximum Material Usage (gal/day) = [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [24 hours/day]

PTE of VOC (lbs/hr) = [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [Density (lbs/gal)] * [Weight % Organics]
PTE of VOC (lbs/day) = [PTE of VOC (lbs/hr)] * [(24 hrs/ day)]
PTE of VOC (tons/yr) = [PTE of VOC (lbs/day)] * [365 days/year] * [ton/2000 lbs]
PTE of HAP (tons/yr) = [Density (lbs/gal)] * [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [Weight % HAP] * [8760 hours/year] * [ton/2000 lbs]

Uncontrolled PTE of PM/PM10/PM2.5 (lbs/hr) = [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [Density (lbs/gal)] * [1 - Weight % Volatiles] * [1 - Transfer Efficiency]
Uncontrolled PTE of PM/PM10/PM2.5 (tons/yr) = [Uncontrolled PTE of PM/PM10/PM2.5 (lbs/hr)] * [8760 hrs/yr] * [ton/2000 lbs]
Controlled PTE of PM/PM10/PM2.5 (lbs/hr) = [Uncontrolled PTE of PM/PM10/PM2.5 (lbs/hr)] * [1 - Control Efficiency]
Controlled PTE of PM/PM10/PM2.5 (tons/yr) = [Controlled PTE of PM/PM10/PM2.5 (lbs/hr)] * [8760 hrs/yr] * [ton/2000 lbs]

Acronyms

PTE = Potential to Emit
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutant
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)
MIBK = Methyl isobutyl ketone

Appendix A: Emission Calculations
Dig Out Stations (WS-11 and WS-12)

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

Unit	Maximum Processing Rate (lbs/hour)	Emission Factor (lbs/ton)			Potential to Emit (lbs/hr)			Potential to Emit (tons/yr)		
		PM	PM10	PM2.5*	PM	PM10	PM2.5*	PM	PM10	PM2.5*
Dig Out Station (Building #3)	5000	0.30	0.072	0.072	0.750	0.180	0.180	3.29	0.79	0.79
Dig Out Station (Building #3)	5000	0.30	0.072	0.072	0.750	0.180	0.180	3.29	0.79	0.79
							Totals	**6.57**	**1.58**	**1.58**

Methodology
Because there are no emission factors available for railcar dig out operations, particulate emission from unloading of solid residues from rail hopper cars at the dig out station were estimated using emission factors for fines screening at crushed stone processing operations (AP 42 Chapter 11.19.2, Table 11.19.2-2).
Potential to Emit PM/PM10/PM2.5 (lbs/hr) = Emission Factor (lbs/ton) * Maximum Processing Weight (lbs/hr) * (1 ton/2000 lbs)
Potential to Emit PM/PM10/PM2.5 (tons/yr) = Emission Factor (lbs/ton) * Maximum Processing Weight (lbs/hr) * (1 ton/2000 lbs) * (8760 hrs/yr) * (1 ton/2000 lbs)
*PM2.5 emissions assumed equal to PM10 emissions.

326 IAC 6-3-2 Allowable PM Emission Rate

Unit	Process Weight Rate (lbs/hr)	Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)	Uncontrolled PTE of PM (lbs/hr)
Dig Out Station (Building #3)	5000	2.50	7.58	0.750
Dig Out Station (Building #3)	5000	2.50	7.58	0.750

Methodology:
326 IAC 6-3-2 Allowable PM Emission Rate = 4.10 * [Process Weight Rate (tons/hr)]^0.67

Acronyms
PTE = Potential to Emit
PM = Particulate Matter
PM10 = Particulate Matter less than 10 micrometers
PM2.5 = Particulate Matter less than 2.5 micrometers

Appendix A: Emissions Calculations
Rail Tank Car Draining (WS-1 through WS-10)

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

To calculate evaporative emissions from the draining of organic liquids from rail tank cars, emission factors from AP-42 Chapter 5.2 Transportation And Marketing Of Petroleum Liquids were used
The total potential emission of VOC and HAP is as follows:

Total Number of Wash Stations =	10	(WS-1 through WS-10)
Maximum Annual Operating Hours (hours/year) =	8760	

Maximum Rail Tank Car Throughput

Chemical Type	Single Wash Station Processing Time (hours/car)*	Single Wash Station Production Capacity (cars/hr/station)	Maximum Throughput for 10 Wash Stations (cars/year)**	Volume of Liquid Heel Drained from Each Rail Tank Car (gallons/car)	Annual Amount of Liquid Heel Drained from Rail Tank Cars (kgal/year)
High Vapor Pressure Liquid Organics (List 2)	2.0	0.50	43800	20	876.00

Uncontrolled/Unlimited Potential to Emit VOC and HAPs for 10 Wash Stations (WS-1 through WS-10)

Emission Source	Emission Factor (lb/kgal of throughput)**	Uncontrolled/Unlimited PTE of VOC (tons/year)	Uncontrolled/Unlimited PTE of HAP (tons/year)***	Worst Case HAP***
Filling drum (splash filling)	11.50	5.04	5.04	methanol

Methodology
*Process times and VOC and HAP emission factors provided by the source based on worst case anticipated chemical inputs to the process.
**Emission Factors from AP-42 Chapter 5.2 Transportation And Marketing Of Petroleum Liquids (dated 6/08), Table 5.2-
***As a worst case assumption, the VOC emitted is assumed to be HAP. All HAP assumed to be methanol, since methanol has the highest vapor pressure of all HAPs processed by the source
Single Wash Station Production Capacity (cars/hr/station) = [1 / Single Wash Station Processing Time (hours/car)]
Maximum Throughput for 10 Wash Stations (cars/year) = [Single Wash Station Production Capacity (cars/hr/station)] * [Total Number of Wash Stations] * [Maximum Annual Operating Hours (hours/year)]
Annual Amount of Liquid Heel Drained from Rail Tank Cars (kgal/yr) = [Volume of Liquid Heel Drained from Each Rail Tank Car (gallons/car)] * [Maximum Throughput for 10 Wash Stations (cars/year)] * [kgal/1000 ga
Uncontrolled/Unlimited PTE (tons/yr) = [Annual Amount of Liquid Heel Drained from Rail Tank Cars (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb
Limited Amount of Liquid Heel Drained from Rail Tank Cars (kgal/yr) = [Volume of Liquid Heel Drained from Each Rail Tank Car (gallons/car)] * [Limited Throughput for 10 Wash Stations (cars/year)] * [kgal/1000 ga
Uncontrolled/Limited PTE (tons/yr) = [Limited Amount of Liquid Heel Drained from Rail Tank Cars (kgal/yr)] * [Emission Factor (lb/kgal)] * [ton/2000 lb

Abbreviations
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutant
PTE = Potential to Emit

Appendix A: Emissions Calculations
Rail Tank Car Cleaning Operation (WS-1 through WS-10)
Depressurizing, Purging/Degassing, and Venting, Washing, Rinsing, and Drying

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

Total Number of Wash Stations = 10 (WS-1 through WS-10)
Maximum Annual Operating Hours (hours/year) = 8760

Maximum Rail Tank Car Throughput

Chemical Type	Single Wash Station Processing Time (hours/car)*	Single Wash Station Production Capacity (cars/hr/station)	Maximum Throughput for 10 Wash Stations (cars/year)**
Organic Gases (List 1)	6.0	0.17	14600
High Vapor Pressure Liquid Organics (List 2)	2.0	0.50	43800
Low Vapor Pressure Liquid Organics (List 3)	1.0	1.00	87600
Liquid Inorganics (List 4)	1.0	1.00	87600
Liquid Food Grade Products (List 5)	1.0	1.00	87600

Unlimited/Uncontrolled Potential to Emit VOC for 10 Wash Stations (WS-1 through WS-10)

		Worst Case VOC Uncontrolled Emission Factor (lbs VOC/car)***				Worst Case Unlimited/Uncontrolled PTE of VOC (tons/year)**			
Chemical Type	Worst Case VOC*	Depressurizing	Purging/ Degassing	Venting, Washing, Rinsing, and Drying	**Total**	Depressurizing	Purging/ Degassing	Venting, Washing, Rinsing, and Drying	**Total**
Organic Gases (List 1)	butane	1083.06	632.42	4.42	**1719.9**	7906.3	4616.7	32.2	**12555.2**
High Vapor Pressure Liquid Organics (List 2)	1-hexene	0.0	376.71	0.13	**376.8**	0.0	8249.9	2.8	**8252.8**
Low Vapor Pressure Liquid Organics (List 3)	isooctyl alcohol	0.0	0.0	1.38	**1.38**	0.0	0.0	60.6	**60.6**
Liquid Inorganics (List 4)	none	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**
Liquid Food Grade Products (List 5)	none	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**
								Worst Case	**12555.2**

Unlimited/Uncontrolled Potential to Emit HAP for 10 Wash Stations (WS-1 through WS-10)

		Worst Case HAP Uncontrolled Emission Factor (lbs HAP/car)***				Worst Case Unlimited/Uncontrolled PTE of HAP (tons/year)**			
Chemical Type	Worst Case HAP*	Depressurizing	Purging/ Degassing	Venting, Washing, Rinsing, and Drying	**Total**	Depressurizing	Purging/ Degassing	Venting, Washing, Rinsing, and Drying	**Total**
Organic Gases (List 1)	none	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**
High Vapor Pressure Liquid Organics (List 2)	triethylamine	0.0	175.44	0.06	**175.5**	0.0	3842.1	1.31	**3843.5**
Low Vapor Pressure Liquid Organics (List 3)	naphthalene	0.0	0.0	0.56	**0.56**	0.0	0.0	24.5	**24.5**
Liquid Inorganics (List 4)	none	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**
Liquid Food Grade Products (List 5)	none	0.0	0.0	0.0	**0.0**	0.0	0.0	0.0	**0.0**
								Worst Case	**3843.5 (triethylamine)**

Methodology
*Processing times provided by the source based on similar operations at other facilities.
**Assuming that all 10 wash stations only process chemicals from List 1, List 2, List 3, List 4, or List 5, for 8760 hours per year.
***VOC and HAP emission factors provided by the source based on worst case anticipated chemical inputs to the process, with the following assumptions:
- for organic gases (List 1), is it assumed that the rail tank car initially contains organic gases at a worst case pressure of 39.7 psia and a temperature of 100 degrees F.
- for high vapor pressure liquid organics (List 2), is it assumed that the rail tank car initially contains saturated organic vapors based on the vapor pressure and a temperature of 100 degrees F.
- for low vapor pressure liquid organics (List 3), is it assumed that the rail tank car initially contains saturated organic vapors based on the vapor pressure and a temperature of 100 degrees F.

Single Wash Station Production Capacity (cars/hr/station) = [1 / Single Wash Station Processing Time (hours/car)]
Maximum Throughput for 10 Wash Stations (cars/year) = [Single Wash Station Production Capacity (cars/hr/station)] * [Total Number of Wash Stations] * [Maximum Annual Operating Hours (hours/year)]
Unlimited/Uncontrolled PTE of VOC (tons/year) = [Maximum Throughput for 10 Wash Stations (cars/year)] * [Worst Case VOC Uncontrolled Emission Factor (lb VOC/car)] * [ton/2000 lbs]
Unlimited/Uncontrolled PTE of HAP (tons/year) = [Maximum Throughput for 10 Wash Stations (cars/year)] * [Worst Case HAP Uncontrolled Emission Factor (lb VOC/car)] * [ton/2000 lbs]

Limited Potential to Emit VOC for 10 Wash Stations (WS-1 through WS-10) pursuant to 326 IAC 2-8 (FESOP)

Pollutant	Limited PTE (tons/year)
VOC	50.0
Total HAPs	3.0
Worst Single HAP	3.0

Acronyms
PTE = Potential to Emit
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutant

Appendix A: Emissions Calculations
Flare (FL-1) Emissions
Waste Gas Combution Only

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

1. VOC Emissions

VOC emissions from the rail tank car cleaning operation are controlled by natural gas-assisted enclosed flare.

Flare Pilot Heat Input (natural gas for pilot) =	0.476	MMBtu/hour	Universal Gas Constant =	10.73	psia ft3/lbmol R
Maximum Hours Operated per Year =	8760	hour/year	Gas/Vapor Temperature =	72.0	oF
Potential Fuel Usage (natural gas for pilot) =	4169.76	MMBtu/year	Gas/Vapor Temperature =	532.7	R
Natural Gas High Heat Value (HHV) =	1020	MMBtu/MMscf	Atmospheric Pressure =	14.7	psia
Potential Fuel Usage (natural gas for pilot) =	4.09	MMcf/year			

VOC Emission Factors for Rail Tank Car Cleaning

	Worst Case VOC Uncontrolled Emission Factor (lbs VOC/car)		Overall Required VOC Control Efficiency		VOC Captured/Combusted (lbs VOC/car)		
Chemical Type	Depressurizing	Purging/ Degassing	Depressurizing	Purging/ Degassing	Depressurizing	Purging/ Degassing	**Total**
Organic Gases (List 1)	1083.06	632.42	98.0%	98.0%	1061.39	619.77	**1681.17**
High Vapor Pressure Liquid Organics (List 2)	0.0	376.71	0.0%	98.0%	0.0	369.18	**369.18**

Captured/Combusted VOC for 10 Wash Stations (WS-1 through WS-10)

Chemical Type	Limited Throughput for all 10 Wash Stations (cars/year)	Worst Case VOC	Molecular Weight (lb/lbmol)	Heat Content (MMBtu/lb)	VOC Captured/ Combusted (tons/year)	VOC Captured/ Combusted (MMcf/year)	VOC Captured/ Combusted (MMBtu/year)
Organic Gases (List 1)	2000	butane	58.123	0.0213	1681.17	22.50	71617.7
High Vapor Pressure Liquid Organics (List 2)	2000	1-hexene	84.161	0.0206	369.2	3.41	15210.0
				Totals (waste gas)		**25.91**	**86827.78**
				Flare Pilot (natural gas for pilot)		**4.09**	**4169.76**
				Totals (waste gas + natural gas for pilot)		**30.00**	**90997.54**

Methodology
VOC Captured/Combusted (lbs VOC/car) = [Worst Case VOC Uncontrolled Emission Factor (lbs VOC/car)] * [Overall Required VOC Control Efficiency]
VOC Captured/Combusted (tons/year) = [VOC Captured/Combusted (lbs VOC/car)] * [Limited Throughput for all 10 Wash Stations (cars/year)] * [ton/2000 lbs]
VOC Captured/Combusted (MMcf/year) = [VOC Captured/Combusted (tons/year)] * [2000 lbs/ton] * [Universal Gas Constant (psia ft3/lbmol R)] * [Gas/Vapor Temperature (R)] / [Atmospheric Pressure (psia)] / [Molecular Weight (lb/lbmol)] / [1000000 ft3/MMcf]
VOC Captured/Combusted (MMBtu/year) = [VOC Captured/Combusted (tons/year)] * [2000 lbs/ton] * [Heat Content (MMBtu/lb)]
Totals (waste gas + natural gas for pilot) = [Totals (waste gas)] + [Flare Pilot (natural gas for pilot)]

	Pollutant		
Criteria Pollutants	PM/PM10/PM2.5*	NOx**	CO**
Emission Factor	177.0 (ug/L)	0.068 (lbs/MMBtu)	0.37 (lbs/MMBtu)
Potential to Emit (PTE) (tons/yr)	0.17	3.09	16.83

Methodology
*Emission Factor for PM is from AP-42, Chapter 13.5 - Industrial Flares -Table 13.5-1 - Soot for average smoking flares (AP-42, 01/95).
PM10 and PM2.5 emissions are assumed equal to PM emissions.
**Emission Factors for NOx and CO are from AP-42, Chapter 13.5 - Industrial Flares, Table 13.5-1 (AP-42, 01/95)
PTE of PM/PM10/PM2.5 (tons/yr) = [VOC Captured/Combusted (MMBtu/year)] * [1000000 ft3/MMcf] * [28.317 L/ft3] * [Emission Factor (ug/L)] * [g/1000000 ug] * [lbs/453.6 g] * [ton/2000 lbs]
PTE of NOx/CO (tons/yr) = [Maximum Heat Input (MMBtu/year)] * [Emission Factor (lbs/MMBtu)] * [ton/2000 lb

2. Sulfur Dioxide (SO2) Emissions
To calculate SO2 emissions for combustion of organic vapors from the rail tank car cleaning operation, it is assumed that the organic vapors are from No. 6 fuel oil with a sulfur content of 1.5%

Worst Case Emission of No. 6 Fuel Oil Vapors =	0.048	lbs/hour
Density of No. 6 Fuel Oil =	7.0	lbs/gallon
Worst Case Emission of No. 6 Fuel Oil Vapors =	0.060	kgals/year
Weight % Sulfur (S) =	1.5	%
SO2 Emission Factor in (157*S) =	235.5	lb/kgal
Potential to Emit (PTE) of SO2 =	0.007	tons/year

Methodology
Emission Factors are from AP 42 Table 1.3-1 (dated 5/2010)
Worst Case Emission of No. 6 Fuel Oil Vapors (kgal/year) = [Worst Case Emission of No. 6 Fuel Oil Vapors (lbs/hour)] * [8760 hours/year] * [kgal/1000 gallons] / [Density of No. 6 Fuel Oil (lbs/gal)]
Potential to Emit (PTE) of SO2 (tons/year) = [Worst Case Emission of No. 6 Fuel Oil Vapors (kgal/year)] * [SO2 Emission Factor (lb/kgal)] * [ton/2000 lbs]

3. Greenhouse Gases (GHGs) Emissions

Greenhouse Gases (GHGs)	Pollutant Emission Factor (lb/MMBtu)*			Potential to Emit (tons/year)		
Chemical Type	CO2	CH4	N2O	CO2	CH4	N2O
Organic Gases (List 1)	143.63	0.00661	0.00132	5143.22	0.237	0.047
High Vapor Pressure Liquid Organics (List 2)	149.34	0.00661	0.00132	1135.73	0.050	0.010
			Totals	**6278.95**	**0.29**	**0.06**
Summed Potential Emissions in tons/yr				6279.29		
CO2e Total in tons/yr				6302.78		

Methodology
*For Organic Gases, the CO2, CH4, and N2O emission factors are from 40 CFR Part 98, Subpart C, Table C-1 (for Butane) and Table C-2 (Petroleum)
For High Vapor Pressure Liquid Organics (List 2), the CO2, CH4, and N2O emission factors are from 40 CFR Part 98, Subpart C, Table C-1 (for Isobutylene) and Table C-2 (Petroleum)
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
Potential to Emit (tons/yr) = [VOC Captured/Combusted (MMBtu/year)] * [Emission Factor (lb/MMBtu)] * [ton/2,000 lbs]
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (310).

Abbreviations

PM = Particulate Matter	NOx = Nitrous Oxides	CO2 = Cabon Dioxide
PM10 = Particulate Matter (<10 um)	VOC - Volatile Organic Compounds	CH4 = Methane
SO2 = Sulfur Dioxide	CO = Carbon Monoxide	N2O = Nitrous Oxide
		CO2e = CO2 equivalent emissions

Appendix A: Emissions Calculations
Flare (FL-1) Emissions
Natural Gas Combustion Only
MM BTU/HR <100

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

					Pollutant Emission Factor (lb/MMcf)						
				Emission Unit	PM*	PM10*	PM2.5*	SO2	NOx**	VOC	CO
				Flare (FL-1)	1.9	7.6	7.6	0.6	100	5.5	84.0
Emission Unit	Number of Units	Unit Heat Input Capacity MMBtu/hr	Combined Total Heat Input Capacity MMBtu/hr	Potential Throughput MMcf/yr	Potential to Emit tons/yr						
					PM*	PM10*	PM2.5*	SO2	NOx**	VOC	CO
Flare (FL-1)	1	0.476	0.476	4.09	0.004	0.016	0.016	0.001	0.204	0.011	0.172

Pollutant	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Emission Factor (lb/MMcf)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
	Potential to Emit tons/yr									
Emission Unit	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Flare (FL-1)	4.3E-06	2.5E-06	1.5E-04	0.0037	6.9E-06	1.0E-06	2.2E-06	2.9E-06	7.8E-07	4.3E-06

Potential to Emit Total HAPs (tons/year)	**0.0039**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
Potential Throughput (MMcf) = Combined Total Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMcf/1,020 MMBtu
Potential to Emit (tons/yr) = Throughput (MMcf/yr) * Emission Factor (lb/MMcf) / 2,000 lb/ton
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu, MMcf = 1,000,000 Cubic Feet of Gas

Greenhouse Gases (GHGs)	Pollutant Emission Factor (lb/MMcf)			Potential to Emit (tons/year)		
Emission Unit	CO2	CH4	N2O	CO2	CH4	N2O
Flare (FL-1)	120000	2.3	2.2	245.28	0.00	0.00
Summed Potential Emissions in tons/yr				245.29		
CO2e Total in tons/yr				246.77		

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 cfR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMcf/yr) x Emission Factor (lb/MMcf)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (310).

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide
DCB = Dichlorobenzene
Pb = Lead
Cd = Cadmium
Cr = Chromium
Mn = Manganese
Ni = Nickel
CO2 = Cabon Dioxide
CH4 = Methane
N2O = Nitrous Oxide
CO2e = CO2 equivalent emissions

Appendix A: Emissions Calculations
Surface Coating and Solvents
Surface Coating: Tank Car Liner Installation

Company Name: BW Washington Car Shop
Source Address: 1723 W. Walnut St., Washington, IN 47501
Operation Permit No.: F027-29701-00006
Permit Reviewer: Nathan C. Bell

Potential Material Usage

Material	Primary Type of Surface Coated	Tank Car Area (ft2/car)	Material Coverage (ft2/gal)	Maximum Material Usage (gal/car)*	Production Capacity (cars/hr)**	Maximum Material Usage (gal/day)	Maximum Material Usage (gal/yr)
Carboline Plasite 3070 L (buff)	metal	1696	138	12.29	0.0962	28.37	10356.81
Cleanup Solvent (Methyl ethyl ketone)	n/a	-	-	0.75	0.0962	1.73	631.73

Potential to Emit (PTE) of Volatile Organic Compounds (VOC) and Particulate Matter (PM)

Material	Density (lbs/gal)	Weight % Volatile (H20 & Organics)	Weight % Water + Non-VOC	Weight % Organics	Weight % Solids	Volume % Water + Non-VOC	Volume % Organics	Volume % Solids	VOC Content (lbs/gal) Less Water	VOC Content (lbs/gal)	Transfer Efficiency	Control Efficiency	PTE of VOC (lb/hr)	PTE of VOC (lb/day)	PTE of VOC (tons/yr)	Uncontrolled PTE of PM/PM10/PM2.5 (lb/hr)	Uncontrolled PTE of PM/PM10/PM2.5 (tons/yr)	Controlled PTE of PM/PM10/PM2.5 (lb/hr)	Controlled PTE of PM/PM10/PM2.5 (tons/yr)
Carboline Plasite 3070 L (buff)	11.20	40.1%	17.6%	22.6%	59.9%	22.0%	36.4%	41.6%	3.24	2.53	75%	90%	2.99	71.66	13.08	1.98	8.69	0.20	0.87
Cleanup Solvent (Methyl ethyl ketone)	6.706	100.0%	0.0%	100%	0.0%	0.0%	100.0%	0.0%	6.71	6.71	100%	0%	0.48	11.61	2.12	0.00	0.00	0.00	0.00
											Totals		**3.47**	**83.27**	**15.20**	**1.98**	**8.69**	**0.20**	**0.87**

Potential to Emit (PTE) of Hazardous Air Pollutants (HAPs)

Material	Weight % Phenol	Weight % Formaldehyde	PTE of Phenol (tons/yr)	PTE of Formaldehyde (tons/yr)
Carboline Plasite 3070 L (buff)	5.00%	0.9%	2.90	0.52
Cleanup Solvent (Methyl ethyl ketone)	0.0%	0.0%	0.00	0.00
		Totals	**2.90**	**0.52**

PTE of Total HAPs (tons/year) = 3.42

Methodology

*Material usage provided by the source. For Carboline Plasite 3070 L (buff), Material Usage (gal/car) = [Tank Car Area (ft2/car)] / [Material Coverage (ft2/gal)]
**The poduction capacity is based on anticipated actual production of 200 cars/year during an actual operating time of 2080 hours/year, where [200 cars/year]/[2080 hours/year] = 0.0962 cars/hour
At 8760 hours per year, the annual production capacity is [0.0962 cars/hour] * [8760 hours/year] = 842.3 cars/year
Maximum Material Usage (gal/day) = [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [24 hours/day]
Maximum Material Usage (gal/yr) = [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [8760 hours/year]

Weight % Organics = [Weight % Volatiles (H20 & Organics)] - [Weight % Water + Non-VOC]
Weight % Solids = 1 - [Weight % Volatiles (H20 & Organics)]
VOC Content (lbs/gal) Less Water = [Density (lbs/gal)] * [Weight % Organics] / [1 - Volume % Water]
VOC Content (lbs/gal) = [Density (lb/gal)] * [Weight % Organics]

PTE of VOC (lbs/hr) = [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [Density (lbs/gal)] * [Weight % Organics]
PTE of VOC (lbs/day) = [PTE of VOC (lbs/hr)] * [(24 hrs/ day)]
PTE of VOC (tons/yr) = [PTE of VOC (lbs/day)] * [365 days/year] * [ton/2000 lbs]
PTE of HAP (tons/yr) = [Density (lbs/gal)] * [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [Weight % HAP] * [8760 hours/year] * [ton/2000 lbs]

Uncontrolled PTE of PM/PM10/PM2.5 (lbs/hr) = [Maximum Material Usage (gal/car)] * [Production Capacity (cars/hr)] * [Density (lbs/gal)] * [1 - Weight % Volatiles] * [1 - Transfer Efficiency]
Uncontrolled PTE of PM/PM10/PM2.5 (tons/yr) = [Uncontrolled PTE of PM/PM10/PM2.5 (lbs/hr)] * [8760 hrs/yr] * [ton/2000 lbs]
Controlled PTE of PM/PM10/PM2.5 (lbs/hr) = [Uncontrolled PTE of PM/PM10/PM2.5 (lbs/hr)] * [1 - Control Efficiency]
Controlled PTE of PM/PM10/PM2.5 (tons/yr) = [Controlled PTE of PM/PM10/PM2.5 (lbs/hr)] * [8760 hrs/yr] * [ton/2000 lbs]

Acronyms

PTE = Potential to Emit
VOC = Volatile Organic Compounds
HAP = Hazardous Air Pollutant
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
PM2.5 = Particulate Matter (<2.5 um)

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

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

					Pollutant Emission Factor (lb/MMcf)						
				Emission Unit	PM*	PM10*	PM2.5*	SO2	NOx**	VOC	CO
				Flare (FL-1)	1.9	7.6	7.6	0.6	100	5.5	84.0
				Curing Heater (H-1)	1.9	7.6	7.6	0.6	50	5.5	84.0
				Steam Boiler (B-1)	1.9	7.6	7.6	0.6	50	5.5	84.0
Emission Unit	Number of Units	Unit Heat Input Capacity MMBtu/hr	Combined Total Heat Input Capacity MMBtu/hr	Potential Throughput MMcf/yr	Potential to Emit tons/yr						
					PM*	PM10*	PM2.5*	SO2	NOx**	VOC	CO
Curing Heater (H-1)	1	4.00	4.00	34.35	0.033	0.131	0.131	0.010	0.859	0.094	1.443
Steam Boiler (B-1)	1	8.37	8.37	71.88	0.068	0.273	0.273	0.022	1.797	0.198	3.019
Totals	**2**		**12.37**	**106.24**	**0.10**	**0.40**	**0.40**	**0.03**	**2.66**	**0.29**	**4.46**

Pollutant	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Emission Factor (lb/MMcf)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
	Potential to Emit tons/yr									
Emission Unit	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Curing Heater (H-1)	3.6E-05	2.1E-05	1.3E-03	0.031	5.8E-05	8.6E-06	1.9E-05	2.4E-05	6.5E-06	3.6E-05
Steam Boiler (B-1)	7.5E-05	4.3E-05	2.7E-03	0.065	1.2E-04	1.8E-05	4.0E-05	5.0E-05	1.4E-05	7.5E-05
Totals	**1.1E-04**	**6.4E-05**	**4.0E-03**	**0.10**	**1.8E-04**	**2.7E-05**	**5.8E-05**	**7.4E-05**	**2.0E-05**	**1.1E-04**

Potential to Emit Total HAPs (tons/year)	**0.10**

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10
**Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32
The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology
Potential Throughput (MMcf) = Combined Total Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMcf/1,020 MMBtu
Potential to Emit (tons/yr) = Throughput (MMcf/yr) * Emission Factor (lb/MMcf) / 2,000 lb/ton
Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03
All emission factors are based on normal firing.
MMBtu = 1,000,000 Btu, MMcf = 1,000,000 Cubic Feet of Gas

Greenhouse Gases (GHGs)	Pollutant Emission Factor (lb/MMcf)			Potential to Emit (tons/year)		
Emission Unit	CO2	CH4	N2O	CO2	CH4	N2O
Curing Heater (H-1)	120000	2.3	0.64	6374.19	0.12	0.03
Steam Boiler (B-1)	120000	2.3	0.64	6374.19	0.12	0.03
			Totals	**12748.38**	**0.24**	**0.07**

Summed Potential Emissions in tons/yr	12748.69
CO2e Total in tons/yr	12774.59

Methodology
The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
Greenhouse Warming Potentials (GWP) from Table A-1 of 40 cfR Part 98 Subpart A.
Emission (tons/yr) = Throughput (MMcf/yr) x Emission Factor (lb/MMcf)/2,000 lb/ton
CO2e (tons/yr) = CO2 Potential Emission ton/yr x CO2 GWP (1) + CH4 Potential Emission ton/yr x CH4 GWP (21) + N2O Potential Emission ton/yr x N20 GWP (310).

Abbreviations
PM = Particulate Matter
PM10 = Particulate Matter (<10 um)
SO2 = Sulfur Dioxide
NOx = Nitrous Oxides
VOC - Volatile Organic Compounds
CO = Carbon Monoxide
DCB = Dichlorobenzene
Pb = Lead
Cd = Cadmium
Cr = Chromium
Mn = Manganese
Ni = Nickel
CO2 = Cabon Dioxide
CH4 = Methane
N2O = Nitrous Oxide
CO2e = CO2 equivalent emissions

Appendix A: Emission Calculations
Storage Tanks
Volatile Organic Compound (VOC)

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

Volatile Organic Compound (VOC) Emissions From Storage Tanks (Working and Breathing Losses) Using US EPA TANKS Version 4.09 program*

	Fuel Oil	Rinse Water	
Maximum Rail Tank Car Throughput for 10 Wash Stations =	43800	87600	cars/year**
Volume of Cleaning Liquid per Car =	50	500	gallons/car***
Maximum Annual Cleaning Liquid Throughput Rate =	2,190,000	43,800,000	gallons/year

Fuel Oil Storage Tanks

Storage Tank ID	Product Stored	Tank Type	Roof Type	Tank Dimensions	Maximum Liquid Volume (gallons)	Turnovers per year	Product Throughput (gallons/yr)	VOC Working Losses (lbs/yr)	VOC Breathing Losses (lbs/yr)	VOC Working Losses (tons/yr)	VOC Breathing Losses (tons/yr)
FO-1	Fuel Oil	Vertical	Fixed Cone	10.0 ft dia 15 ft height	3,422.0	639.98	2,190,000	9.75	1.34	0.005	0.0007
FO-2	Fuel OIl	Vertical	Fixed Cone	10.0 ft dia 15 ft height	3,422.0	639.98	2,190,000	9.75	1.34	0.005	0.0007
							Totals	**19.50**	**2.68**	**0.010**	**0.0013**

Total Potential to Emit VOC (lbs/yr) =	**22.18**
Total Potential to Emit VOC (tons/yr) =	**0.011**

Rinse Water Storage Tanks

Storage Tank ID	Product Stored	Tank Type	Roof Type	Tank Dimensions	Maximum Liquid Volume (gallons)	Turnovers per year	Product Throughput (gallons/yr)	VOC Working Losses (lbs/yr)	VOC Breathing Losses (lbs/yr)	VOC Working Losses (tons/yr)	VOC Breathing Losses (tons/yr)
R-1	Rinse Water	Vertical	Fixed Cone	8.0 ft dia 10 ft height	7,050	3106.29	21,900,000	Note: VOC emissions from the rinse tanks are included in the "Washing, Rinsing, and Drying" calculations for the Rail Tank Car Cleaning Operation (WS-1 through WS-10)			
R-2	Rinse Water	Vertical	Fixed Cone	8.0 ft dia 10 ft height	7,050	3106.29	21,900,000				

Methodology

*VOC emissions from storage tanks and tanker truck loading were determined by the source using US EPA TANKS Version 4.09 program.
**Maximum Rail Tank Car Throughput is based on the following:
- Fuel oil is only used for cleaning rail tank cars with lube oil residuals (a List 2 chemical). Therefore, the maximum thoughput corresponds to that of List 2 chemicals.
- Interior and exterior rinse water can be generated from rail tank cars that contain any of the List 1-5 chemicals. Therefore, the maximum throughput for List 1-5 chemicals is used.

***Volume of Cleaning Liquid per Car provided by source.
Maximum Annual Cleaning Liquid Throughput Rate (gallons/year) = [Maximum Rail Tank Car Throughput for 10 Wash Stations (cars/yr)] * [Volume of Cleaning Liquid per Car (gallons/car]
Turnovers per year is calculated as follows:
For the fuel oil storage tanks: Turnovers per year = [Maximum Annual Cleaning Liquid Throughput Rate (gallons/year)] / [Maximum Liquid Volume (gallons)]
For the rinse water storage tanks: Turnovers per year = [Maximum Annual Cleaning Liquid Throughput Rate (gallons/year)] / [Maximum Liquid Volume (gallons)] / 2
Product Throughput (gallons/yr) = [Maximum Liquid Volume (gallons)] * [Turnovers per year]

Acronyms

VOC = Volatile Organic Compound

Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads

Company Name: **BW Washington Car Shop**
Source Address: **1723 W. Walnut St., Washington, IN 47501**
Operation Permit No.: **F027-29701-00006**
Permit Reviewer: **Nathan C. Bell**

Unpaved Roads at Industrial Site
The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (11/2006).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Vehicle (entering plant) (one-way trip)	15.0	1.0	15.0	1.0	15.0	750	0.14	2.13	777.70
Vehicle (leaving plant) (one-way trip)	3.0	1.0	3.0	40.0	120.0	750	0.14	0.43	155.54
		Totals	**18.0**		**135.0**			**2.6**	**933.2**

Average Vehicle Weight Per Trip = 7.5 tons/trip
Average Miles Per Trip = 0.14 miles/trip

Unmitigated Emission Factor, Ef = k*[(s/12)^a]*[(W/3)^b] (Equation 1a from AP-42 13.2.2)

	PM	PM10	PM2.5	
where k =	4.9	1.5	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-1 Sand/Gravel Processing Plant)
a =	0.7	0.9	0.9	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)
W =	7.5	7.5	7.5	tons = average vehicle weight (provided by source)
b =	0.45	0.45	0.45	= constant (AP-42 Table 13.2.2-2 for Industrial Roads)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, Eext = E * [(365 - P)/365] (Equation 2 from AP-42 13.2.2)
Mitigated Emission Factor, Eext = E * [(365 - P)/365]
where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	PM2.5	
Unmitigated Emission Factor, Ef =	3.90	0.99	0.99	lb/mile
Mitigated Emission Factor, Eext =	2.56	0.65	0.65	lb/mile

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Vehicle (entering plant) (one-way trip)	1.52	0.39	0.39	1.00	0.25	0.25
Vehicle (leaving plant) (one-way trip)	0.30	0.08	0.08	0.20	0.05	0.05
Totals	**1.82**	**0.46**	**0.46**	**1.20**	**0.30**	**0.30**

Methodology

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

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

Indiana Department of Environmental Management
Office of Air Quality

Appendix B
WASHINGTON CAR SHOP - PRODUCT LISTS

Technical Support Document (TSD) for a Source Specific Operating Agreement (SSOA) Transitioning to a Federally Enforceable State Operating Permit (FESOP) with New Source Review (NSR)

The following tables summarize the residual materials that BW Washington Car Shop anticipates will be received by this source in rail tank cars and hopper rail cars. The materials that may be received by this source are not limited to the materials or Chemical Abstracts Service (CAS) Registry Numbers contained in the tables below. In addition, rail tank cars processed by this operation may contain mixtures of the materials contained in the tables below and/or other materials.

List 1 Materials - Pressurized Organic Gases	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
106-97-8	butane
8006-14-2	liquefied petroleum gas (LPG)
74-98-6	propane

List 2 Materials - High Vapor Pressure Liquid Organic Chemicals	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
111-27-3	1-hexanol
592-41-6	1-hexene
99-08-1	1-methyl 3-nitrobenzene
108-03-2	1-nitropropane
108-83-8	2,6-dimethyl 4-heptanone
591-78-6	2-hexanone
109-86-4	2-methoxyethanol
88-72-2	2-nitrotoluene
107-87-9	2-pentanone
123-42-2	4-hydoxy 4-methyl 2-pentanone
100-40-3	4-vinylcyclohexene
64-19-7	acetic acid
108-24-7	acetic anhydride
111-69-3	adiponitrile

List 2 Materials - High Vapor Pressure Liquid Organic Chemicals	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
62-53-3	aniline
64742-95-6	Aromatic 100
71-36-3	butanol
123-86-4	butyl acetate
141-32-2	butyl acrylate
76-22-2	camphor
8001-29-4	cottonseed oil
1319-77-3	cresol
8002-05-9	crude oil
98-82-8	cumene
110-82-7	cyclohexane
108-94-1	cyclohexanone
110-83-8	cyclohexene
108-91-8	cyclohexylamine
542-92-7	cyclopentadiene
77-73-0	dicyclopentadiene
68334-30-5, 68476-30-2, 68476-34-6, and 64742-46-7	diesel
96-22-0	diethyl ketone
111-40-0	diethylenetriamine
107-39-1	diisobutylene
108-18-9	diisopropylamine
68-12-2	dimethylforamide
123-19-3	dipropyl ketone
64-17-5	ethanol
141-43-5	ethanolamine
25013-15-4	ethenylmethyl benzene
68439-45-2, 104780-82-7, 71060-57-6, 71243-46-4, 68439-46-3, 97043-91-9, 66455-15-0, 68002-97-1, 66455-14-9, 68439-50-9, 68131-39-5, 68551-12-2, 68213-23-0, 68526-94-3, 68951-67-7, 68439-49-6	ethoxylated alcohol
100-41-4	ethyl benzene
106-35-4	ethyl butyl ketone
107-15-3	ethylenediamine
64-18-6	formic acid
77650-28-3	fuel oil
98-01-1	furfural
142-82-5	heptane
64742-52-5	hydrotreated heavy napthenic distillate
64742-47-8	hydrotreated light distillate
64742-46-7	hydrotreated middle distillates
64742-52-5	hydrotreated naphthenic distillate
123-51-3	isoamyl alcohol
110-19-0	isobutyl acetate

List 2 Materials - High Vapor Pressure Liquid Organic Chemicals	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
106-63-8	isobutyl acrylate
78-83-1	isobutyl alcohol
123-92-2	isopentyl acetate
67-63-0	isopropyl alcohol
94114-58-6	jet fuel
8002-20-6	kerosene
8012-95-1, 8020-83-5, 8042-47-5, 72623-84-8, 72623-86-0, 72623-87-1, 64741-88-4, 64741-89-5, 64742-54-7, 64742-55-8, 64742-56-9, and 64742-65-0	light lubricating oil
64741-50-0, 64741-51-1, 64741-52-2, 64741-53-3, 64741-76-0, 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64741-97-5, 64742-01-4, 64742-18-3, 64742-19-4, 64742-34-3, 64742-35-4, 64742-37-6, 64742-44-5, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-67-2, 64742-70-7, 64742-71-8, 72623-83-7, 72623-84-8, 72623-85-9, 72623-86-0, 72623-87-1, and 8042-47-5	lube oil
108-31-6	maleic anhydride
64742-88-7	medium aliphatic naphtha
108-44-1	meta-toluidine
108-38-3	meta-xylene
79-41-4	methacrylic acid
67-56-1	methanol
105-45-3	methyl acetoacetate
96-33-3	methyl acrylate
126-98-7	methyl acrylonitrile
110-49-6	methyl cellosolve acetate
108-87-2	methyl cyclohexane
110-12-3	methyl isoamyl ketone
141-79-7	methyl isobutenyl ketone
108-11-2	methyl isobutyl carbinol
110-43-0	methyl n-amyl ketone
8030-30-6	mineral spirits
110-91-8	morpholine
127-19-5	N, N-dimethylacetamide
8030-30-6	naphtha
98-95-3	nitrobenzene
79-24-3	nitroethane
111-65-9	n-octane
111-84-2	nonane
71-23-8	n-propanol
109-60-4	n-propyl acetate
627-13-4	n-propyl nitrate

List 2 Materials - High Vapor Pressure Liquid Organic Chemicals	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
95-53-4	ortho-toluidine
144-62-7	oxalic acid
106-49-0	para-toluidine
108-95-2	phenol
100-63-0	phenyl hydrazine
79-09-4	propionic acid
95-63-6	pseudo cumene
105-46-4	sec-butyl acetate
78-92-2	sec-butyl alcohol
108-84-9	sec-hexyl acetate
75-65-0	tert-butyl alcohol
78-10-4	tetraethyl ortho silicate
584-84-9	toluene diisocyanate
64742-53-6	transformer oil
121-44-8	triethylamine
25551-13-7	trimethyl benzene-mixed isomers
68956-68-3 and 8001-79-4	vegetable oils

List 3 Materials - Low Vapor Pressure Liquid Organic Chemicals	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
112-30-1	1-decanol
528-29-0	1,2-dinitrobenzene
100-25-4	1,4-dinitrobenzene
112-53-8	1-dodecanol
96-76-4	2,4-Di-tert-butylphenol
128-37-0	2,6-Di-tert-butyl-p-cresol
104-76-7	2-ethyl hexanol
988-60-2	acetophenone
124-04-9	adipic acid
8052-42-4	asphalt
65-85-0	benzoic acid
140-11-4	benzyl acetate
28805-86-9	butyl phenol
68855-24-3	C14-C30 alkylbezenes
105-60-2	caprolactam
8001-31-8	coconut oil
108-93-0	cyclohexanol
111-42-2	diethanolamine

List 3 Materials - Low Vapor Pressure Liquid Organic Chemicals	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
131-11-3	dimethyl phthalate
122-39-4	diphenylamine
103-11-7	ethyl hexyl acrylate
27247-96-7	ethyl hexyl nitrate
107-21-1	ethylene glycol
75-12-7	formamide
56-81-5	glycerin
64742-65-0	heavy paraffinic distillates
124-09-4	hexamethylenediamine
64742-54-7	hydrotreated paraffinic distillate
26952-21-6	isooctyl alcohol
99-65-0	m-dinitrobenzene
101-68-8	methylene diphenyl diisocyanate
91-20-3	naphthalene
25154-52-3	nonylphenol
15511-81-6	nylon salt solution
140-66-9	octyl phenol, p-tert
85-44-9	phthalic anhydride
88-89-1	picric acid
1761-71-3, 52314-58-6, 69868-18-4, 6864-37-5, 85586-54-5, 85586-56-7, 93805-51-7, and 90850-42-3	polycycloaliphatic amines
9003-53-6	polystyrene
25332-68-3	polyethylene glycol
57-55-6	propylene glycol
99-71-8	p-sec-butylphenol
108-46-3	resorcinol
57-11-4	stearic acid
68608-26-4	sulfonated petroleum salts
8002-26-4	tall oil
61789-97-7	tallow
95-80-7	toluene diamine
102-71-6	triethanolamine

List 4 Materials - Inorganic Chemical Solutions/Slurries	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
7446-70-0	aluminum chloride solution
1344-28-1	aluminum oxide slurry
10043-01-3	aluminum sulfate solution
7803-63-6	ammonium bisulfate solution

List 4 Materials - Inorganic Chemical Solutions/Slurries	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
7722-76-1	ammonium phosphate solution
7783-20-2	ammonium sulfate solution
7783-18-8	ammonium thiosulfate solution
10043-35-3	boric acid solution
7789-41-5	calcium bromide solution
10043-52-4	calcium chloride
10124-37-5	calcium nitrate solution
1305-78-8	calcium oxide
1310-73-2	caustic soda
none available	clay slurry
7447-39-4	cupric chloride solution
7758-89-6 and 12125-02-9	cuprous ammonium chloride solution
10028-22-5	ferric sulfate
15244-10-7	ferric sulfate solution
7758-94-3	ferrous chloride solution
1305-78-8 and 1305-62-0	lime slurry
1317-65-3	limestone slurry
7447-41-8	lithium chloride slurry
7786-30-3	magnesium chloride solution
1309-42-8	magnesium hydroxide solution
7785-87-7	manganese sulfate solution
7664-38-2	phosphoric acid
7778-53-2	potassium phosphate solution
10294-66-3	potassium thiosulfate solution
497-19-8	soda ash solution
144-55-8	sodium bicarbonate solution
7631-90-5	sodium bisulfite solution
497-19-8	sodium carbonate solution
7647-14-5	sodium chloride solution
16721-80-5	sodium hydrosulfide
1310-73-2	sodium hydroxide solution
7631-99-4	sodium nitrate solution
18662-53-8	sodium nitrilotriacetate
16721-80-5	sodium sulfide
7772-98-7	sodium thiosulfate solution
7664-93-9	sulfuric acid
7704-34-9	sulphur
7646-85-7	zinc chloride solution
7733-02-0	zinc sulfate solution

List 5 Materials - Liquid or Semi-Solid Food Grade Products	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
none available	A-1 Sauce
none available	apple concentrate
none available	apricot puree
8029-31-0	beer
8029-34-3	butter
none available	caramel
8012-99-5	cherry juice
none available	chestnut extract
none available	chocolate
8002-31-1	cocoa butter
8001-31-8	coconut oil
8001-69-2	cod liver oil
none available	cohune nut oil
8001-30-7	corn oil
50-99-7	corn sugar solution
8029-43-4	corn syrup
8001-29-4	cotton-seed oil
none available	cranberry juice
none available	cucumber brine solution
8001-69-2	fish liver oil
8016-13-5	fish oil
none available	grape juice
8028-66-8	honey
61789-99-9	lard
68916-88-1	lemon juice
none available	lime juice
8002-48-0	malt syrup
8029-82-1	margarine oil
8049-98-7	milk
none available	mixed fruit juices
8001-25-0	olive oils
none available	orange juice
8023-79-8	palm nut oil
none available	peanut butter
8002-03-7	peanut oil
8028-52-2	pickle brine
none available	prune juice
8001-23-8	safflower seed oil
none available	salad oil
none available	sardine oil
50-21-5	sauerkraut juice
none available	semolina
8008-74-0	sesame oil

List 5 Materials - Liquid or Semi-Solid Food Grade Products	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
none available	shortening soya sauce
none available	soya-bean oil
8001-22-7	soybean oil
50-99-7	sugar solution
8001-21-6	sunflower oil
none available	tomato paste
none available	tuna fish oil
68956-68-3 and 8001-79-4	vegetable oils
8028-52-2	vinegar
8024-09-7	walnut oil
68917-73-7	wheat germ oil
none available	wine

List 6 Materials - Residual Solid Materials	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
7440-44-0	activated charcoal
7446-70-0	aluminum chloride
7783-20-2	ammonium sulfate
8052-42-4	asphalt
1318-16-7	bauxite
1303-96-4	borax
none available	brewer's grit
7778-18-9, 10034-76-1, and 10101-41-4	calcium sulfate hydrate
1333-86-4	carbon black
65997-15-1	cement
none available	ceramics
none available	clays
125612-26-2	coal
68131-74-8	coal bottom ash
68131-74-8	coal fly ash
65996-77-2	coke
24937-78-8	ELVACE (ethylene vinyl acetate copolymer)
none available	grain
none available	grain hulls
none available	gravel
21645-51-2	hydrated aluminas
1305-78-8	lime
1317-65-3	limestone
1309-42-8	magnesium hydroxide

List 6 Materials - Residual Solid Materials	
Chemical Abstracts Service (CAS) Registry Number(s)	**Chemical/Material Name**
none available	phosphate fertilizers
none available	plastic pellets
9003-07-0	polypropylene
none available	rice
none available	roofing granules
14808-60-7	sand
7631-86-9 and 14808-60-7	silica
497-19-8	soda ash
11138-49-1 and 1302-42-7	sodium aluminate
7681-38-1	sodium bisulfate
1303-96-4	sodium borate
7647-14-5	sodium chloride
1344-09-8	sodium silicate
7757-82-6	sodium sulfate
none available	soy beans
7704-34-9 and 57-13-6	sulfur coated urea
7704-34-9	sulphur
14807-96-6	talc
13463-67-7	titanium dioxide
none available	wheat
1318-02-1	zeolite
7733-02-0	zinc sulfate

Indiana Department of Environmental Management
Office of Air Quality

Appendix C
Best Available Control Technology (BACT) Determination

Technical Support Document (TSD) for a Source Specific Operating Agreement (SSOA) Transitioning to a Federally Enforceable State Operating Permit (FESOP) with New Source Review (NSR)

Source Background and Description

Source Name:	**BW Washington Car Shop**
Source Location:	**1723 W. Walnut Street, Washington, IN 47501**
County:	**Daviess County**
SIC Code:	**4789 (Transportation Services, Not Elsewhere Classified)**
Operation Permit No.:	**F027-29701-00006**
Permit Reviewer:	**Nathan C. Bell**

On September 21, 2010, the Office of Air Quality (OAQ) received an application from BW Washington Car Shop related to the construction and operation of new emission units at an existing stationary rail car refurbishing operation (sandblasting, repairing, and painting) and transition from a SSOA to a FESOP with NSR.

The Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) has performed the below Best Available Control Technology (BACT) review for the following new emission units:

Note: the emission unit list numbering for this cleaning operation corresponds to the numbering of the operation in the TSD.

(d) One (1) rail tank car cleaning operation, approved for construction in 2011, located in Building #3, consisting of ten (10) wash stations, identified as WS-1 through WS-10, for cleaning of the exterior and interior of rail cars, with residual materials removed from rail tank cars as follows:

(1) When cleaning rail cars containing pressurized organic gases, each wash station has a maximum throughput of 0.17 rail cars per hour. Residual pressurized organic gases are removed by rail car depressurization, followed by rail car purging/degassing with nitrogen gas, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Any residual organic gases in the rail tank car after purging/degassing are exhausted through the general ventilation vent CL-1;

(2) When cleaning rail cars containing high vapor pressure liquid organic chemicals, each wash station has a maximum throughput of 0.5 rail cars per hour. Residual high vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1. For rail tank cars with lube oil residuals, after the lube oil is drained and collected, clean fuel oil from storage tank FO-1 is used to rinse the tank car, and the used rinse oil is drained from the tank car and stored in storage tank FO-2 until being sent off-site for disposal, with both storage tanks

exhausting through the general ventilation vent CL-2. Following the fuel oil rinse, residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, with volatile organic compound emissions controlled by a flare FL-1, exhausting through stack FL-1. Residual fuel oil in the rail tank car is removed with mild detergent washes, with the rinse water treated as indicated below under item (6). The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(3) When cleaning rail cars containing low vapor pressure liquid organic chemicals, each wash station has a maximum throughput of one (1) rail car per hour. Residual low vapor pressure liquid organic chemicals are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, with residual organic liquids in the rail tank car removed with mild detergent washes, with any residual organic vapors in the rail tank car purged with nitrogen gas, air, or steam, and with volatile organic compound emissions exhausted through the general ventilation vent CL-1. The rail tank car is then rinsed with water and dried with air, with any residual organic vapors in the rail tank car exhausted through the general ventilation vent CL-1;

(4) When cleaning rail cars containing inorganic chemical solutions/slurries, each wash station has a maximum throughput of one (1) rail car per hour. Residual inorganic chemical solutions/slurries are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(5) When cleaning rail cars containing liquid or semi-solid food grade products, each wash station has a maximum throughput of one (1) rail car per hour. Residual food grade products are drained (maximum of 20 gallons) and collected in a drum and sent off-site for re-use or disposal, the rail tank car is rinsed with mild detergent washes and water, purged with nitrogen gas, air, or steam, and then dried with air, exhausting through the general ventilation vent CL-1;

(6) wash and rinse waters (approximately 500 gallons per car) generated at the wash stations are drained from the rail tank cars to a wash pad and collected in a sump system, identified as S-1, where the wash and rinse waters may be treated to adjust pH and/or to remove oil and grease using a dissolved air flotation unit prior to being stored in two (2) rinse tanks, identified as R-1 and R-2, exhausting through the general ventilation vent CL-2. The wash and rinse waters and any oil and grease sludge collected are then sent off-site for disposal; and

(7) One (1) natural gas-assisted enclosed flare, identified as FL-1, equipped with a natural gas-fired pilot that operates at a maximum heat input capacity of 0.476 MMBtu/hr, and controlling VOC emissions at a maximum heat input capacity of 84 MMBtu/hr, exhausting through stack FL-1.

Note: As part of this BACT review, the natural gas-assisted enclosed flare (FL-1) referenced in the emission unit description above is evaluated as a potentially available control technology for controlling VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation.

Note: Each of the ten (10) wash stations can clean rail tank cars containing any of the above listed chemicals or products and their combinations.

Emission Calculations

See Appendix A – Emission Calculations – of this TSD for detailed Potential to Emit (PTE) calculations.

The below table summarizes the worst case volatile organic compounds (VOC) uncontrolled emission factors for each type of chemical/material cleaned out of the rail tank cars in each of the rail tank car cleaning operation wash stations.

Table 1. Worst Case VOC Uncontrolled Emission Factor for Each Wash Station (pounds of VOC per rail tank car)

Chemical/Material Type	Rail Tank Car Cleaning Operation Phases		
	Depressurizing	Purging/ Degassing	Venting, Washing, Rinsing, and Drying
Organic Gases	1083.06	632.42	4.42
High Vapor Pressure Liquid Organics	NA*	376.71	0.13
Low Vapor Pressure Liquid Organics	NA*	NA*	1.38
Liquid Inorganics	NA*	NA*	0.0
Liquid Food Grade Products	NA*	NA*	0.0

*NA = Not Applicable, based on the following:
1. The source will not perform depressurization for high vapor pressure liquid organics.
2. The source will not perform depressurization or purging/degassing for low vapor pressure liquid organics, liquid organics, or liquid food grade products.

The below table summarizes the worst case uncontrolled potential to emit (PTE) volatile organic compounds (VOCs) for each of the rail tank car cleaning operation wash stations, assuming that only organic gases are processed by each of the wash stations at 8760 hours per year.

Table 2. Worst Case Uncontrolled PTE of VOC (tons/year)

Wash Station ID	Rail Tank Car Cleaning Operation Phases*			Total
	Depressurizing	Purging/ Degassing	Venting, Washing, Rinsing, and Drying	
WS-1	790.6	461.7	3.2	1255.5
WS-2	790.6	461.7	3.2	1255.5
WS-3	790.6	461.7	3.2	1255.5
WS-4	790.6	461.7	3.2	1255.5
WS-5	790.6	461.7	3.2	1255.5
WS-6	790.6	461.7	3.2	1255.5
WS-7	790.6	461.7	3.2	1255.5
WS-8	790.6	461.7	3.2	1255.5
WS-9	790.6	461.7	3.2	1255.5
WS-10	790.6	461.7	3.2	1255.5
Totals	**7,906.3**	**4,616.7**	**32.2**	**12,555.2**

* These phases can all occur (not simultaneously) in a rail tank car when cleaning organic gases (which is considered worst case scenario.

Requirement for VOC BACT

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), BACT is required for all facilities constructed after January 1, 1980 that have potential VOC emissions of equal to or greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8. Based on the calculations (see Emission Calculations section above) and the analysis of applicable state regulations (see State Rule Applicability section of TSD), each of the wash stations (WS-1 through WS-10) associated with the rail tank car cleaning operation is subject to the requirements of 326 IAC 8-1-6, since they each have potential VOC emissions of greater than twenty-five (25) tons per year and are not regulated by other rules in 326 IAC 8. Therefore, the Permittee is required to control VOC emissions from each of the wash stations pursuant to the provisions of 326 IAC 8-1-6 (BACT).

Summary of the Best Available Control Technology (BACT) Process

BACT is a mass emission limitation based on the maximum degree of reduction for each regulated NSR pollutant emitted that is achievable on a case-by-case basis. The BACT evaluation process considers the application of available control options, including control technologies, the use of lower-emitting materials/processes and work practices, and operational limitations, and takes into account the energy, environmental, and economic impacts of the control options on the source.

Federal guidance on BACT requires an evaluation that follows a “top down” process, consisting of five (5) steps. The Office of Air Quality (OAQ) makes BACT determinations by following the five (5) steps as outlined below.

Step 1: Identify Potential Control Options

The first step is to identify potentially “available” control options for each emission unit and for each pollutant under review. Available control options should consist of control technologies with a potentially practical application to the emissions unit in question, including lowest achievable emission rate (LAER) technologies and controls applied to similar source categories. Available control options may also include lower-emitting materials/processes and work practices, and operational limitations. Although innovative technologies may be included as a potentially available control option, there is no requirement in the State or Federal regulations to require innovative control to be evaluated in Step 1 or used as BACT.

Step 2: Eliminate Technically Infeasible Options

The second step is to eliminate technically infeasible options from further consideration. To be considered feasible, a technology must be both available and applicable. It is important in this step that any presentation of a technical argument for eliminating a technology from further consideration be clearly documented based on physical, chemical, engineering, and source-specific factors related to safe and successful use of the controls. Innovative control means a control that has not been demonstrated in a commercial application on similar units. Innovative control technology is projected to have equivalent or better emission reductions to the best available control technology. The source has not requested to use an innovative control technology; therefore, the OAQ will not evaluate or require any innovative controls for this BACT analysis. Innovative controls are normally given a waiver from the BACT requirements due to the uncertainty of actual control efficiency. Based on this, the OAQ will not evaluate or require any innovative controls for this BACT analysis. Only available and proven control technologies are evaluated. A control technology is considered available when there are sufficient data indicating that the technology results in a reduction in emissions of regulated pollutants.

Step 3: Rank the Remaining Control Options by Control Effectiveness

The third step is to rank the control options not eliminated in Step 2 in order of descending control effectiveness for each pollutant of concern. If the top option is selected as BACT and there are no significant environmental impacts, then the BACT Review ends with selection of the top option as BACT. The ranked alternatives are reviewed in terms of environmental, energy, and economic impacts specific to the proposed modification. If the analysis determines that the evaluated alternative is not appropriate as BACT due to any of the impacts, then the next most effective is evaluated. This process is repeated until a control alternative is chosen as BACT. If the highest ranked technology is proposed as BACT, it is not necessary to perform any further technical or economic evaluation, except for the environmental analyses.

Step 4: Evaluate the Most Effective Controls and Document the Results

The fourth step entails an evaluation of energy, environmental, and economic impacts for determining a final level of control. If the top option is selected as BACT and there are no significant environmental impacts, then the BACT Review ends with selection of the top option as BACT. The evaluation begins with the most stringent control option and continues until a technology under consideration cannot be eliminated based on adverse energy, environmental, or economic impacts.

Step 5: Select BACT

The fifth and final step is to select as BACT the most effective of the remaining technologies under consideration for each pollutant of concern. For the technologies determined to be feasible, there may be several different limits that have been set as BACT for the same control technology. The permitting agency has to choose the most stringent limit as BACT unless the applicant demonstrates in a convincing manner why that limit is not feasible. The final BACT determination would be the technology with the most stringent corresponding limit that is economically feasible. BACT must, at a minimum, be no less stringent than the level of control required by any applicable New Source Performance Standard (NSPS) and National Emissions Standard for Hazardous Air Pollutants (NESHAP) or state regulatory standards applicable to the emission units included in the permits.

This BACT determination is based on the following information:

(1) The BACT analysis information submitted by BW Washington Car Shop on September 21, 2010.

(2) The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database search results based on the following criteria:

(A) SIC Code 4789 (railroad car repair);
(B) NAICS Code 488210 (freight car cleaning services; locomotive and rail car repair);
(C) SIC Code 4953 (refuse systems);
(D) Process Type Code 21.900 (Mixed/Other Waste Combustion/Incineration);
(E) Process Type Code 29.900 (Other Waste Processing & Disposal Processes)
(E) Process Type Code 49.999 (Other Organic Evaporative Loss Sources)
(F) Process Type Code 64.999 (Other SOCMI Processes); and

(3) EPA air pollution control training documents, guidance documents, and other reports, including, but not limited to the following:

(A) Clean Air Technology Center (CATC) Technical Bulletins (TB) and Air Pollution Technology Fact Sheets (FS). These documents are currently located on the internet at: http://www.epa.gov/ttn/catc/products.html

(B) EPA Air Pollution Control Cost Manual, Sixth Edition, EPA-452-B-02-001, January 2002, United States Environmental Protection Agency. This document is currently located on the internet at: http://www.epa.gov/ttn/catc/dir1/c_allchs.pdf

(C) Air Pollution Training Institute (APTI) Online Course entitled: Basic Concepts in Environmental Sciences, Module 6: Air Pollutants and Control Techniques, Volatile Organic Compounds, Control Techniques. This information is currently located on the internet at: http://www.epa.gov/apti/bces/module6/voc/control/control.htm

(D) Sources and Control of Volatile Organic Air Pollutants, Student Manual, Air Pollution Training Institute (APTI) Course 482, Third Edition, November 2002, United States Environmental Protection Agency. This training course is available on the internet at: http://www.epa.gov/apti/index.html; and

(E) Flare Efficiency Study, EPA-600/2-83-052, United States Environmental Protection Agency, July 1983. This document is currently located on the internet at: http://www.epa.gov/ttn/chief/ap42/ch13/related/ref_01c13s05_jan1995.pdf

(4) Indiana Department of Environmental Management (IDEM) air quality permits under SIC Codes 4789 (railroad car repair) and 4953 (refuse systems).

VOC BACT Analysis

Step 1 – Identify Potential Control Options

Based on the information reviewed for this BACT determination, the following potentially available control technologies were identified for controlling VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation:

(a) Thermal Oxidizer:

Thermal oxidation is the process of oxidizing VOC in a waste gas stream by raising the temperature above the VOC's autoignition point in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The residence time, temperature, flow velocity and mixing, and the oxygen concentration in the combustion chamber affect the oxidation rate and destruction efficiency. Thermal oxidizers operating costs are relatively high, since they typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. In general, thermal oxidizers are less efficient at treating waste gas streams with highly variable flowrates, since the variable flowrate results in varying residence times, combustion chamber temperature, and poor mixing. In addition, thermal oxidizers are also not generally cost-effective for low-concentration, high-flow organic vapor streams.

Thermal oxidizers can achieve 95-99.99+% VOC control efficiency and can be used over a wide range of organic vapor concentrations, but perform best at inlet concentrations of around 1,500-3,000 ppmv. Thermal oxidizers are typically designed to have a residence time of 0.3 to 1.0 second and combustion chamber temperatures between 1,200 and 2,000°F. In order to meet 98% or greater control or a 20 parts per million by volume (ppmv) compound exit concentration of non-halogenated organics, thermal oxidizers should typically be operated at a residence time of at least 0.75 seconds, a combustion chamber temperature of at least 1600°F, and with proper mixing. While thermal oxidation provides efficient VOC control, other pollutants such as nitrogen oxides and carbon monoxide are formed from the combustion process.

Thermal oxidizers are not generally recommended for controlling gases containing halogen- or sulfur-containing compounds, because of the formation of hydrogen chloride, hydrogen fluoride gas, sulfur dioxide, and other highly corrosive acid gases. It may be necessary to install a post-oxidation acid gas treatment system in such cases, depending on the outlet concentration. This would likely make incineration an uneconomical option. For halogenated VOC streams, a combustion temperature of 2000°F, a residence time of 1.0 second, and use of an acid gas scrubber on the outlet is recommended.

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

(1) Direct Flame Thermal Oxidizer

A direct flame thermal oxidizer is comprised of a combustion chamber and does not include any heat recovery of exhaust air by a heat exchanger.

(2) Recuperative Thermal Oxidizer

A recuperative thermal oxidizer is comprised of the combustion chamber, a heat exchanger for preheating the untreated VOC gas stream, and, if cost-effective, a secondary energy recovery heat exchanger. In a recuperative thermal oxidizer, the untreated VOC gas stream entering the oxidizer is preheated using the heat content of the treated gas stream exiting the oxidizer using a heat exchanger, resulting in improved oxidizer efficiency and reduced auxiliary fuel usage. Recuperative thermal oxidizers usually are more economical than direct flame thermal oxidizers because they typically recover 40 to 70% of the waste heat from the exhaust gases.

(3) Regenerative Thermal Oxidizer

A regenerative thermal oxidizer typically consists of a set of 2 or 3 packed ceramic beds that are used to recover heat from hot combustion gases that are generated during combustion of the VOC gas stream and auxiliary fuel, resulting in improved oxidizer efficiency and reduced auxiliary fuel usage. An "inlet" bed is used to pre-heat the untreated VOC gas stream, an "outlet" bed is used to recover heat from the treated gas stream, and one bed is in a purge cycle. The purge cycle is needed to prevent emission spikes each time the gas flow is redirected. The oxidizer is operated on a rotating schedule, where the gas flow through the ceramic beds is redirected periodically using a set of gas flow dampers. Once the heat energy of the "inlet" ceramic bed has been depleted, the flow through the system is redirected so that the untreated VOC gas stream entering the oxidizer is directed through the previously heated "outlet" ceramic bed. Regenerative thermal oxidizers have much higher heat recovery efficiencies than recuperative thermal oxidizers, recovering 85 to 95% of the heat from the treated gas stream, and therefore have lower auxiliary fuel requirements. However, compared to direct flame and recuperative thermal oxidizers, regenerative thermal oxidizers typically have higher capital (equipment and installation) costs, are larger and heavier, and have higher maintenance costs.

No information was found regarding typical VOC destruction efficiency for a thermal oxidizer controlling VOC emissions from a rail tank car cleaning operation similar to this source.

(b) Flare:

Flaring is the process of oxidizing VOC in a waste gas stream by piping the waste gas to a remote, usually elevated location and burning it in a flame using a specially designed burner tip, auxiliary fuel, and steam or air to promote mixing. Flares are generally categorized in two ways: (1) by the height of the flare tip (i.e., ground or elevated), and (2) by the method of enhancing

mixing at the flare tip (i.e., steam-assisted, air-assisted, pressure-assisted, or non-assisted). Flares can be used to control almost any VOC stream, and can typically handle large fluctuations in VOC concentration, flow rate, heating value, and inert species content. Flaring is appropriate for continuous, batch, and variable flow vent stream applications, but the primary use is that of a safety device used to control a large volume of pollutant resulting from upset conditions. Flares have primarily been used in petroleum production, petroleum refineries, and chemical plants to control waste gas streams containing low molecular weight VOC with high heating values.

A properly operated flare can achieve 98+% VOC control efficiency when controlling emission streams with heat contents greater than 300 British thermal units per standard cubic foot (Btu/scf). If the waste gas stream has a heat content less than 300 Btu/scf, auxiliary fuel must be introduced in sufficient quantity to make up the difference. The VOC destruction efficiency of a flare depends upon the waste gas characteristics (density, flammability, heating value, and VOC component autoignition temperatures) and the combustion zone conditions (temperature, residence time, mixing, and available oxygen). While flares can provide efficient VOC control, other pollutants such as nitrogen oxides (NOx) and carbon monoxide (CO) are formed from the combustion process. Flares are not generally recommended for controlling gases containing halogen- or sulfur-containing compounds, because of the formation of hydrogen chloride, hydrogen fluoride gas, sulfur dioxide, and other highly corrosive acid gases.

No information was found regarding typical VOC destruction efficiency for a flare controlling VOC emissions from a rail tank car cleaning operation similar to this source.

(c) Catalytic Oxidizer:

Catalytic oxidation is the process of oxidizing organic contaminants in a waste gas stream within a heated chamber containing a catalyst bed in the presence of oxygen for sufficient time to completely oxidize the organic contaminants to carbon dioxide and water. The catalyst is used to lower the activation energy of the oxidation reaction, enabling the oxidation to occur at lower reaction temperatures compared to thermal oxidizers. The residence time, temperature, flow velocity and mixing, the oxygen concentration, and type of catalyst used in the combustion chamber affect the oxidation rate and destruction efficiency. Catalytic oxidizers typically require combustion of an auxiliary fuel (e.g., natural gas) to maintain combustion chamber temperature high enough to completely oxidize the contaminant gases. Catalytic oxidizers operate at lower temperatures and require less fuel than thermal oxidizers, they have a smaller footprint, and they need little or no insulation. The catalyst bed is usually composed of the following: (1) the substrate, typically ceramic or metal honeycombs, grids, mesh pads, or beads; (2) the carrier, a high surface area inorganic material such as alumina that is bonded to the substrate that contains a complex pore structure; and (3) the catalyst, a thin layer of material deposited onto the carrier. The most widely used catalysts for VOC oxidation are noble metals, such as platinum, palladium and rhodium or mixtures thereof. Base metal catalysts, such as oxides of chromium, cobalt, copper, manganese, titanium, and vanadium may also be used for VOC oxidation. Similar to thermal oxidizers, catalytic oxidizers may use regenerative or recuperative heat recovery to reduce auxiliary fuel requirements, where the untreated VOC gas stream entering the catalytic oxidizer is preheated using the heat content of the treated gas stream exiting the catalytic oxidizer.

Catalytic oxidizers can achieve 90-99% VOC control efficiency, depending on the oxidizer design and waste stream characteristics. Catalytic oxidizers are typically designed to have a residence time of 0.5 seconds or less and combustion chamber temperatures between 600 and 1,200°F. Catalytic oxidation is most suited to waste gas streams with little variation in the flow rate and type and concentration of VOC to be treated. In addition, catalytic oxidizers should not be used for waste gas streams that have a high concentration of particles, silicone, sulfur, halogen compounds, and/or heavy hydrocarbons that can cause fouling or masking of the catalyst, and for waste gas streams that contain metals such as mercury, phosphorus, arsenic, antimony, bismuth, lead, zinc, and/or tin that can cause catalyst poisoning.

No information was found regarding typical VOC destruction efficiency for a catalytic oxidizer controlling VOC emissions from a rail tank car cleaning operation similar to this source.

(e) Carbon Adsorption Unit:

Carbon adsorption is a process where VOCs are removed from a waste gas stream when it is passed through a bed containing activated carbon particles, which have a highly porous structure with a large surface-to-volume ratio. Carbon adsorption systems usually operate in two phases: adsorption and desorption. During adsorption, the majority of the VOC molecules migrate from the gas stream to the surface of the activated carbon (through the activated carbon pores) where it is lightly held to the surface by weak intermolecular forces known as van der Waals' forces. As the activated carbon bed approaches saturation with VOC, its control efficiency drops, and the bed must be taken offline to be replaced or regenerated. Typically, two activated carbon beds are utilized on a rotating schedule, where a second bed (containing fresh or previously regenerated activated carbon) is brought online to continue controlling the VOC gas stream while the first bed is being replaced or regenerated. In regenerative systems, most VOC gases can be desorbed and removed from the activated carbon bed by heating the bed to a sufficiently high temperature, usually via steam or hot air, or by reducing the pressure within the bed to a sufficiently low value (vacuum desorption). The regenerated activated carbon can be reused and the VOCs that are removed from the bed can be reclaimed or destroyed.

Carbon adsorber size and purchase cost depend primarily on the gas stream volumetric flow rate, temperature, pressure, VOC composition, VOC mass loading, and moisture and particulate contents. The adsorptive capacity of an activated carbon bed for a VOC gas tends to increase with the VOC gas phase concentration, molecular weight, diffusivity, polarity, and boiling point. Carbon adsorption systems can be used for VOC gas concentrations from less than 10 ppm to approximately 10,000 ppm. Carbon adsorption systems (in general) are usually limited to waste gas streams with VOC compounds having a molecular weight of more than 50 and less than approximately 200 lb/lb-mole, since low molecular weight organics usually do not adsorb sufficiently and high molecular weight compounds are difficult to desorb and remove during the desorption cycle. Industrial applications of adsorption systems include control for dry cleaning, degreasing, paint spraying, solvent extraction, metal foil coating, paper coating, plastic film coating, printing, pharmaceuticals, rubber, linoleum, and transparent wrapping.

Carbon adsorption systems can achieve 95-99% VOC control efficiency. Carbon adsorption system control efficiency increases with reduced VOC gas stream temperatures. Therefore, high temperature VOC gas streams are typically cooled prior to entry into the activated carbon bed. Particulate matter and high moisture concentrations present in the gas stream compete with the VOC for pore space within the activated carbon and thereby reduce the VOC adsorptive capacity and control efficiency of the carbon adsorption systems. In addition, particulate matter and moisture can become entrained within the carbon bed, causing operating problems such as increased pressure drop across the bed.

No information was found regarding typical VOC destruction efficiency for a carbon adsorption unit controlling VOC emissions from a rail tank car cleaning operation similar to this source.

(f) Condensation Unit:

Condensation is the separation of VOCs from an emission stream through a phase change, by either increasing the system pressure or, more commonly, lowering the system temperature below the dew point of the VOC vapor. Three types of condensers are used for air pollution Controls: (1) conventional non-refrigeration systems (such as cold-water direct contact condensers similar to wet scrubbers and cold-water indirect heat exchangers); (2) refrigeration systems (including mechanical compression refrigeration using chlorofluorocarbons (CFCs) and hydrofluorocarbons (HFCs) and Reverse Brayton Cycle refrigeration); and (3) cryogenic systems that utilize liquid nitrogen (including direct contact condensers and indirect heat exchangers).

Condensation units control VOC more efficiently when they are used for gas streams containing high concentrations of VOC and with low exhaust volumes. Condensation units are typically utilized at sources where there is a significant cost benefit to recovering the organic liquid for reuse, where the recovered organic liquids do not contain multiple organic compounds or water that require separation, and where the heat content of gas stream will not overload the refrigeration system. In addition, condensation units are typically used only on gas streams that have little or no particulate contamination, which can cause fouling within the condensation equipment and reduced heat transfer efficiency. Some industrial applications where refrigerated condensers are used include the dry cleaning industry, degreasers using VOC or halogenated solvents, transfer of volatile organic liquid or petroleum products, and vapors from storage vessels.

Cold-water (non-refrigeration) condensation systems can achieve 90-99% VOC control efficiency, depending on the vapor pressures of the specific compounds. Condensation units using mechanical compression refrigeration (using CFC or HFC) can achieve 90+% VOC control efficiency, condensation units using Reverse Brayton Cycle refrigeration can achieve 98% VOC control efficiency, and condensation units using cryogenic (liquid nitrogen) cooling can achieve 99+% VOC control efficiency.

No information was found regarding typical VOC destruction efficiency for a condensation unit controlling VOC emissions from a rail tank car cleaning operation similar to this source.

(g) Wet Scrubber:

A wet scrubber is an absorption system in which a waste gas stream is interacted with a scrubbing fluid inside a contact chamber in order to strip particulate or gaseous pollutants from the waste gas stream through the processes of diffusion and dissolution. In many cases, an additive such as an acid, a base, or a VOC oxidizing agent is dissolved in the scrubbing fluid so that the dissolved gaseous pollutant chemically reacts with the scrubbing fluid to form a non-volatile or soluble product, thereby allowing additional gaseous pollutant to be absorbed by the scrubbing fluid. The four types of wet scrubber systems include packed towers, plate (or tray) columns, venturi scrubbers, and spray chambers. Gas and liquid flow through an absorber may be countercurrent, crosscurrent, or cocurrent. When used as an emission control technique, wet scrubbers are typically used for controlling particulate, acid gases, halogen gases, and highly soluble gases such as sulfur dioxide and ammonia.

If a wet scrubber is used for VOC control, the scrubbing fluid chosen should have a high solubility for the VOC gas, a low vapor pressure, a low viscosity, and should be relatively inexpensive. Water is the most commonly used scrubbing fluid for absorbing highly water-soluble (hydrophilic) VOC compounds such as methanol, ethanol, isopropanol, butanol, acetone, and formaldehyde. Other scrubbing fluid such as mineral oils, nonvolatile hydrocarbon oils, and aqueous solutions containing surfactants or amphiphilic block copolymers may be used for absorbing water-insoluble (hydrophobic) VOC compounds. Physical absorption is typically enhanced by lower temperatures, greater scrubbing fluid contacting time and surface area, higher scrubbing fluid to VOC ratio, and higher VOC concentrations in the gas stream.

Wet scrubber systems can achieve 70-99% VOC control efficiency, depending on the VOC solubility in the scrubbing fluid, the VOC-scrubbing fluid temperature, the scrubbing fluid contacting time and surface area, the scrubbing fluid to VOC ratio, the VOC concentration in the gas stream, and whether the scrubbing fluid contains a VOC oxidizing agent. Wet scrubber absorption system control efficiency increases with reduced VOC gas stream temperatures. Therefore, high temperature VOC gas streams are typically cooled prior to entry into the wet scrubber. When used to control VOC, the spent scrubbing fluid must be regenerated, treated, or shipped offsite for proper disposal.

No information was found regarding typical VOC destruction efficiency for a wet scrubber unit controlling VOC emissions from a rail tank car cleaning operation similar to this source.

(h) Bioreactor:

A bioreactor is a system in which a VOC gas stream is interacted with liquid water to remove the VOC by absorption/dissolution, with the VOCs being biologically oxidized by naturally occurring microorganisms within the bioreactor to carbon dioxide, water, and new biomass. They are used primarily for gas streams with a low organic vapor concentration (100 to 500 ppm) and where the VOC compounds are soluble in water and readily biodegradable. The classes of compounds that can be removed in these systems include alcohols, aldehydes, esters, ketones, and many aromatic hydrocarbons. Bioreactors should not be used for waste gas streams that contain materials that are toxic to the microorganisms. Bioreactors must be monitored for and maintained at optimum operating conditions in order to maintain the viability of the microorganisms in the bioreactor and the VOC control efficiency, as well as, to prevent problems such as reactor plugging, bed compaction, and improper mixing and gas channeling. Operational variables that must be monitored and maintained include temperature, pH, VOC speciation, VOC concentration, macronutrient levels, residence time, moisture content, bed compaction, and gas contacting/mixing conditions. Bioreactor systems can achieve 60-99% VOC control efficiency, for waste streams containing readily degradable VOCs under optimum operating conditions.

The three main types of bioreactor systems include biofilters, biotrickling filters, and bioscrubbers.

(1) Biofilter

A biofilter system consists of a 3 to 5 feet deep fixed bed of peat, compost, bark, soil, gravel, or other inorganic media containing moisture and naturally occurring microorganisms. Gas stream residence time in the bed ranges from 15 to 60 seconds. If the waste gas stream is too hot, too cold, too dry, too dirty (with suspended solids), too acidic, or too basic, it may be necessary to pre-treat the gas stream to obtain optimum bed conditions (typically 60-85°F, 40-60% water, and 6.0-8.0 pH) before it can be treated in the biofilter. Biofilters are relatively inexpensive to construct and operate, they have a low pressure drop, and they produce no further waste streams. However, they have a large space requirement, the moisture and pH can be difficult to control, and particulate matter may clog the medium.

(2) Biotrickling Filter

A biotrickling filter consists of a vertical tank where liquid water is sprayed onto and trickled through a 3 to 15 feet high bed of aggregate, ceramic, or plastic media, with naturally occurring microorganisms growing within the water and as a biofilm on the media surface. The water is collected in a reservoir at the bottom of the tank and a recirculating pump is used to pump water from the reservoir back to the top of the tank. The VOC gas stream can be routed through the biotrickling filter co-current or counter-current to the water flow. Biotrickling filters are more complex and expensive to construct and operate than biofilters, but they are better able to treat acid-forming VOCs. They are prone to clogging by the biomass and produce a bio-sludge waste stream that must be removed and processed. Nutrients, acids, or bases may be added to the recirculated water to regulate the environment for optimal VOC oxidation.

(3) Bioscrubber

A bioscrubber is a modified biotrickling filter, where the water collected at the bottom of the biotrickling tank is pumped to a separate completely-mixed aeration tank prior to being recirculated back to the top of the biotrickling tank. Within the aeration tank, the microorganisms in suspension are given additional time (an hour or more) to oxidize the

dissolved VOC. As with the biotrickling filter, nutrients, acids, or bases may be added to the recirculated water to regulate the environment for optimal VOC oxidation. They are less prone to clogging by biomass, but do produce a bio-sludge waste stream that must be removed and processed.

No information was found regarding typical VOC destruction efficiency for a bioreactor controlling VOC emissions from a rail tank car cleaning operation similar to this source.

Review of U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) Database
The U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database was reviewed to identify control requirements and limitations for facilities that are similar to the rail tank car cleaning operation at this source. Below is a brief summary of search results obtained from the U.S. EPA RACT/BACT/LAER Clearinghouse (RBLC) database for processes similar to the rail tank car cleaning operation at this source. The RBLC search included determinations between January 1970 and June 2011.

Table 3. RBLC Search Summary

RBLC Search Criteria	Database Search Result
SIC Code 4789 (railroad car repair)	No matching RBLC facilities were found
NAICS Code 488210 (freight car cleaning services; locomotive and rail car repair)	No matching RBLC facilities were found
SIC Code 4953 (refuse systems)	No RBLC facilities were found that were similar to the rail tank car cleaning operation at this source. Note 1: RBLC determinations for hazardous waste treatment, storage, and disposal facilities (TSDF) are not included in this analysis, since this source does not combust hazardous waste and is not a TSDF. Note 2: RBLC determinations for facilities that contain chemical loading racks for rail tank cars or tanker trucks are not included in this analysis, since these facilities typically only load one type of chemical and the waste gas stream is typically saturated with organic vapors. The operation at this source will process rail tank cars containing only residual organic gases/vapors from more than 100 different organic chemicals, each with different physical/chemical properties.
Process Type Code 21.900 (Mixed/Other Waste Combustion/Incineration)	
Process Type Code 29.900 (Other Waste Processing & Disposal Processes)	
Process Type Code 49.999 (Other Organic Evaporative Loss Sources)	
Process Type Code 64.999 (Other SOCMI Processes)	

Based on the summary table above, no RBLC facilities were found that were similar to the rail tank car cleaning operation at this source.

Review of Indiana Department of Environmental Management (IDEM) Air Quality Permits
Indiana Department of Environmental Management (IDEM) air quality permits for facilities operating under SIC Codes 4789 (railroad car repair) and 4953 (refuse systems) were reviewed to identify control requirements and limitations for facilities that are similar to the rail tank car cleaning operation at this source. Below is a brief summary of this review:

Table 4. IDEM Air Quality Permits Determinations				
Facility Name (City, State)	**Permit # (Issuance Date)**	**Process Description (SIC Code)**	**Pollutant and Requirements**	**Basis**
GATX Corporation (Terre Haute, IN)	FESOP No. F167-24547-00130 (10/23/2007)	stationary railcar cleaning system consisting of a Railcar Wash Unit SIC Code: 4789	Pollutant: VOC Requirements: The Railcar Wash Unit is not subject to BACT. However, prior to cleaning railcars in the Railcar Wash Unit, the source voluntarily uses a flare to combust compressed gasses (mainly ammonia and LPG) purged from the rail tank cars.	Not subject to BACT
GATX Corporation (East Chicago, IN)	Registration No. R089-16033-00314 (2/4/2003)	stationary railcar cleaning process SIC Code: 4789	Pollutant: VOC Requirements: The stationary railcar cleaning process is not subject to BACT.	Not subject to BACT
United Transportation Group (East Chicago, IN)	FESOP No. F089-27287-00469 (7/21/2009)	stationary railcar and truck tank cleaning facility SIC Code: 4789	Pollutant: VOC Requirements: The railcar and truck tank cleaning facility is not subject to BACT. However, due to other permit requirements, a flare is required to be operated and control VOC and HAP emissions from the Pressurized Railcar Purging/Degassing operation at all times that the Pressurized Railcar Purging/Degassing operation is vented to it.	Not subject to BACT

Based on the summary table above, no IDEM air quality permits were found that required the use of a control device as a BACT requirement for destruction of VOC emissions from a rail tank car cleaning operation similar to this source.

Step 2 – Eliminate Technically Infeasible Control Options

Based on the information reviewed for this BACT determination, IDEM, OAQ has determined that the use of a catalytic oxidizer, carbon adsorption unit, condensation unit, wet scrubber, and bioreactor are not technically feasible options for this source for the following reasons:

(a) Catalytic Oxidizer

The use of a catalytic oxidizer is not technically feasible since the waste gas stream from the rail tank car cleaning operation will be highly variable in the flow rate and type and concentration of VOCs. The operation at this source will process rail tank cars containing only residual organic gases/vapors from more than 100 different organic chemicals (see TSD Appendix B), each with different physical/chemical properties. Use of catalytic oxidization may have higher capital and operating costs, since multiple catalysts may be necessary to adequately treat all the different types of organic chemicals, and some of the organic chemicals may cause fouling or masking of the catalyst. Since this add-on control is not technically feasible to control the VOC emissions, economic feasibility will not be evaluated. No additional analysis will be conducted. The use of a catalytic oxidizer will not be considered as BACT for this operation.

(b) Carbon Adsorption

The use of a carbon adsorption unit alone is not technically feasible since the waste gas stream from the rail tank car cleaning operation will be highly variable in the flow rate and type and concentration of VOCs. The operation at this source will process rail tank cars containing only residual organic gases/vapors from more than 100 different organic chemicals, each with different physical/chemical properties. The molecular weight of the chemicals requiring control at this source will vary from 32.04 to 278.3 lb/lb-mole. As a result, low molecular weight organics may not adsorb sufficiently and high molecular weight compounds may be difficult to desorb and remove during the desorption cycle. Since this add-on control is not technically feasible to control the VOC emissions, economic feasibility will not be evaluated. No additional analysis will be conducted. The use of a carbon adsorption unit will not be considered as BACT for this operation.

(c) Condensation Unit

The use of a condensation unit is not technically feasible since the waste gas stream from the rail tank car cleaning operation will be highly variable in the flow rate and type and concentration of VOCs. The operation at this source will process rail tank cars containing only residual organic gases/vapors from more than 100 different organic chemicals. The use of a condensation unit alone is not technically feasible, since the high molecular weight organic compounds contained in the exhaust gas could foul the heat transfer surfaces and result in high operating costs for cleaning heat transfer surfaces. Since this add-on control is not technically feasible to control the VOC emissions, economic feasibility will not be evaluated. No additional analysis will be conducted. The use of a condensation unit will not be considered as BACT for this operation.

(d) Wet Scrubber

The use of a wet scrubber unit alone is not technically feasible since the waste gas stream from the rail tank car cleaning operation will be highly variable in the types and concentrations of VOCs. The operation at this source will process rail tank cars containing only residual organic gases/vapors from more than 100 different organic chemicals, each with different physical/chemical properties and degrees of water-solubility and water in-solubility. Since this add-on control is not technically feasible to control the VOC emissions, economic feasibility will not be evaluated. No additional analysis will be conducted. The use of a wet scrubber will not be considered as BACT for this operation.

(e) Bioreactor

The use of a bioreactor is not technically feasible since the waste gas stream from the rail tank car cleaning operation will be highly variable in the types and concentrations of VOCs. The operation at this source will process rail tank cars containing only residual organic gases/vapors from more than 100 different organic chemicals, each with different physical/chemical properties, water solubility, biodegradability, and toxicity to microorganisms. Some of the chemicals that would require treatment have a low water-solubility, some may not be readily biodegradable, and some may be toxic to microorganisms. Since this add-on control is not technically feasible to control the VOC emissions, economic feasibility will not be evaluated. No additional analysis will be conducted. The use of a bioreactor will not be considered as BACT for this operation.

Step 3 – Rank Remaining Control Options by Control Effectiveness

The remaining technically feasible options for controlling VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation are as follows (listed in descending order by control effectiveness):

Table 5. Control Effectiveness for Technically Feasible Control Options	
Control Technology	**Control Efficiency (%)**
Thermal Oxidizer	98.0%
Flare	98.0%

IDEM is aware that that the above control technologies may be able to periodically achieve control efficiencies that exceed 98% under certain operating conditions. However, BACT must be achievable on a consistent basis under normal operational conditions. BACT limitations do not necessarily reflect the highest possible control efficiency achievable by the technology on which the emission limitation is based. The permitting authority has the discretion to base the emission limitation on a control efficiency that is somewhat lower than the optimal level. There are several reasons why the permitting authority might choose to do this. One reason is that the control efficiency achievable through the use of the technology may fluctuate, so that it would not always achieve its optimal control efficiency. In that case, setting the emission limitation to reflect the highest control efficiency would make violations of the permit unavoidable. To account for this possibility, a permitting authority must be allowed a certain degree of discretion to set the emission limitation at a level that does not necessarily reflect the highest possible control efficiency, but will allow the Permittee to achieve compliance consistently. While we recognize that greater than 98% may be achievable as an average during testing, IDEM allows for sources to include a safety factor, or margin of error, to allow for minor variations in the operation of the emission units and the control device.

Step 4 – Evaluate the Most Effective Controls and Document Results

(a) Control Technology

A thermal oxidizer and a flare are each capable of achieving the same level of control. The Permittee has proposed to use a flare as the BACT for controlling VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation for the following reasons:

(1) A thermal oxidizer would not be the most effective control, since the waste gas stream from the rail tank car cleaning operation will be highly variable in the flow rate and type and concentration of VOCs. In general, thermal oxidizers are less efficient at treating waste gas streams with highly variable flowrate, since the variable flowrate results in varying residence times, combustion chamber temperature, and poor mixing. As compared to a flare, a thermal oxidizer would have higher capital and operating costs and would use more auxiliary fuel (e.g., natural gas) to maintain its combustion chamber temperature, resulting in additional emissions of nitrogen oxides and carbon monoxide from combustion of the auxiliary fuel.

(2) A flare would be the most effective control, since it can be used to control almost any VOC stream, can typically handle large fluctuations in VOC concentration, flow rate, heating value, and inert species content, and it is appropriate for continuous, batch, and variable flow vent stream applications. As compared to a thermal oxidizer, a flare would have lower capital and operating costs and would use less auxiliary fuel (e.g., natural gas) to combust the VOCs, resulting in less emission of nitrogen oxides and carbon monoxide from combustion of the auxiliary fuel.

(b) Control Scenario

Based on the worst case VOC uncontrolled emission factors for each type of chemical/material cleaned out of the rail tank cars in each of the rail tank car cleaning operation wash stations (see Table 1), the Permittee has proposed the following control scenario and work practices as BACT for each of the wash stations (WS-1 through WS-10):

Table 6. VOC Control Scenario

Type of Chemical/Material Processed	Rail Tank Car Cleaning Operation Phases		
	Depressurizing	**Purging/ Degassing**	**Venting, Washing, Rinsing, and Drying**
Pressurized Organic Gases	Flare as BACT control	Flare as BACT control	Work Practices(3)
High Vapor Pressure Liquid Organics	N/A(1)	Flare as BACT control	Work Practices(3)
Low Vapor Pressure Liquid Organics	N/A(1)	N/A(1)	Work Practices(3)
Inorganic Chemical Solutions/Slurries	N/A(2)	N/A(2)	N/A(2)
Liquid or Semi-Solid Food Grade Products	N/A(2)	N/A(2)	N/A(2)

Notes:
1. N/A = Not Applicable, based on the following:
   (a) Rail tank cars containing these organic chemicals are not pressurized. Therefore, depressurization is not needed.
   (b) The source will not perform purging/degassing for low vapor pressure liquid organics.

   However, residual liquid organic chemicals processed in the rail tank car cleaning operation will be drained/removed and collected in drums that will be sent off-site for re-use or disposal.

2. N/A = Not Applicable, since these chemicals/materials do not contain VOC. Therefore, when cleaning rail cars containing these types of chemicals/materials at a given wash station, that wash station is not subject to BACT. The source, however, has to keep records to confirm these chemicals do not contain VOC.

3. Only work practices to minimize VOC emissions are proposed, since it is not cost effective or environmentally beneficial to use a flare to control VOC emitted during the venting, washing, rinsing, and drying phase (less than 0.26% of the total VOC is emitted during this phase) (see details below).

As indicated in the table above, only work practices to minimize VOC emissions are proposed during the venting, washing, rinsing, and drying phase when cleaning rail tank cars containing organic gases, high vapor pressure liquid organics, or low vapor pressure liquid organics, since less than 0.26% of the total VOC is potentially emitted during this phase. It is not cost effective to use a flare to control the minimal amount of VOC emitted during the venting, washing, rinsing, and drying phase, since significant additional capital and operating costs would be incurred, including costs to perform addition purging/degassing cycles, to separate/volatize and capture VOC compounds from the wash and rinse waters, to capture any trivial amounts of VOC that would be emitted from the rail tank cars during drying (after washing and rinsing), and to burn additional auxiliary fuel (e.g., natural gas) to combust the VOCs in the flare. Additional use of auxiliary fuel (e.g., natural gas) to combust the VOCs in the flare would also result in additional emissions of nitrogen oxides and carbon monoxide from combustion of the auxiliary fuel. Therefore, it is not cost effective or environmentally beneficial to use a flare to control VOC emitted during the venting, washing, rinsing, and drying phase when cleaning rail tank cars containing organic gases, high vapor pressure liquid organics, or low vapor pressure liquid organics.

Step 5 – Select BACT

The Permittee proposes to use a flare as the BACT for controlling VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation. Upon evaluation of the BACT analysis, IDEM agrees with the BACT proposed by the source. IDEM, OAQ has determined that the following requirements represent BACT:

Pursuant to 326 IAC 8-1-6 (New Facilities; General Reduction Requirements), the best available control technology (BACT) for VOC emissions from each of the wash stations (WS-1 through WS-10) associated with the one (1) rail tank car cleaning operation shall be as follows:

(a) When cleaning rail tank cars containing pressurized organic gases:

(1) During Depressurization
Each rail tank car shall be depressurized, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%;

(2) During Purging/Degassing
Each rail tank car shall be purged/degassed equal to or greater than a total of four (4) tank volumes, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%; and

(3) During Venting, Washing, Rinsing, and Drying
Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (a)(1) and (a)(2) above.

(b) When cleaning rail tank cars containing high vapor pressure liquid organic chemicals:

(1) For Residual Liquids in Rail Tank Cars:
The Permittee shall comply with the following work practices:

(A) Residual high vapor pressure liquid organic chemicals shall be drained and collected in a container and sent off-site for re-use or disposal; and

(B) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(2) During Purging/Degassing
Each rail tank car shall be purged/degassed equal to or greater than a total of four (4) tank volumes, with VOC emissions controlled at all times by flare FL-1 at an overall VOC control efficiency (including the capture efficiency and destruction efficiency) of equal to or greater than 98%; and

(3) During Venting, Washing, Rinsing, and Drying
The Permittee shall comply with the following work practices:

(A) Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (b)(1) and (b)(2) above;

(B) The Permittee shall collect, process, store, and dispose of wash waters and rinse waters generated at the wash stations and any organic liquids

collected by the dissolved air flotation unit in a manner that minimizes VOC emissions; and

(C) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(c) When cleaning rail tank cars containing low vapor pressure liquid organic chemicals:

(1) For Residual Liquids in Rail Tank Cars:
The Permittee shall comply with the following work practices:

(A) Residual low vapor pressure liquid organic chemicals shall be drained and collected in a container and sent off-site for re-use or disposal; and

(B) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(2) During Venting, Washing, Rinsing, and Drying
The Permittee shall comply with the following work practices:

(A) Prior to initiating the venting, washing, rinsing, and drying of a rail tank car, the Permittee shall verify that the rail tank car was cleaned as specified in (c)(1) above;

(B) The Permittee shall collect, process, store, and dispose of wash waters and rinse waters generated at the wash stations and any organic liquids collected by the dissolved air flotation unit in a manner that minimizes VOC emissions; and

(C) The Permittee shall comply with the work practices specified in (d) for storing and transferring of liquid organic chemicals and VOC containing wastes.

(d) When storing and transferring of liquid organic chemicals and VOC containing wastes, the Permittee shall comply with, but not be limited to, the following work practices:

(1) Store all liquid organic chemicals and VOC containing wastes in closed containers that employ a tightly fitting cover. Collection containers shall be free of all liquid leaks. The Permittee shall replace or repair collection containers for which a liquid leak is detected;

(2) Ensure that storage containers are kept closed at all times except when depositing or removing liquid organic chemicals or VOC containing wastes;

(3) Minimize spills of liquid organic chemicals and VOC containing wastes and clean up any spill immediately; and

(4) When transferring liquid organic chemicals or VOC containing wastes from a storage container to another location, convey the material in closed containers or pipes.

IDEM Contact

(a) Questions regarding this proposed permit can be directed to Nathan Bell at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 233-5670 or toll free at 1-800-451-6027 extension 35670.

(b) A copy of the findings is available on the Internet at: http://www.in.gov/ai/appfiles/idem-caats/

(c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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www.idem.IN.gov

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

TO: Billy White
BW Washington Car Shop
1723 W Walnut Street
Washington, IN 47501

DATE: January 10, 2012

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

SUBJECT: Final Decision
New Source Review & Federally Enforceable State Operating Agreement
027-29701-00006

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

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

A copy of the final decision and supporting materials has also been sent via standard mail to:
OAQ Permits Branch Interested Parties List

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

Final Applicant Cover letter.dot 11/30/07

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
We Protect Hoosiers and Our Environment.

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Thomas W. Easterly
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January 10, 2012

TO: Washington Carnegie Public Library

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

Subject: **Important Information for Display Regarding a Final Determination**

Applicant Name: BW Washington Car Shop
Permit Number: 027-29701-00006

You previously received information to make available to the public during the public comment period of a draft permit. Enclosed is a copy of the final decision and supporting materials for the same project. Please place the enclosed information along with the information you previously received. To ensure that your patrons have ample opportunity to review the enclosed permit, **we ask that you retain this document for at least 60 days.**

The applicant is responsible for placing a copy of the application in your library. If the permit application is not on file, or if you have any questions concerning this public review process, please contact Joanne Smiddie-Brush, OAQ Permits Administration Section at 1-800-451-6027, extension 3-0185.

Enclosures
Final Library.dot 11/30/07

Mail Code 61-53

IDEM Staff	GHOTOPP 1/10/2012 BW Washington Car Shop 027-29701-00006 Final			AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Billy White BW Washington Car Shop 1723 W Walnut St Washington IN 47501 (Source CAATS) via confirmed delivery									
2		Mr. Wendell Hibdon Plumbers & Steam Fitters Union, Local 136 2300 St. Joe Industrial Park Dr Evansville IN 47720 *(Affected Party)*									
3		CSX Transport, Attn: Environmental Svcs 500 Water Street Jacksonville FL 32202 *(Affected Party)*									
4		Mr. Amos M. Wittmer R. R. 2, Box 456 Montgomery IN 47558 *(Affected Party)*									
5		Washington City Council and Mayors Office 101 N.E. 3rd St. Washington IN 47501 *(Local Official)*									
6		Daviess County Commissioners 200 East Walnut Washington IN 47501 *(Local Official)*									
7		Washington Carnegie Public Library 300 W Main St Washington IN 47501-2698 *(Library)*									
8		Davies County Health Department 303 East Hefron Street Washington IN 47501 *(Health Department)*									
9		Mr. James Jones 209 S.E. 11th Street Washington IN 47501 *(Affected Party)*									
10		Mr. John Blair 800 Adams Ave Evansville IN 47713 *(Affected Party)*									
11		Martin E. James 249 Vine St Washington IN 47501 *(Affected Party)*									
12		Virginia Ruth & Gerald Sturgeon RR1 Box 242 Washington IN 47501 *(Affected Party)*									
13		Herbert & Zona Parham 244 Apraw Rd Washington IN 47501 (Affected Party)									
14		Howard L. Craft PO Box 384 Washington IN 47501 *(Affected Party)*									
15		Karen Palmer, Neil & Marie Burgess RR 1 Vine St Washington IN 47501 *(Affected Party)*									

Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
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Mail Code 61-53

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Name and address of Sender	▶	Indiana Department of Environmental Management Office of Air Quality – Permits Branch 100 N. Senate Indianapolis, IN 46204	Type of Mail: **CERTIFICATE OF MAILING ONLY**	

Line	Article Number	Name, Address, Street and Post Office Address	Postage	Handing Charges	Act. Value (If Registered)	Insured Value	Due Send if COD	R.R. Fee	S.D. Fee	S.H. Fee	Rest. Del. Fee Remarks
1		Rosemary Harder RR 4 Loogootee IN 47501 (Affected Party)									
2		Cynthia Carrico C/O Mary L. Hill RR1 Box 231 Washington IN 47501 *(Affected Party)*									
3		Edward & Bonnie Jones RR #2 Box 155A Washington IN 47501 *(Affected Party)*									
4		Myles & Naomi Giroudard 2105 W. Walnut St Washington IN 47501 *(Affected Party)*									
5		Melvin & Carley Leonard 2000 Cosby Rd Washington IN 47501 *(Affected Party)*									
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Total number of pieces Listed by Sender	Total number of Pieces Received at Post Office	Postmaster, Per (Name of Receiving employee)	The full declaration of value is required on all domestic and international registered mail. The maximum indemnity payable for the reconstruction of nonnegotiable documents under Express Mail document reconstructing insurance is $50,000 per piece subject to a limit of $50, 000 per occurrence. The maximum indemnity payable on Express mil merchandise insurance is $500. The maximum indemnity payable is $25,000 for registered mail, sent with optional postal insurance. See ***Domestic Mail Manual*** **R900, S913**, and **S921** for limitations of coverage on inured and COD mail. See ***International Mail Manual*** for limitations o coverage on international mail. Special handling charges apply only to Standard Mail (A) and Standard Mail (B) parcels.
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