



Mitchell E. Daniels, Jr.  
Governor

Thomas W. Easterly  
Commissioner

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

TO: Interested Parties / Applicant  
DATE: September 9, 2005  
RE: Orica USA, Inc. / 019-20631-00080  
FROM: Paul Dubenetzky  
Chief, Permits Branch  
Office of Air Quality

### Notice of Decision: Approval - Effective Immediately

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

If you wish to challenge this decision, IC 4-21.5-3 and IC 13-15-6-1 require that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

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

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

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

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

Enclosures  
FNPER.dot 1/10/05



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## MINOR SOURCE OPERATING PERMIT OFFICE OF AIR QUALITY

**Orica USA, Inc.  
6200 East Highway 62, Building 3019  
Jeffersonville, Indiana 47130**

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

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

Operation Permit No.: MSOP 019-20631-00080	
Issued by: Original signed by Paul Dubenetzky, Chief Permits Branch Office of Air Quality	Issuance Date: September 9, 2005 Expiration Date: September 9, 2010

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## SECTION A SOURCE SUMMARY

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

### A.1 General Information [326 IAC 2-5.1-3(c)] [326 IAC 2-6.1-4(a)]

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The Permittee owns and operates a stationary explosive production plant for manufacturing bulk and packaged emulsion explosives.

Authorized Individual: Operations Manager  
Source Address: 6200 East Highway 62, Building 3019, Jeffersonville, IN 47130  
Mailing Address: Same as above  
General Source Phone: (812) 256-5983  
SIC Code: 2892  
County Location: Clark  
Source Location Status: Nonattainment area for 8-hour ozone and PM2.5  
Attainment area for all other criteria pollutants  
Source Status: Minor Source Operating Permit  
Minor Source, under PSD and Emission Offset Rules;  
Minor Source, Section 112 of the Clean Air Act

### A.2 Emissions Units and Pollution Control Equipment Summary

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This stationary source is approved to operate the following emissions units and pollution control devices:

- (a) One (1) ammonium nitrate prill conveying system, with a maximum capacity of 45,000 pounds per hour of ammonium nitrate prills, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-2;
- (b) One (1) propellant pneumatic conveying system, with a maximum capacity of 9,000 pounds per hour of propellant, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-4;
- (c) One (1) aluminum pneumatic conveying system, with a maximum capacity of 3,150 pounds per hour of microballoons, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-6;
- (d) One (1) microballoon pneumatic conveying system, with a maximum capacity of 2,700 pounds per hour of microballoons, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-5;
- (e) One (1) fixed flat top vertical storage tank, identified as T-21, with a maximum capacity of 5,120 cubic feet, constructed in 1999, storing microballoons and using baghouse as control;
- (f) One (1) diesel fired boiler, constructed in 2005, identified as SB-3, with a maximum heat input rate of 5.0 million British thermal units per hour, exhausting to one (1) stack ID # S-8;

- (g) Two (2) distillate fuel oil fired boilers, identified as SB-1 and SB-2, constructed in 1996, with a maximum heat input rate of 5.25 million British thermal units per hour, each exhausting through one (1) stack ID # S-1 and S-7, respectively;
- (h) Two (2) diesel fired emergency generators, identified as EG-1 and EG-2, constructed in 1996 and 2005, respectively, each with a maximum power output rate of 134 and 115 HP, respectively, each exhausting to one (1) stack ID # S-3 and S-9, respectively;
- (i) One (1) storage tank, identified as T-26, with a maximum capacity of 6,000 gallons, constructed in 2005 and storing diesel fuel;
- (j) Two (2) storage tanks, identified as T-27 and T-28, each with a maximum capacity of 297,000 gallons, constructed in 2005 and storing ammonium nitrate solution;
- (k) Four (4) storage tanks, identified as T-13, T-14, T-16, and T-18, each with a maximum capacity of 23,500, 12,000, 12,000 and 12,100 gallons, respectively, constructed in 1996 and storing oil blend;
- (l) Four (4) storage tanks, identified as T-11, T-12, T-15, and T-17, each with a maximum capacity of 13,000, 13,000, 23,500 and 23,500 gallons, respectively, constructed in 1996 and storing ammonium nitrate solution;
- (m) Eight (8) fixed cone roof vertical storage tanks, identified as T-1, T-2, T-5, T-6, T-7, T-8, T-9, and T-10, each with a maximum capacity of 12,500 gallons, constructed in 1996 and storing explosives emulsions;
- (n) Five (5) storage bins, identified as T-3, T-22, T-23, T-24, and T-25, each with a maximum capacity of 60 tons, constructed in 1996, 1999, 1999 and 1999, respectively, and storing ammonium nitrate prills;
- (o) Three (3) horizontal storage tanks, identified as T-4, T-19, and T-20, each with a maximum capacity of 12,000, 6,000 and 275 gallons, respectively, constructed in 1995 and storing #2 fuel oil;
- (p) One (1) water/glycol tank, identified as W/G-1, constructed in 1996 and with a maximum capacity of 400 gallons; and
- (q) Three (3) hydraulic tanks, identified as HT-1, HT-2, and HT-3, constructed in 1996 and each with a maximum capacity of 110, 130, and 110 gallons, respectively.

## **SECTION B GENERAL CONDITIONS**

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1.1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

### **B.1 Permit No Defense [IC 13]**

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This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

### **B.2 Definitions**

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Terms in this permit shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations IC 13-11, 326 IAC 1-2, and 326 IAC 2-1.1-1 shall prevail.

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

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

### **B.4 Permit Term and Renewal [326 IAC 2-6.1-7(a)][326 IAC 2-1.1-9.5]**

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This permit 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 of this permit do not affect the expiration date.

The Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date. If a timely and sufficient permit application for a renewal has been made, this permit shall not expire and all terms and conditions shall continue in effect until the renewal permit has been issued or denied.

### **B.5 Modification to Permit [326 IAC 2]**

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All requirements and conditions of this operating permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

### **B.6 Annual Notification [326 IAC 2-6.1-5(a)(5)]**

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- (a) Annual notification shall be submitted to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this permit.
- (b) Noncompliance with any condition must be specifically identified. If there are any permit conditions or requirements for which the source is not in compliance at any time during the year, the Permittee must provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be, achieved. The notification must be signed by an authorized individual.
- (c) The annual notice shall cover the time period from January 1 to December 31 of the previous year, and shall be submitted in the format attached no later than March 1 of each year to:

Compliance Branch, Office of Air Quality  
Indiana Department of Environmental Management  
100 North Senate Avenue  
Indianapolis, IN 46204

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

**B.7 Preventive Maintenance Plan [326 IAC 1-6-3]**

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- (a) If required by specific condition(s) in Section D of this permit, the Permittee shall prepare and maintain Preventive Maintenance Plans (PMPs) within ninety (90) days (this time frame is determined on a case by case basis but no more than ninety (90) days) after issuance of this permit, including the following information on each emissions unit:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
  - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
  - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

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

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

The PMP extension notification does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).

- (b) The Permittee shall implement the PMPs, including any required record keeping, as necessary to ensure that failure to implement a PMP does not cause or contribute to an exceedance of any limitation on emissions or potential to emit.
- (c) A copy of the PMP's 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 PMP whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions or potential to emit. The PMP does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) 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.8 Permit Revision [326 IAC 2-5.1-3(e)(3)] [326 IAC 2-6.1-6]**

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- (a) Permit revisions are governed by the requirements of 326 IAC 2-6.1-6.
- (b) Any application requesting an amendment or modification of this permit shall be submitted to:

Indiana Department of Environmental Management  
Permits Branch, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

Any such application shall be certified by an "authorized individual" as defined by 326 IAC 2-1.1-1.

- (c) The Permittee shall notify the OAQ within thirty (30) calendar days of implementing a notice-only change. [326 IAC 2-6.1-6(d)]
- (d) No permit amendment or modification is required for the addition, operation or removal of a non-road engine, as defined in 40 CFR 89.2.

**B.9 Inspection and Entry [326 IAC 2-5.1-3(e)(4)(B)] [326 IAC 2-6.1-5(a)(4)] [IC 13-14-2-2] [IC13-17-3-2][IC 13-30-3-1]**

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

- (a) Enter upon the Permittee's premises where a permitted source is located, or emissions related activity is conducted, or where records must be kept under the conditions of this permit;
- (b) As authorized by the Clean Air Act, IC 13-14-2-2, IC 13-17-3-2, and IC 13-30-3-1, have access to and copy, at reasonable times, any records that must be kept under this title or the conditions of this permit or any operating permit revisions;
- (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 processes, emissions units (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit or any operating permit revisions;
- (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.10 Transfer of Ownership or Operation [326 IAC 2-6.1-6(d)(3)]**

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Pursuant to [326 IAC 2-6.1-6(d)(3)]:

- (a) In the event that ownership of this source is changed, the Permittee shall notify IDEM, OAQ, Permits Branch, within thirty (30) days of the change.
- (b) The written notification shall be sufficient to transfer the permit to the new owner by an notice-only change pursuant to 326 IAC 2-6.1-6(d)(3).
- (c) IDEM, OAQ, shall issue a revised permit.

The notification which shall be submitted by the Permittee does require the certification by the "authorized individual" as defined by 326 IAC 2-1.1-1.

**B.11 Annual Fee Payment [326 IAC 2-1.1-7]**

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- (a) The Permittee shall pay annual fees to IDEM, OAQ within thirty (30) calendar days of receipt of a billing.
  
- (b) The Permittee may call the following telephone numbers: 1-800-451-6027 or 317-233-4230 (ask for OAQ, Billing, Licensing, and Training Section), to determine the appropriate permit fee.

**B.12 Credible Evidence [326 IAC 1-1-6]**

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

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

**C.2 Permit Revocation [326 IAC 2-1.1-9]**

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

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of this article.

**C.3 Opacity [326 IAC 5-1]**

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

- (a) Opacity shall not exceed an average of thirty percent (30%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute non-overlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

**C.4 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.5 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  
Asbestos Section, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

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 by an "authorized individual" as defined by 326 IAC 2-7-1(34).

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

## Testing Requirements

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

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

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

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

no later than thirty-five (35) days prior to the intended test date.

- (b) The Permittee shall notify IDEM, OAQ of the actual test date at least fourteen (14) days prior to the actual date.
- (c) Pursuant to 326 IAC 3-6-4(b), all test reports must be received by IDEM, OAQ (and local agency) not later than forty-five (45) days after the completion of the testing. An extension may be granted by the IDEM, OAQ, (and local agency), 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.7 Compliance Requirements [326 IAC 2-1.1-11]

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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

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

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

### C.9 Monitoring Methods [326 IAC 3][40 CFR 60][40 CFR 63]

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Any monitoring or testing required by Section D of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, 40 CFR 60, Appendix B, 40 CFR 63, or other approved methods as specified in this permit.

### C.10 Pressure Gauge and Other Instrument Specifications [326 IAC 2-1.1-11]

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- (a) Whenever a condition in this permit requires the measurement of total static pressure drop across any part of the unit or its control device, the gauge employed shall have a scale such that the expected normal reading shall be no less than twenty percent (20%) of full scale and be accurate within plus or minus two percent ( 2%) of full scale reading.

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

#### C.11 Compliance Response Plan - Preparation and Implementation

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- (a) The Permittee is required to prepare a Compliance Response Plan (CRP) for each compliance monitoring condition of this permit. A CRP shall be submitted to IDEM, OAQ, upon request. The CRP shall be prepared within ninety (90) days after issuance of this permit by the Permittee, supplemented from time to time by the Permittee, maintained on site, and comprised of:
  - (1) Reasonable response steps that may be implemented in the event that a response step is needed pursuant to the requirements of Section D of this permit; and an expected timeframe for taking reasonable response steps.
  - (2) If, at any time, the Permittee takes reasonable response steps that are not set forth in the Permittee's current Compliance Response Plan, the Permittee shall amend its Compliance Response Plan to include such response steps taken.
- (b) For each compliance monitoring condition of this permit, reasonable response steps shall be taken when indicated by the provisions of that compliance monitoring condition as follows:
  - (1) Reasonable response steps shall be taken as set forth in the Permittee's current Compliance Response Plan; or
  - (2) If none of the reasonable response steps listed in the Compliance Response Plan is applicable or responsive to the excursion, the Permittee shall devise and implement additional response steps as expeditiously as practical. Taking such additional response steps shall not be considered a deviation from this permit so long as the Permittee documents such response steps in accordance with this condition.
  - (3) If the Permittee determines that additional response steps would necessitate that the emissions unit or control device be shut down, and it will be ten (10) days or more until the unit or device will be shut down, then the Permittee shall promptly notify the IDEM, OAQ of the expected date of the shut down. The notification shall also include the status of the applicable compliance monitoring parameter with respect to normal, and the results of the response actions taken up to the time of notification.
  - (4) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (c) The Permittee is not required to take any further response steps for any of the following reasons:
  - (1) A false reading occurs due to the malfunction of the monitoring equipment and prompt action was taken to correct the monitoring equipment.
  - (2) The Permittee has determined that the compliance monitoring parameters established in the permit conditions are technically inappropriate, has previously submitted a request for a minor permit modification to the permit, and such request has not been denied.

- (3) An automatic measurement was taken when the process was not operating.
- (4) The process has already returned or is returning to operating within “normal” parameters and no response steps are required.
- (d) Except as otherwise provided by a rule or provided specifically in Section D, all monitoring as required in Section D shall be performed when the emission unit is operating, except for time necessary to perform quality assurance and maintenance activities.

## **Record Keeping and Reporting Requirements**

### **C.12 Malfunctions Report [326 IAC 1-6-2]**

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

- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ) or appointed representative upon request.
- (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAQ, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
- (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a)(1) through (6).
- (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

### **C.13 General Record Keeping Requirements [326 IAC 2-6.1-5]**

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, all record keeping requirements not already legally required shall be implemented when operation begins.

### **C.14 General Reporting Requirements [326 IAC 2-1.1-11] [326 IAC 2-6.1-5] [IC 13-14-1-13]**

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

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Quality  
100 North Senate Avenue  
Indianapolis, Indiana 46204

- (b) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ, on or before the date it is due.
- (c) Unless otherwise specified in this permit, any quarterly report required in Section D of this permit shall be submitted within thirty (30) days of the end of the reporting period. The report does not require the certification by an "authorized individual" as defined by 326 IAC 2-1.1-1(1).
- (d) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period. Reporting periods are based on calendar years, unless otherwise specified in this permit. For the purpose of this permit "calendar year" means the twelve (12) month period from January 1 to December 31 inclusive.

**SECTION D.1 EMISSIONS UNITS OPERATION CONDITIONS**

**Emissions Unit Description:**

- (a) One (1) ammonium nitrate prill conveying system, with a maximum capacity of 45,000 pounds per hour of ammonium nitrate prills, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-2;
- (b) One (1) propellant pneumatic conveying system, with a maximum capacity of 9,000 pounds per hour of propellant, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-4;
- (c) One (1) aluminum pneumatic conveying system, with a maximum capacity of 3,150 pounds per hour of microballoons, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-6;
- (d) One (1) microballoon pneumatic conveying system, with a maximum capacity of 2,700 pounds per hour of microballoons, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-5; and
- (e) One (1) fixed flat top vertical storage tank, identified as T-21, with a maximum capacity of 5,120 cubic feet, constructed in 1999, storing microballoons and using baghouse as control.

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

**Emission Limitations and Standards**

**D.1.1 Particulate [326 IAC 6-3-2]**

Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emitted from the facilities listed below shall be limited as stated, based on the following:

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:

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

Emission Unit/Activity	Process Weight Rate (tons/hr)	Allowable Emissions (326 IAC 6-3-2) (lb/hr)
Ammonia Nitrate Prill Conveying System (S-2)	22.5	33.02
Propellant Pneumatic Conveying System (S-4)	4.5	11.23
Aluminum Pneumatic Conveying System (S-6)	1.58	5.56
Microballoon Pneumatic Conveying System (S-5)	1.35	5.01
Microballoon Storage Tank Baghouse	1.35	5.01

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

A Preventive Maintenance Plan, in accordance with Section B - Preventive Maintenance Plan, of this permit, is required for this facility and any control devices.

## Compliance Determination Requirements

### D.1.3 Particulate Control

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To document compliance with Condition D.1.1, each baghouse for particulate control shall be in operation and control emissions from the listed facilities at all times that the facilities are in operation.

## Compliance Monitoring Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]

### D.1.4 Visible Emissions Notations

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- (a) Visible emission notations of each stack exhaust, identified as S-2, S-4, S-5 and S-6, shall be performed daily during normal daylight operations when exhausting to the atmosphere. A trained employee shall record whether emissions are normal or abnormal.
- (b) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (c) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (d) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (e) The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when an abnormal emission is observed. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a deviation from this permit.

### D.1.5 Parametric Monitoring

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The Permittee shall record the total static pressure drop across each baghouse used in conjunction with the listed processes, at least daily when the process is in operation. When for any one reading, the pressure drop across the baghouse is outside the normal range of 3.0 - 6.0 inches of water or a range established during the latest stack test, the Permittee shall take reasonable response steps in accordance with Section C- Compliance Response Plan - Preparation, Implementation, Records, and Reports. A pressure reading that is outside the above mentioned range is not a deviation from this permit. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a deviation from this permit.

The instrument used for determining the pressure shall comply with Section C - Pressure Gauge and Other Instrument Specifications, of this permit, shall be subject to approval by IDEM, OAQ, and shall be calibrated at least once every six (6) months.

### D.1.6 Baghouse Inspections

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An inspection shall be performed each calendar quarter of all bags controlling the process when venting to the atmosphere. A baghouse inspection shall be performed within three months of redirecting vents to the atmosphere and every three months thereafter. Inspections are optional when venting to the indoors. Inspections required by this condition shall not be performed in consecutive months. All defective bags shall be replaced.

#### D.1.7 Broken or Failed Bag Detection

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In the event that bag failure has been observed:

- (a) For multi-compartment units, the affected compartments will be shut down immediately until the failed units have been repaired or replaced. Within eight (8) business hours of the determination of failure, response steps according to the timetable described in the Compliance Response Plan shall be initiated. For any failure with corresponding response steps and timetable not described in the Compliance Response Plan, response steps shall be devised within eight (8) business hours of discovery of the failure and shall include a timetable for completion. Failure to take response steps in accordance with Section C - Compliance Response Plan - Preparation and Implementation shall be considered a deviation from this permit. If operations continue after bag failure is observed and it will be 10 days or more after the failure is observed before the failed units will be repaired or replaced, the Permittee shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.
- (b) For single compartment baghouses, if failure is indicated by a significant drop in the baghouse's pressure readings with abnormal visible emissions or the failure is indicated by an opacity violation, or if bag failure is determined by other means, such as gas temperatures, flow rates, air infiltration, leaks, dust traces or triboflows, then failed units and the associated process will be shut down immediately until the failed units have been repaired or replaced.

#### **Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-6.1-5(a)(2)]**

#### D.1.8 Record Keeping Requirements

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- (a) To document compliance with Condition D.1.4, the Permittee shall maintain daily records of visible emission notations of the stack exhausts, identified as S-2, S-4, S-5 and S-6.
- (b) To document compliance with Condition D.1.5, the Permittee shall maintain daily records of the total static pressure drop during normal operation when venting to the atmosphere.
- (c) To document compliance with Condition D.1.6, the Permittee shall maintain records of the results of the inspections required under Condition D.1.6.
- (d) To document compliance with Condition D.1.2, the Permittee shall maintain records of any additional inspections prescribed by the Preventive Maintenance Plan.
- (e) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

## SECTION D.2

## EMISSIONS UNIT OPERATION CONDITIONS

### Emissions Unit Description:

- (a) One (1) diesel fired boiler, constructed in 2005, identified as SB-3, with a maximum heat input rate of 5.0 million British thermal units per hour, exhausting to one (1) stack ID # S-8;
- (b) Two (2) distillate fuel oil fired boilers, identified as SB-1 and SB-2, constructed in 1996, with a maximum heat input rate of 5.25 million British thermal units per hour, each exhausting to one (1) stack ID # S-1 and S-7, respectively; and
- (c) Two (2) diesel fired emergency generators, identified as EG-1 and EG-2, constructed in 1996 and 2005, respectively, each with a maximum power output rate of 134 and 115 HP, respectively, each exhausting to one (1) stack ID # S-3 and S-9, respectively;
- (d) One (1) storage tank, identified as T-26, with a maximum capacity of 6,000 gallons, constructed in 2005 and storing diesel fuel;
- (b) Two (2) storage tanks, identified as T-27 and T-28, each with a maximum capacity of 297,000 gallons, constructed in 2005 and storing ammonium nitrate solution;
- (c) Four (4) storage tanks, identified as T-13, T-14, T-16, and T-18, each with a maximum capacity of 23,500, 12,000, 12,000 and 12,100 gallons, respectively, constructed in 1996 and storing oil blend;
- (d) Four (4) storage tanks, identified as T-11, T-12, T-15, and T-17, each with a maximum capacity of 13,000, 13,000, 23,500 and 23,500 gallons, respectively, constructed in 1996 and storing ammonium nitrate solution;
- (e) Eight (8) fixed cone roof vertical storage tanks, identified as T-1, T-2, T-5, T-6, T-7, T-8, T-9, and T-10, each with a maximum capacity of 12,500 gallons, constructed in 1996 and storing explosives emulsions;
- (f) Five (5) storage bins, identified as T-3, T-22, T-23, T-24, and T-25, each with a maximum capacity of 60 tons, constructed in 1996, 1999, 1999 and 1999, respectively, and storing ammonium nitrate prills;
- (g) Three (3) horizontal storage tanks, identified as T-4, T-19, and T-20, each with a maximum capacity of 12,000, 6,000 and 275 gallons, respectively, constructed in 1995 and storing #2 fuel oil;
- (h) One (1) water/glycol tank, identified as W/G-1, constructed in 1996 and with a maximum capacity of 400 gallons; and
- (i) Three (3) hydraulic tanks, identified as HT-1, HT-2, and HT-3, constructed in 1996 and each with a maximum capacity of 110, 130, and 110 gallons, respectively.

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

## Emission Limitations and Standards

### D.2.1 Particulate Matter (PM) [326 IAC 6-2-4]

---

- (a) Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitation for facilities specified in 326 IAC 6-2-1(d)), the PM from each 5.25 MMBtu per hour heat input boiler, identified as SB-1 and SB-2, shall be limited to 0.59 pounds per MMBtu heat input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.  
Q = Total source maximum operating capacity rating in MMBtu/hr  
= 10.5 MMBtu/hr

- (b) Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitation for facilities specified in 326 IAC 6-2-1(d)), the PM from the 5.0 MMBtu per hour heat input boiler, identified as SB-3, shall be limited to 0.53 pounds per MMBtu heat input.

This limitation is based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where: Pt = Pounds of particulate matter emitted per million Btu (lb/MMBtu) heat input.  
Q = Total source maximum operating capacity rating in MMBtu/hr  
= 15.5 MMBtu/hr

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

**MINOR SOURCE OPERATING PERMIT  
ANNUAL NOTIFICATION**

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

<b>Company Name:</b>	<b>Orica USA, Inc.</b>
<b>Address:</b>	<b>6200 East Highway 62, Building 3019</b>
<b>City:</b>	<b>Jeffersonville, Indiana 47130</b>
<b>Phone #:</b>	<b>(812) 256-5983</b>
<b>MSOP #:</b>	<b>019-20631-00080</b>

I hereby certify that **Orica USA, Inc.** is  still in operation.  
 no longer in operation.

I hereby certify that **Orica USA, Inc.** is  in compliance with the requirements of MSOP **019-20631-00080**.  
 not in compliance with the requirements of MSOP **019-20631-00080**.

<b>Authorized Individual (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

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

<b>Noncompliance:</b>

**MALFUNCTION REPORT**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR QUALITY  
FAX NUMBER - 317 233-5967**

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

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

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

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

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

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

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/19\_\_\_\_        \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE \_\_\_\_/\_\_\_\_/19\_\_\_\_        \_\_\_\_\_ AM/PM

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

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_

INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ TITLE: \_\_\_\_\_  
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

\*SEE PAGE 2

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

**326 IAC 1-6-1 Applicability of rule**

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

**326 IAC 1-2-39 "Malfunction" definition**

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

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

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

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

Technical Support Document (TSD) for Minor Source Operating Permit

**Source Background and Description**

**Source Name:** Orica USA, Inc.  
**Source Location:** 6200 East Highway 62, Building 3019, Jeffersonville, Indiana 47130  
**County:** Clark  
**SIC Code:** 2892  
**Operation Permit No.:** 019-20631-00080  
**Issuance Date:** September 9, 2005  
**Permit Reviewer:** Gaurav Shil/EVP

The Office of Air Quality (OAQ) has reviewed an application from Orica USA, Inc. relating to the operation of explosive production plant for manufacturing bulk and packaged emulsion explosives.

**History**

The existing explosive production plant currently operates under Registration no. 019-16158-00080, issued on November 19, 2002. The Permittee proposed to construct one (1) diesel fired boiler, having a maximum heat input rate of 5 million British thermal units per hour per hour (150 HP power output rate), with associated 6,000 gallon diesel above ground storage tank (AST), two (2) 297,000 gallons ammonium nitrate solution ASTs and a 115 HP emergency generator at the existing source. Due to the increase in NO<sub>x</sub> and SO<sub>2</sub> emissions associated with the proposed equipment, the Permittee will be subject to the requirements of 326 IAC 2-6.1, Minor Source Operating Permit Program and this request is processed as a transition from a Registration to a Minor Source Operating Permit. The potential to emit from the proposed modification is less than the thresholds specified in 326 IAC 2-1.1-3 (e)(1). Therefore, the proposed modification is exempt from the new source requirements in 326 IAC 2-5.1-3 for permits.

**New Emission Units and Pollution Control Equipment**

The source consists of the following new emission units and pollution control devices:

- (a) One (1) diesel fired boiler, constructed in 2005, identified as SB-3, with a maximum heat input rate of 5.0 million British thermal units per hour, exhausting to one (1) stack ID # S-8;
- (b) One (1) diesel fired emergency generator, identified as EG-2, constructed in 2005, with a maximum power output rate of 115 HP and exhausting to one (1) stack ID # S-9;
- (c) One (1) storage tank, identified as T-26, with a maximum capacity of 6,000 gallons, constructed in 2005 and storing diesel fuel; and
- (d) Two (2) storage tanks, identified as T-27 and T-28, each with a maximum capacity of 297,000 gallons, constructed in 2005 and storing ammonium nitrate solution.

**Permitted Emission Units and Pollution Control Equipment**

The source consists of the following permitted emission units and pollution control devices:

- (a) One (1) ammonium nitrate prill conveying system, with a maximum capacity of 45,000 pounds per hour of ammonium nitrate prills, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-2;
- (b) One (1) propellant pneumatic conveying system, with a maximum capacity of 9,000 pounds per hour of propellant, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-4;
- (c) One (1) aluminum pneumatic conveying system, with a maximum capacity of 3,150 pounds per hour of microballoons, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-6;
- (d) One (1) microballoon pneumatic conveying system, with a maximum capacity of 2,700 pounds per hour of microballoons, constructed in 1996, using baghouse as control, and exhausting to one (1) stack ID # S-5;
- (e) One (1) fixed flat top vertical storage tank, identified as T-21, with a maximum capacity of 5,120 cubic feet, constructed in 1999, storing microballoons and using baghouse as control;
- (f) Two (2) distillate fuel oil fired boilers, identified as SB-1 and SB-2, constructed in 1996, with a maximum heat input rate of 5.25 million British thermal units per hour, each exhausting to one (1) stack ID # S-1 and S-7, respectively;
- (g) One (1) diesel fired emergency generator, identified as EG-1, constructed in 1996, with a maximum power output rate of 134 HP and exhausting to one (1) stack ID # S-3;
- (h) Four (4) storage tanks, identified as T-13, T-14, T-16, and T-18, each with a maximum capacity of 23,500, 12,000, 12,000 and 12,100 gallons, respectively, constructed in 1996 and storing oil blend;
- (i) Four (4) storage tanks, identified as T-11, T-12, T-15, and T-17, each with a maximum capacity of 13,000, 13,000, 23,500 and 23,500 gallons, respectively, constructed in 1996 and storing ammonium nitrate solution;
- (j) Eight (8) fixed cone roof vertical storage tanks, identified as T-1, T-2, T-5, T-6, T-7, T-8, T-9, and T-10, each with a maximum capacity of 12,500 gallons, constructed in 1996 and storing explosives emulsions;
- (k) Five (5) storage bins, identified as T-3, T-22, T-23, T-24, and T-25, each with a maximum capacity of 60 tons, constructed in 1996, 1999, 1999 and 1999, respectively, and storing ammonium nitrate prills;
- (l) Three (3) horizontal storage tanks, identified as T-4, T-19, and T-20, each with a maximum capacity of 12,000, 6,000 and 275 gallons, respectively, constructed in 1995 and storing #2 fuel oil;
- (m) One (1) water/glycol tank, identified as W/G-1, constructed in 1996 and with a maximum capacity of 400 gallons; and
- (n) Three (3) hydraulic tanks, identified as HT-1, HT-2, and HT-3, constructed in 1996 and each with a maximum capacity of 110, 130, and 110 gallons, respectively.

## Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted emission units operating at this source during this review process.

## Existing Approvals

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

- (a) Registration no. 019-16158-00080, issued on November 19, 2002.

All terms and conditions of previous permits issued pursuant to permitting programs approved into the state implementation plan have been either incorporated as originally stated, revised, or deleted by this permit. All previous registrations and permits are superseded by this permit.

The following terms and conditions from previous approvals have been determined no longer applicable; therefore, they were not incorporated into this MSOP:

- (a) Registration no. 019-16158-00080 issued on November 19, 2002, Condition 5, Emission Reporting

*Reason not incorporated:* 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 or Porter counties, 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 and condition 5 is not included in this permit.

- (b) Registration no. 019-16158-00080 issued on November 19, 2002, Condition 1 (b), New Source Performance Standards [326 IAC 12] and [40 CFR 60.110b, Subpart Kb – Standards of Performance for Volatile Organic Liquid (VOL) Storage Vessels]

*Reason not incorporated:* Pursuant to 40 CFR 60.110b (a), the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.110b, Subpart Kb) apply to any volatile organic liquid (VOL) storage vessel with a capacity of 75 m<sup>3</sup> (19,800 gallon) or greater for which construction commenced after July 23, 1984. Pursuant to 40 CFR 60.110b (b), the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.110b, Subpart Kb) do not apply to any volatile organic liquid (VOL) storage vessel with a capacity greater than or equal to 75 m<sup>3</sup> (19,800 gallon) but less than 151 m<sup>3</sup> (39,890 gallon) storing a liquid with a maximum true vapor pressure less than 15 kPa. The liquid stored in each tank at the source has a maximum true vapor pressure of less than 15 kPa. Therefore, pursuant to 40 CFR 60.110b (b), as amended in the October 15, 2003 Federal Register, the requirements of this rule are not included in the permit for any storage tank. There are no requirements included in the permit for storage tanks, identified as T-11, T-12, T-15 and T-17, because these tanks do not store any volatile organic liquid as defined in 40 CFR 60.111b.

## Enforcement Issue

There are no enforcement actions pending.

**Stack Summary**

Stack ID	Operation	Height (ft)	Dia (ft)	Flow Rate (acfm)	Temperature (°F)
S-1	Boiler (SB-1)	22	1.5	2280	450
S-2	Ammonium Nitrate Prill Conveying	26	0.25	200	Ambient
S-3	Emergency Generator (EG-1)	23	0.33	820	975
S-4	Propellant Pneumatic Conveying	16	0.25	413	Ambient
S-5	Microballoon Pneumatic Conveying	51	0.5	100	Ambient
S-6	Aluminium Pneumatic Conveying	13	0.166	35	Ambient
S-7	Boiler (SB-2)	22	1.5	2280	450
S-8	Boiler (SB-3)	22	1.5	2280	450
S-9	Emergency generator (EG-2)	23	0.33	820	975

**Recommendation**

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on January 28, 2005, with additional information received on May 27, 2005.

**Emission Calculations**

See Appendix A of this document for detailed emission calculations (Pages 1 to 6).

**Potential to Emit of the Source Before Controls**

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

Pollutant	Potential to Emit (tons/yr)
PM	5.31
PM-10	5.31
SO <sub>2</sub>	32.53
VOC	0.37
CO	2.86
NO <sub>x</sub>	11.70
HAPs	Negligible

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of SO<sub>2</sub> is greater than 25 tons per year and less than 100 tons per year. Therefore the source, previously operating under Registration 019-16158-00080, is now subject to the provisions of 326 IAC 2-6.1. An MSOP will be issued.
- (b) Fugitive Emissions  
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

### County Attainment Status

The source is located in Clark County.

Pollutant	Status
PM-10	Attainment
PM-2.5	Nonattainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Basic nonattainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and Nitrogen Oxides (NO<sub>x</sub>) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Clark County has been designated as nonattainment for the 8-hour ozone standard. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Emissions Offset, 326 IAC 2-3 review.
- (b) Clark County has been classified as nonattainment for PM<sub>2.5</sub> in 70 FR 943 dated January 5, 2005. Until U.S. EPA adopts specific New Source Review rules for PM<sub>2.5</sub> emissions, it has directed states to regulate PM<sub>10</sub> emissions as surrogate for PM<sub>2.5</sub> emissions pursuant to the Non-attainment New Source Review requirements. See the State Rule Applicability for the source section.
- (c) Clark County has been classified as attainment or unclassifiable in Indiana for all other pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability for the source section.

### Source Status

Existing Source PSD, Part 70, or FESOP Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	6.17
PM-10	6.17
SO <sub>2</sub>	24.5
VOC	1.63
CO	5.52
NO <sub>x</sub>	24.79
HAPs	Negligible

- (a) This existing source is not a major stationary source for PSD review because no attainment pollutant is emitted at a rate greater than 250 tons per year.
- (b) Clark County was designated as non-attainment for the 8-hour ozone standard and PM<sub>2.5</sub> on June 15, 2004 and January 5, 2005, respectively and VOC, NO<sub>x</sub> and PM-10 are emitted at a rate less than 100 tons per year. Therefore, this existing source is not a major stationary source under Emission Offset, 326 IAC 2-3 or Nonattainment New Source Review, 326 IAC 2-1.1-5.
- (c) These emissions are based upon the Registration 019-16158-00080 issued on November 19, 2002.

**Proposed Modification**

PTE from the proposed modification (based on 8760 hours of operation per year at rated capacity including enforceable emission control and production limit where applicable):

Pollutant	PM (ton/yr)	PM-10 (ton/yr)	SO <sub>2</sub> (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO <sub>x</sub> (ton/yr)
Proposed Modification	0.38	0.38	9.16	0.13	0.99	4.09
PSD or Offset Threshold Level	250	250	250	100	250	100

- (a) This modification to an existing minor stationary source is not major because the emission increase is less than the PSD major source levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (b) This modification to an existing minor stationary source is not major because the emission increase is less than the Emission Offset major source levels. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.
- (c) The potential to emit each regulated air pollutant from the proposed modification is less than the thresholds specified in 326 IAC 2-1.1-3 (e)(1). Therefore, the proposed modification is exempt from the new source requirements in 326 IAC 2-5.1-3 for permits.

## Part 70 Permit Determination

### 326 IAC 2-7 (Part 70 Permit Program)

This existing source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This status is based on all the air approvals issued to the source.

## Federal Rule Applicability

- (a) The requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.110a, Subpart Ka) are not included in the permit because the source does not have any storage vessel with storage capacity greater than 40,000 gallons that is used to store petroleum liquids for which construction is commenced after May 18, 1978.
- (b) Pursuant to 40 CFR 60.110b (a), the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.110b, Subpart Kb) apply to any volatile organic liquid (VOL) storage vessel with a capacity of 75 m<sup>3</sup> (19,800 gallon) or greater for which construction commenced after July 23, 1984. Pursuant to 40 CFR 60.110b (b), the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.110b, Subpart Kb) do not apply to any volatile organic liquid (VOL) storage vessel with a capacity greater than or equal to 75 m<sup>3</sup> (19,800 gallon) but less than 151 m<sup>3</sup> (39,890 gallon) storing a liquid with a maximum true vapor pressure less than 15 kPa. The liquid stored in each tank has a maximum true vapor pressure of less than 15 kPa. Therefore, pursuant to 40 CFR 60.110b (b), as amended in the October 15, 2003 Federal Register, the requirements of this rule are not included in the permit for any storage tank.
- (c) Pursuant to 40 CFR 60.40c, the requirements of the New Source Performance Standard, 326 IAC 12, (40 CFR 60.40c, Subpart Dc) apply to each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 100 million Btu per hour (MMBtu/hr) or less but greater than 10 MMBtu/hr.

The requirements of 40 CFR 60.40c are not included in the permit for the two (2) distillate fuel oil fired boilers and one (1) diesel fired boiler, identified as SB-1, SB-2 and SB-3, each with a rated heat input capacity of 5.25, 5.25 and 5 MMBtu/hr, respectively, because their rated heat input capacity is less than the rule applicability threshold of 10 MMBtu/hr.

- (d) The requirements of National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (40 CFR 63.6585, Subpart ZZZZ) are not included in the permit since the two (2) stationary RICE at this source are emergency stationary RICE, as defined at §63.6675 and the source is not a major source of HAP emissions. Therefore, the requirements of Subpart ZZZZ are not included in the permit and the permittee is not subject to the initial notification requirements.
- (e) The requirements of National Emission Standards for Hazardous Air Pollutants (NESHAP) for Industrial, Commercial, and Institutional Boilers and Process Heaters, (40 CFR 63.7485, Subpart DDDDD), are not included in the permit since the source is not a major source of hazardous air pollutants as defined in 40 CFR 63.2.

## State Rule Applicability – Entire Source

### 326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source, which is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2, is not subject to the requirements of 326 IAC 2-2 (PSD). The potential emissions of all attainment criteria pollutants, including emissions from the proposed modification, are less than 250 tons per year; therefore, this source is not a major PSD source.

### 326 IAC 2-3 (Emission Offset)

Clark County has been designated as nonattainment for the 8-hour ozone standard. However, since the potential to emit of VOC and NO<sub>x</sub>, including emissions from the proposed modification, are each less than 100 tons per year, this source is a minor source under 326 IAC 2-3, Emission Offset.

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

The operation of this source will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

### 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 or Porter counties, 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 the permit:

- (a) Opacity shall not exceed an average of thirty percent (30%) 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 6-5 (Fugitive Particulate Matter Emission Limitations)

This source is located in the portion of Clark County included in Jeffersonville Township. However, the source-wide potential to emit fugitive particulate matter is negligible. Therefore, 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations) does not apply to this source.

### 326 IAC 7-1.1-1 (Sulfur Dioxide Emissions Limitation)

The requirements of 326 IAC 7-1.1-1 (Sulfur Dioxide Emissions Limitation) do not apply to this source because the potential to emit SO<sub>2</sub> is less than 25 tons per year or 10 pounds per hour.

### 326 IAC 8-6-1 (Organic Solvent Emission Limitations)

326 IAC 8-6-1 is not applicable to this source since the source is located in Clark County and the source-wide potential VOC emissions are less than one hundred (100) tons per year.

## State Rule Applicability – Individual Facilities

### 326 IAC 6-1 (Particulate Limitations)

This rule applies to specifically listed sources or facilities, or sources or facilities not specifically listed but located in a listed county and having either a potential to emit of 100 tons per year (tpy) or more or actual emissions of 10 tpy or more of PM. The source has PTE and actual controlled particulate matter emissions less than one hundred (100) tons per year and ten (10) tons per year, respectively. Therefore, the requirements of 326 IAC 6-1 do not apply and, instead, the requirements of 326 IAC 6-3 are applicable to this source.

### 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating)

The particulate matter (PM) emissions from the three (3) boilers (SB-1, SB-2 and SB-3) shall each be limited by the following:

The three (3) boilers (SB-1, SB-2 and SB-3), each with a maximum heat input capacity of 5.25, 5.25 and 5.0 MMBtu per hour, respectively, constructed on or after September 21, 1983, are subject to 326 IAC 6-2-4. Pursuant to this rule, particulate emissions from indirect heating facilities constructed after September 21, 1983, shall be limited by the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

where: Pt = pounds of PM emitted per MMBtu (lb/MMBtu) heat input  
Q = total source maximum operating capacity rating in million Btu per hour (MMBtu/hr) heat input.

Pt for each SB-1 and SB-2 is based on both the boilers, which were constructed in 1996, with a total heat input of 10.5 MMBtu/hr (SB-1 and SB-2 each at 5.25 MMBtu/hr).

$$Pt = \frac{1.09}{(10.5)^{0.26}} = 0.59 \text{ lb/MMBtu}$$

Pt for SB-3, constructed in 2005, is based on all three boilers, with a total heat input of 15.5 MMBtu/hr (SB-1 and SB-2 each at 5.25 MMBtu/hr and SB-3 at 5 MMBtu/hr).

$$Pt = \frac{1.09}{(15.5)^{0.26}} = 0.53 \text{ lb/MMBtu}$$

The allowable particulate emission rate from each boiler, identified as SB-1 and SB-2, based on the above equation, is 0.59 pounds per MMBtu heat input and the allowable particulate emission rate from boiler SB-3 is 0.53 pounds per MMBtu heat input. Boilers SB-1, SB-2 and SB-3 have a potential PM emission rate of 0.01, 0.01 and 0.005 pounds per MMBtu heat input, respectively; therefore, SB-1, SB-2 and SB-3 will comply with 326 IAC 6-2-4 (see Appendix A, pages 2 and 3, for detailed compliance calculations).

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

The particulate from the facilities at this source with the changes due to this revision incorporated shall be limited as specified in the following table:

Emission Unit	Process Weight Rate (tons per hour)	Allowable PM Emission Rate (pounds per hour)	Potential PM Emission Rate After Controls (if applicable) (pounds per hour)
Ammonia Nitrate Prill Conveying System (S-2)	22.5	33.02	0.45 (controlled)
Propellant Pneumatic Conveying System (S-4)	4.5	11.23	0.35 (controlled)
Aluminum Pneumatic Conveying System (S-6)	1.58	5.56	0.015 (controlled)
Microballoon Pneumatic Conveying System (S-5)	1.35	5.01	0.009 (controlled)
Microballoon Storage Tank Baghouse	1.35	5.01	0.13 (controlled)

The allowable particulate matter (PM) emission rates from the above facilities were calculated by the following:

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:

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

The baghouses for ammonia nitrate prill conveying system, propellant pneumatic conveying system, aluminum pneumatic conveying system, microballoon pneumatic conveying system and microballoon storage tank shall be in operation at all times when the operations are performed to comply with this limit.

**326 IAC 8-1-6 (New Facilities; General VOC Reduction Requirements)**

This rule applies to facilities located anywhere in the state that were constructed on or after January 1, 1980, which have a potential to emit (PTE) VOC at 25 tons per year or more, and which are not otherwise regulated by another provision of Article 8. No new facility at this source has a PTE VOC at 25 tons per year or more. Therefore, 326 IAC 8-1-6 is not applicable to this source.

**326 IAC 8-4-3 (Petroleum Liquid Storage Tanks)**

This rule applies to all petroleum liquid storage vessels with capacities greater than one hundred fifty thousand (150,000) liters (thirty-nine thousand (39,000) gallons) containing volatile organic compounds whose true vapor pressure is greater than 10.5 kPa (1.52 psi). No petroleum liquid storage vessel at the source has a capacity greater than 39,000 gallons and therefore, 326 IAC 8-4-3 is not applicable to this source.

**326 IAC 10-1-1 (Nitrogen Oxides Control in Clark and Floyd Counties)**

The source has potential to emit less than one hundred (100) tons per year of NOx and no facility has potential to emit NOx greater than or equal to forty (40) tons per year. Therefore, 326 IAC 10-1-1 is not applicable to this source.

**Conclusion**

The construction and operation of this explosives production plant for manufacturing bulk and packaged emulsion explosives shall be subject to the conditions of the Minor Source Operating Permit 019-20631-00080.

Appendix A: Emissions Calculations						
Sourcewide Emissions Summary						
<b>Company Name:</b>		Orica USA, Inc.				
<b>Address City IN Zip:</b>		6200 East Highway 62, Jeffersonville, Indiana				
<b>MSOP No.:</b>		019-20631-00080				
<b>Reviewer:</b>		Gaurav Shil/EVP				
<b>Date:</b>		09/09/05				
<b>Potential Emissions (tons/year)</b>						
Emissions Generating Activity						
Pollutant	Two (2) Diesel Fired Steam Boilers	One (1) 150 HP Diesel Fired Boiler	Two (2) Emergency Generators	Baghouse Stacks <sup>(1)</sup>	Storage and Process Tanks	TOTAL
PM	0.66	0.32	0.14	4.19	0.00	5.31
PM10	0.66	0.32	0.14	4.19	0.00	5.31
SO2	23.32	9.08	0.13	0.00	0.00	32.53
NOx	6.57	3.20	1.93	0.00	0.00	11.70
VOC	0.11	0.05	0.16	0.00	0.05	0.37
CO	1.64	0.80	0.42	0.00	0.00	2.86
total HAPs	negligible	negligible	negligible	0.00	negligible	negligible
Total emissions based on rated capacity at 8,760 hours/year, except for emergency generators.						
<u>Notes</u>						
(1) Including particulate emissions from ammonium nitrate prill conveying						

**Appendix A: Emissions Calculations**  
**Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)**  
**No. 2 Distillate Fuel Oil (Boilers SB-1 and SB-2)**

**Company Name:** Orica USA, Inc.  
**Address City IN Zip:** 6200 East Highway 62, Jeffersonville, Indiana  
**MSOP No.:** 019-20631-00080  
**Reviewer:** Gaurav Shil/EVP  
**Date:** 09/09/05

Heat Input Capacity* MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur 0.5
10.5	657	

\* 2 boilers each @ 5.25 mmBtu/hr

Emission Factor in lb/kgal	Pollutant				
	PM*	SO2	NOx	VOC	CO
	2.0	71 (142.0S)	20.0	0.34	5.0
Potential Emission in tons/yr	0.7	23.3	6.6	0.1	1.6

**Methodology**

1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu  
 Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu  
 Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98  
 \*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.  
 Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

**Compliance with 326 IAC 6-2-4 (Particulate Emissions for Sources of Indirect Heating)**

Two (2) Boilers (ID # SB-1 and SB-2)  
 The following calculation demonstrates compliance with the allowable PM emission limit of 0.59 lb/MMBtu for SB-1 and SB-2 respectively pursuant to 326 IAC 6-2-4:

Maximum heat input capacity (for SB-1)	10.50 MM Btu per hour (total for both boilers)	
Maximum heat input capacity (for SB-2)	10.50 MM Btu per hour (total for both boilers)	
<b>SB-1 PM emissions</b>	<b>.0143 pound per MMBTU which</b>	<b>will comply with the allowable PM emission limit of 0.59 lb/MMBtu</b>
<b>SB-2 PM emissions</b>	<b>.0143 pound per MMBTU which</b>	<b>will comply with the allowable PM emission limit of 0.59 lb/MMBtu</b>

**Methodology**

PM emissions (lb/MMBtu) = [(PM emission from natural gas boiler, tpy) \* 2000 lb/ton] / [8760 hours \* maximum heat input capacity, MMBtu/hr]

**Appendix A: Emissions Calculations**  
**Commercial/Institutional/Residential Combustors (< 100 mmBtu/hr)**  
**Distillate Fuel Oil (Boiler SB-3)**

**Company Name:** Orica USA, Inc.  
**Address City IN Zip:** 6200 East Highway 62, Jeffersonville, Indiana  
**MSOP No.:** 019-20631-00080  
**Reviewer:** Gaurav Shil/EVP  
**Date:** 09/09/05

Heat Input Capacity* MMBtu/hr	Potential Throughput kgals/year	S = Weight % Sulfur <b>0.4</b>
<b>5</b>	319.71	

Emission Factor in lb/kgal	Pollutant				
	PM*	SO2	NOx	VOC	CO
	2.0	56.8 (142.0S)	20.0	0.34	5.0
Potential Emission in tons/yr	0.320	9.1	3.2	0.054	0.80

**Methodology**

1 gallon of Distillate Oil has a heating value of 137,000 Btu  
 Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.137 MM Btu  
 Emission Factors are from AP 42, Tables 1.3-1, 1.3-2, and 1.3-3 (SCC 1-03-005-01/02/03) Supplement E 9/98  
 \*PM emission factor is filterable PM only. Condensable PM emission factor is 1.3 lb/kgal.  
 Emission (tons/yr) = Throughput (kgals/ yr) x Emission Factor (lb/kgal)/2,000 lb/ton

**Compliance with 326 IAC 6-2-4 (Particulate Emissions for Sources of Indirect Heating)**

The following calculation demonstrates compliance with the allowable PM emission limit of 0.53 lb/MMBtu for SB-3 pursuant to 326 IAC 6-2-4:

Maximum heat input capacity	15.50 MM Btu per hour (total for both boilers)
<b>SB-3 PM emissions</b>	<b>.0047 lb/MMBTU which will comply with the allowable PM emission limit of 0.53 lb/MMBtu</b>

**Methodology**

PM emissions (lb/MMBtu) = [(PM emission from natural gas boiler, tpy) \* 2000 lb/ton] / [8760 hours \* maximum heat input capacity, MMBtu/hr]

**Appendix A: Emission Calculations  
Internal Combustion Engines - Diesel Fuel  
Emergency Generators (EG-1 and EG-2)**

**Company Name:** Orica USA, Inc.  
**Address City IN Zip:** 6200 East Highway 62, Jeffersonville, Indiana  
**MSOP No.:** 019-20631-00080  
**Reviewer:** Gaurav Shil/EVP  
**Date:** 09/09/05

**Potential Emissions calculated based on 8760 hours per year.**

Generator Output Capacity\*  
HP

249

Emission Factor in lb/HP-hr	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	2.20E-03	2.20E-03	2.05E-03	0.031	2.51E-03	6.68E-03
Potential Emission in tons/yr	2.40	2.40	2.24	33.81	2.74	7.29

**Potential Emissions calculated based on 500 hours per year for emergency generators**

Generator Output Capacity  
HP

249

Emission Factor in lb/MMBtu	Pollutant					
	PM	PM10	SO2	NOx	VOC	CO
	2.20E-03	2.20E-03	2.05E-03	0.031	2.51E-03	6.68E-03
Potential Emission in tons/yr	0.137	0.137	0.128	1.930	0.156	0.416

**Methodology**

\* Total power output capacity for two emergency generators (EG-1 = 134 hp and EG-2 = 115 hp)  
 100 kVA = 100 kW, 1 kW = 1.34 hp  
 Emission Factors are from AP42 (Fifth edition, October 1996), Table 3.3-1  
 Potential Emission (tons/yr) = [Power output rate (hp) x Emission Factor (lb/hp-hr)] \* 8760 hr/yr / (2,000 lb/ton )  
 Actual Emission (tons/yr) = [Power Output rate (hp) x Emission Factor (lb/hp-hr)] \* 500 hr/yr / (2,000 lb/ton )

**Appendix A: Emission Calculations  
Baghouses Stacks Emissions**

**Company Name: Orica USA, Inc.**  
**Address City IN Zip: 6200 East Highway 62, Jeffersonville, Indiana**  
**MSOP No.: 019-20631-00080**  
**Reviewer: Gaurav Shil/EVP**  
**Date: 09/09/05**

Emission Unit ID	Emission Unit Description	Outlet Grain Loading (gr/acf)	Control Device Fan Flow Rate (acfm)	Controlled PM Emission Rate		Process Weight Rate (lb/hr)	326 IAC 6-3-2 PM Emission Rate (lb/hr)	Equivalent 326 IAC 6-3-2 PM Emission Rate (tons per year)
				(lb/hr)	(tons/yr)			
S-4	Propellant Pneumatic Conveying System Baghouse	0.1	413.96	0.3548	1.5541	9,000	11.23	49.19
S-5	Microballoon Pneumatic Conveying System Baghouse	0.01	101.22	0.0087	0.0380	2,700	5.01	21.96
S-6	Aluminium Pneumatic Conveying System Baghouse	0.050	35.01	0.0150	0.0657	3,150	5.56	24.35
T-21	Microballoon Storage Tank Baghouse	0.020	750	0.1286	0.5631	2,700	5.01	21.96

For **ammonium nitrate prill conveying**: (based on Registration no. 019-16158-00080 issued on November 19, 2002)

PM emission factor = 0.02 lb/ton, SCC 3-01-027-09

$$\text{PM/PM-10 emissions (lb/hr)} = \text{Process rate (lb/hr)} \times (1/2000 \text{ lb/ton}) \times (0.02 \text{ lb/ton}) = 0.45$$

$$= 1.971 \text{ tpy}$$

Allowable PM emissions rate pursuant to 326 IAC 6-3-2 (c), lb/hr = 33.02

**Methodology:**

Potential controlled Emissions (tons/yr) = Outlet Loading (grains/acf) \* Fan Flow Rate (acfm) \* 1 lb/7,000 grains \* 60 min/hr \* 8760 hr/yr \* 1 ton/2,000 lbs  
 Total PM is assumed equal to PM-10.

The allowable PM emission rate pursuant to 326 IAC 6-3-2(c), Process Operations, for weight rates up to 60,000 lb/hr is determined using the following formula:

$$E = 4.1 * P^{0.67}$$

where: E = allowable PM emission rate (lb/hr)  
 P = process weight rate (tons/hr)

**Appendix A: Emission Calculations  
Storage and Process Tanks VOC Emissions - Maximum PTE**

**Company Name:** Orica USA, Inc.  
**Address City IN Zip:** 6200 East Highway 62, Jeffersonville, Indiana  
**MSOP No.:** 019-20631-00080  
**Reviewer:** Gaurav Shil/EVP  
**Date:** 09/09/05

Tank Number	Product Stored	Losses (Pounds per Year)		Total VOC lbs/yr	Losses (Tons per Year)		Total VOC Tons/yr
		Breathing	Working		Breathing	Working	
T-26 <sup>(1)</sup>	Diesel	1.66	0.56	2.22	8.30E-04	2.80E-04	1.11E-03
T-1	Explosives emulsions	Total VOC working and breathing losses = 0.05 tons per year <sup>(2)</sup>					
T-2	Explosives emulsions						
T-4	No. 2 fuel oil						
T-5	Explosives emulsions						
T-6	Explosives emulsions						
T-7	Explosives emulsions						
T-8	Explosives emulsions						
T-9	Explosives emulsions						
T-10	Explosives emulsions						
T-13	Oil blend						
T-14	Oil blend						
T-16	Oil blend						
T-18	Oil blend						
T-19	No. 2 fuel oil						
T-20	No. 2 fuel oil						
T-3	Ammonium nitrate prills	No regulated air pollutant emissions <sup>(3)</sup>					
T-11	Ammonium nitrate solution						
T-12	Ammonium nitrate solution						
T-15	Ammonium nitrate solution						
T-17	Ammonium nitrate solution	Only PM emissions (Please refer page 5 of 7)					
T-21	Microballoons						
T-22	Ammonium nitrate prills	No regulated air pollutant emissions <sup>(3)</sup>					
T-23	Ammonium nitrate prills						
T-24	Ammonium nitrate prills						
T-25	Ammonium nitrate prills						
T-27 <sup>(1)</sup>	Ammonium nitrate solution						
T-28 <sup>(1)</sup>	Ammonium nitrate solution						

**Total VOC Emissions (tons per year) 5.11E-02**

**Notes:**

- (1) Storage tanks, identified as T-26, T-27 and T-28, are new storage tanks to be constructed in 2005. All other storage tanks are operating under Registration no. 019-16158-00080, issued on November 19, 2002. VOC losses from T-26 are based on Tanks 4.0 analysis and is based on the estimated maximum annual throughput for each tank.
- (2) Total VOC working and breathing losses for existing storage tanks is based on Tanks 4.0 analysis performed with Registration no. 019-16158-00080, issued on November 19, 2002 and is based on the estimated maximum annual throughput for each tank.
- (3) Ammonium nitrate is not a regulated air pollutant.