

STATE OF MISSOURI



PERMIT BOOK

DEPARTMENT OF NATURAL RESOURCES

MISSOURI AIR CONSERVATION COMMISSION

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: 063200088-00088 Project Number: 2008-03-032

Parent Company: Dyno Nobel, Inc.

Parent Company Address: 2650 Decker Lake Boulevard, Suite 300 Salt Lake City, UT 84119

Installation Name: Dyno Nobel, Inc. - Carthage

Installation Address: 17562 Gum Road, Carthage, MO 64836

Location Information: Jasper County, S13, T28N, R32W

Application for Authority to Construct was made for: The modification of the Superior Boiler to combust Renewable Environmental Solutions, LLC biofuel and the modification of the acid stablization system in the pentaerythritol tetranitrate (PETN) Nitration facility. This review was conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, Construction Permits Required.

Standard Conditions (on reverse) are applicable to this permit.

Standard Conditions (on reverse) and Special Conditions are applicable to this permit.

JUN 19 2008

EFFECTIVE DATE

James L. Kawenoch
DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STATE OF MISSOURI



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DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. In the event that there is a discrepancy between the permit application and this permit, the conditions of this permit shall take precedence. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the departments' Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed special conditions to the Administrative Hearing Commission (AHC), P.O. Box 1557, Jefferson City, MO 65102, as provided in RSMo 643.075.6 and 621.250.3. If you choose to appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC.

If you choose not to appeal, this certificate, the project review and your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Missouri Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention: Construction Permit Unit.

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Permit No.	
Project No.	2008-03-032

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

Dyno Nobel, Inc.— Carthage
Jasper County, S13, T28N, R32W

1. Production Limit
 - A. Dyno Nobel, Inc.—Carthage shall not produce more than 4,000 tons of pentaerythritol tetranitrate (PETN) in any consecutive 12-month period.
 - B. Dyno Nobel, Inc.—Carthage shall maintain an accurate record of PETN produced for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
 - C. Dyno Nobel, Inc.—Carthage shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 1.B indicate that the source exceeds the limitation of Special Conditions Number 1.A.

2. Wet Scrubber Requirement
 - A. Dyno Nobel, Inc.--Carthage shall control emissions from the PETN nitration line using a wet scrubber as specified in the permit application. The wet scrubber shall be operated and maintained in accordance with
 - B. with a gauge or meter, which indicates the pressure drop across the control device and the scrubber water flow rate to the device. These gauges or meters shall be located such that the DNR employees may easily observe them.
 - C. Dyno Nobel, Inc.--Carthage shall monitor and record the operating pressure drop across the wet scrubber and the scrubber water flow rate to the wet scrubber every 24 hours.
 - D. Dyno Nobel, Inc.--Carthage shall maintain an operating and maintenance log for the wet scrubber:
 - (1) Incidents of malfunction, with impact on emissions, duration of event, probable cause, and corrective actions; and
 - (2) Maintenance activities, with inspection schedule, repair actions, and replacements, etc.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (5) REVIEW

Project Number: 2008-03-032
Installation ID Number: 097-0007
Permit Number:

Dyno Nobel, Inc.– Carthage
17562 Gum Road
Carthage, MO 64836

Complete: March 13, 2008

Parent Company:
Dyno Nobel, Inc.
2650 Decker Lake Boulevard, Suite 300
Salt Lake City, UT 84119

Jasper County, S13, T28N, R32W

REVIEW SUMMARY

- Dyno Nobel, Inc.– Carthage has applied for authority to modify the Superior Boiler to combust Renewable Environmental Solutions, LLC (RES) biofuel and modify the acid stabilization system in the pentaerythritol tetranitrate (PETN) Nitration facility, which will increase the facility's annual production to up to 4,000 tons of PETN.
- Hazardous Air Pollutant (HAP) emissions are not expected from the proposed equipment.
- Subpart Dc of the New Source Performance Standards (NSPS) applies to the Superior Boiler.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) or currently promulgated Maximum Achievable Control Technology (MACT) regulations apply to the proposed equipment.
- A wet scrubber is being used to control the nitrogen oxides (NO_x) emissions from the PETN Nitrator.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of nitrogen oxides (NO_x) are below de minimis levels.
- This installation is located in Jasper County, an attainment area for all criteria air pollutants.
- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].

- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing is not required for the boiler.
- A Part 70 Operating Permit modification is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Dyno Nobel, Inc.—Carthage is an existing major source that manufactures explosives. The installation is located in Carthage, Missouri and holds a Part 70 operating permit.

The following permits have been issued to Dyno Nobel, Inc.— Carthage from the Air Pollution Control Program.

Permit Number	Description
0587-007	Incinerator
1187-003	Acid Mixing Facility
0889-014	Nitration System
0290-011	Emulsion Manufacturing
0491-012	Boiler
1292-009	Paperwrap Emulsion
0395-006	PETN and Ammonium Nitrate
0997-036	2 kettles, ammonium nitrate graining process

PROJECT DESCRIPTION

Dyno Nobel, Inc.—Carthage has applied for authority to modify their Superior Boiler (EP-02) to combust biofuel from Renewable Environmental Solutions, LLC (RES).

Dyno Nobel, Inc.—Carthage has also applied for authority to modify the acid stabilization process and increase the annual production limit to 4,000 tons per year in the PETN nitration line. These requests were submitted as separate projects, but the Air Pollution Control Program has decided to process the requests as one project to avoid issues pertaining to circumvention.

The Superior Boiler has a maximum heat input of 25 million British thermal units per hour (MMBtu/hr) and must be modified to combust the RES biofuel.

The new acid stabilization system will include a pump tank, a feed tank, an acid stabilizer with two stages (two tanks in series), a denitrated acid receiving tank and an acid storage tank. The denitrated acid receiving tank and the acid storage tank are existing pieces of equipment. The pump tank will receive spent acid from the PETN nitration process and the spent acid will be pumped to the feed tank and combined with process water, scrubber blow down and 83% nitric acid. The acid from the feed tank will then proceed to the two-stage acid stabilizer. From the second stage of the acid

stabilizer, the acid will go to the denitrated acid receiving tank and then to the acid storage tank. All the tanks are vented to the wet scrubber (CD12). The new acid stabilization system will increase the residence time of the stabilization process and debottleneck the PETN nitration line. After the modification the PETN nitration line will be able to produce up to 4,000 tons of PETN per year.

EMISSIONS/CONTROLS EVALUATION

Criteria pollutant emissions from the Superior Boiler were calculated using the test results from a Union Boiler Works, boiler at Schreiber Food Inc.—Monett. No HAPs are listed in the material safety data sheet for the RES biofuel, so no HAPs will be emitted. Emissions from the PETN nitration line were calculated using test results conducted on the line in January, 2008. Potential emissions of the application represent the potential of the Superior Boiler combustion RES biofuel and the potential of the PETN nitration line at its new capacity, assuming continuous operation (8760 hours per year.) The following table provides an emissions summary for this project.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory De Minimis Levels	*Existing Potential Emissions	Existing Actual Emissions (2006 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	> 15	5.38	11.59	N/A
SO _x	40.0	< 40	0.05	24.17	N/A
NO _x	40.0	> 40	12.85	29.02	N/A
VOC	40.0	> 40	1.45	0.11	N/A
CO	100.0	> 100	2.87	22.19	N/A
HAPs	10.0/25.0	< 10/25	N/D	N/A	N/A

N/A = Not Applicable; N/D = Not Determined

*Existing Potential Emissions are taken from permit 0997-036

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of NO_x are below de minimis levels.

APPLICABLE REQUIREMENTS

Dyno Nobel, Inc.– Carthage shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required June 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400
- *New Source Performance Regulations*, 10 CSR 10-6.070 – *New Source Performance Standards (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units*, 40 CFR Part 60, Subpart Dc.
- *Restriction of Emission of Sulfur Compounds*, 10 CSR 10-6.260
- *Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating*, 10 CSR 10-3.060

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (5), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Michael Mittermeyer
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct forms, dated 03/07/2008, received 03/10/2008, designating Dyno Nobel, Inc. as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southwest Regional Office Site Survey, dated 03/26/2008.

Mr. Scott Kolb
Environmental Manager
Dyno Nobel, Inc.– Carthage
17562 Gum Road
Carthage, MO 64836

RE: New Source Review Permit - Project Number: 2008-03-032

Dear Mr. Kolb:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files.

Operation in accordance with these conditions, your new source review permit application and with your amended operating permit is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact Michael Mittermeyer, at the departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or at (573) 751-4817. Thank you for your attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:mml

Enclosures

c: Southwest Regional Office
PAMS File: 2008-03-032

Permit Number: