

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: 08 2015 - 010

Project Number: 2015-04-006  
Installation Number: 105-0006

Parent Company: Brunswick Corporation

Parent Company Address: 1 N Field Court, Lake Forest, IL 60045-4811

Installation Name: Lowe Boats, Inc.

Installation Address: 2900 Industrial Drive, Lebanon, MO 65536

Location Information: Laclede County, S27, T34N, R16W

Application for Authority to Construct was made for:  
Burn-off oven. 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.

AUG 18 2015

EFFECTIVE DATE

Handwritten signature of Kyrna L. Moore in cursive script.

DIRECTOR OR DESIGNEE  
DEPARTMENT OF NATURAL RESOURCES

## STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within 18 months from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within 18 months 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 Department's Air Pollution Control Program of the anticipated date of start up of these air contaminant sources. The information must be made available within 30 days of actual startup. 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 these air contaminant sources.

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 sources(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.	2015-04-006

**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."*

Lowe Boats, Inc.  
Laclede County, S27, T34N, R16W

1. Operational Requirements – Burn-Off Oven (EU0220)
  - A. Paint Removal Systems, Inc. shall only remove non-chlorinated, non-hazardous coatings from metal parts with the burn-off oven.
  - B. Paint Removal Systems, Inc. shall only combust natural gas as fuel in the oven.
  - C. Paint Removal Systems, Inc. shall use a direct flame afterburner to control emissions from the burn-off oven. The afterburner shall be operated at a minimum of 1,400 degrees Fahrenheit with more than a one-half (1/2) second residence time to assure a minimum combustion efficiency of 99.9%.
  - D. The burn-off oven shall be equipped with an electronic controlled temperature gauge with digital readout, which is able to monitor and display the temperature in the second combustion chamber to an accuracy of plus or minus two percent (2%).
2. Record Keeping and Reporting Requirements
  - A. Lowe Boats, Inc. shall maintain all records required by this permit for not less than five years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.
  - B. Lowe Boats, Inc. shall report to the Air Pollution Control Program's Compliance/Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than 10 days after the end of the month during which any record required by this permit show an exceedance of a limitation imposed by this permit.

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

Project Number: 2015-04-006  
Installation ID Number: 105-0006  
Permit Number:

Lowe Boats, Inc.  
2900 Industrial Drive  
Lebanon, MO 65536

Complete Date  
of Application: April 14, 2015

Parent Company:  
Brunswick Corporation  
1 N Field Court  
Lake Forest, IL 60045-4811

Laclede County, S27, T34N, R16W

REVIEW SUMMARY

- Lowe Boats, Inc. has applied for authority to install a Burn-off oven.
- HAP emissions are expected from the natural gas combustion but only in amounts less than their respective SMAL.
- None of the New Source Performance Standards (NSPS) apply to the installation. 40 CFR 60, Subpart E, *Standards of Performance for Incinerators*, does not apply to the burn-off ovens because the ovens do not burn solid wastes as defined in this subpart. 40 CFR 60, Subpart CCCC, *Emission Guidelines and Compliance Times for Industrial Solid Waste Incineration Units that Commenced Construction On or Before November 30, 1999*, does not apply to the burn-off ovens because burn-off ovens are not considered incinerators under this subpart. 40 CFR 60, Subpart MM, *Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations*, does not apply to this installation because it is not an automobile or truck assembly plant.
- 40 CFR Part 63, Subpart VVVV, *National Emission Standards for Hazardous Air Pollutants for Boating Manufacturing*, applies to the installation.
- An afterburner is being used to control the PM, PM<sub>10</sub>, PM<sub>2.5</sub>, VOCs, HAPs and CO emissions from the equipment in this permit.
- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of all pollutant are below de minimis levels. All incinerators are required to get a construction permit according to state definition.
- This installation is located in Laclede County, an attainment area for all criteria pollutants.

- This installation is not on the List of Named Installations found in 10 CSR 10-6.020(3)(B), Table 2. The installation's major source level is 250 tons per year and fugitive emissions are not counted toward major source applicability.
- Ambient air quality modeling was not performed since potential emissions of the application are below de minimis levels.
- Emissions testing are not required for the equipment.
- An amendment to your Part 70 Operating Permit is required for this installation within 1 year of equipment startup.
- Approval of this permit is recommended with special conditions.

### INSTALLATION DESCRIPTION

Lowe Boats, Incorporated (Lowe Boats) operates an aluminum boat manufacturing plant in Lebanon, Missouri. The operation consists of metal fabrication, woodworking, surface coating, adhesive application, solvent wipe down, drying ovens and general assembly and storage of the finished units. Lowe Boats is an existing major source of HAPs and is conditioned to below major source levels for VOC emissions.

This installation was issued a Part 70 Operating Permit No. OP2013-012 in March of 2013. The following construction permits have been issued to Lowe Boats from the Air Pollution Control Program.

Table 1: Previously Issued Construction Permits

Permit Number	Description
1097-005	Installation of plywood cutting (EP05), paint booth (EP10), carpet gluing (EP12), solvent usage (EP15), welding (EP19), and plasma cutters (EP20).
092002-011	Installation of two new paint booths and relocation of the existing carpet gluing operations to different areas within this aluminum boat manufacturing plant.
022004-002	Addition of a third wash booth at the installation.
042005-008	Addition of pneumatic spray equipment to an existing paint booth.
072010-008	Addition of four paint booths

### PROJECT DESCRIPTION

Lowe Boats, Inc. is an existing installation and plans to install a Global Finishing Burn Off Oven BBO 5505 for removing excess paint that is left on the painting hooks from various paint lines. The burn-off oven is rated at 0.780 MMBtu/hr and combusts natural gas as fuel. An afterburner will control emissions from the oven.

Since the coatings from metal parts are burned off, this oven is classified as an incinerator. Therefore, a construction permit is required for this oven according to 10 CSR 10-6.060(1)(B).

## EMISSIONS/CONTROLS EVALUATION

Emissions from the burn-off oven are less than the exemption levels given in Missouri State Rules 10 CSR 10-6.061(3)(A)3.A. However, the burn-off oven is considered an incinerator according to Missouri State Rules 10 CSR 10-6.020 and all incinerators are required to obtain a permit in Missouri in accordance with 10 CSR 10-6.060 (1)(B).

The facility submitted emissions data from the manufacturer for PM. However, the manufacturer was not able to provide the stack test report for the specific model burn-off oven being installed and the emissions data could not be verified. The emissions for a burn-off oven are generally calculated assuming that the significant emissions are from the natural gas combustion. Emissions factors for natural gas combustion is in EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Chapter 1.4, *Natural Gas Combustion*, July 2008. To be conservative, PM emissions were calculated using both the manufacturer's data and an emission factor from AP-42 and the highest value was used for this permit. All of the PM were also considered PM<sub>2.5</sub> and PM<sub>10</sub>. The uncontrolled emission factors for SO<sub>x</sub>, NO<sub>x</sub>, CO, VOC and HAPS used in the analysis of the burn off oven's potential emissions were obtained from the Environmental Protection Agency (EPA) document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition Section 1.4, "Natural Gas Combustion," July 2008. The burn off oven is equipped with an afterburner, which acts as a control device.

The following table provides an emissions summary for this project. Existing potential emissions were taken from Permit Number 072010-008. Existing actual emissions were taken from the installation's 2014 EIQ. Potential emissions of the application represent the potential of the new burn-off oven, assuming continuous operation (8760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	<sup>1</sup> Regulatory De Minimis Levels	<sup>2</sup> Existing Potential Emissions	Existing Actual Emissions (2014 EIQ)	Potential Emissions of the Application	Installation Conditioned Potential
PM	25.0	N/D	N/D	0.24	N/A
PM <sub>10</sub>	15.0	3.07	1.40	0.24	N/A
PM <sub>2.5</sub>	10.0	N/D	1.39	0.24	N/A
SO <sub>x</sub>	40.0	N/D	0.01	0.002	N/A
NO <sub>x</sub>	40.0	N/D	0.98	0.33	N/A
VOC	40.0	100.86	60.58	0.02	<249.0
CO	100.0	N/A	0.83	0.28	N/A
HAPs	10.0/25.0	19.13	2.87	0.01	<sup>3</sup> Subpart VVVV
Xylenes	10.0	14.22	N/D	N/D	<sup>3</sup> Subpart VVVV
MIBK	10.0	1.29	N/D	N/D	<sup>3</sup> Subpart VVVV
Ethyl Benzene	10.0	3.08	N/D	N/D	<sup>3</sup> Subpart VVVV
MDI	0.1	0.10	N/D	N/D	<sup>3</sup> Subpart VVVV
Cobalt compounds	0.1	1E-04	N/D	N/D	<sup>3</sup> Subpart VVVV

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

<sup>1</sup> The regulatory levels listed for individual HAPs are Screening Model Action Levels (SMAL).

<sup>2</sup>The installation was permitted with a plantwide limit of 249 ton per year VOCs in Construction Permit No. 072010-008 and Operating Permit No. OP2013-012.

<sup>3</sup>40 CFR Part 63, Subpart VVVV contains HAP emission limitations for aluminum surface coating operations. The MACT regulation limits the weighted-average organic HAP content for all aluminum coating materials in the aluminum surface coating operations. The specifics of the emission limits can be found at 40 CFR §63.5743.

## PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. The entire installation has been conditioned to less than 250 tons of VOC per year. All criteria pollutants for the project are below de minimis levels.

## APPLICABLE REQUIREMENTS

Lowe Boats, Inc. 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*
- *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 10-6.165*

## SPECIFIC REQUIREMENTS

- *Maximum Achievable Control Technology (MACT) Regulations, 10 CSR 10-6.075, National Emission Standards for Hazardous Air Pollutants for Boating Operations, 40 CFR Part 63, Subpart VVVV*

## 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.

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Chad Stephenson  
New Source Review Unit

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Date

## PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated March 24, 2015, received April 2, 2015, designating Brunswick Corporation as the owner and operator of the installation.

## APPENDIX A

### Abbreviations and Acronyms

<b>%</b> .....	percent	<b>m/s</b> .....	meters per second
<b>°F</b> .....	degrees Fahrenheit	<b>Mgal</b> .....	1,000 gallons
<b>acfm</b> .....	actual cubic feet per minute	<b>MW</b> .....	megawatt
<b>BACT</b> .....	Best Available Control Technology	<b>MHDR</b> .....	maximum hourly design rate
<b>BMPs</b> .....	Best Management Practices	<b>MMBtu</b> ....	Million British thermal units
<b>Btu</b> .....	British thermal unit	<b>MMCF</b> .....	million cubic feet
<b>CAM</b> .....	Compliance Assurance Monitoring	<b>MSDS</b> .....	Material Safety Data Sheet
<b>CAS</b> .....	Chemical Abstracts Service	<b>NAAQS</b> ...	National Ambient Air Quality Standards
<b>CEMS</b> .....	Continuous Emission Monitor System	<b>NESHAPs</b>	National Emissions Standards for Hazardous Air Pollutants
<b>CFR</b> .....	Code of Federal Regulations	<b>NO<sub>x</sub></b> .....	nitrogen oxides
<b>CO</b> .....	carbon monoxide	<b>NSPS</b> .....	New Source Performance Standards
<b>CO<sub>2</sub></b> .....	carbon dioxide	<b>NSR</b> .....	New Source Review
<b>CO<sub>2e</sub></b> .....	carbon dioxide equivalent	<b>PM</b> .....	particulate matter
<b>COMS</b> .....	Continuous Opacity Monitoring System	<b>PM<sub>2.5</sub></b> .....	particulate matter less than 2.5 microns in aerodynamic diameter
<b>CSR</b> .....	Code of State Regulations	<b>PM<sub>10</sub></b> .....	particulate matter less than 10 microns in aerodynamic diameter
<b>dscf</b> .....	dry standard cubic feet	<b>ppm</b> .....	parts per million
<b>EQ</b> .....	Emission Inventory Questionnaire	<b>PSD</b> .....	Prevention of Significant Deterioration
<b>EP</b> .....	Emission Point	<b>PTE</b> .....	potential to emit
<b>EPA</b> .....	Environmental Protection Agency	<b>RACT</b> .....	Reasonable Available Control Technology
<b>EU</b> .....	Emission Unit	<b>RAL</b> .....	Risk Assessment Level
<b>fps</b> .....	feet per second	<b>SCC</b> .....	Source Classification Code
<b>ft</b> .....	feet	<b>scfm</b> .....	standard cubic feet per minute
<b>GACT</b> .....	Generally Available Control Technology	<b>SDS</b> .....	Safety Data Sheet
<b>GHG</b> .....	Greenhouse Gas	<b>SIC</b> .....	Standard Industrial Classification
<b>gpm</b> .....	gallons per minute	<b>SIP</b> .....	State Implementation Plan
<b>gr</b> .....	grains	<b>SMAL</b> .....	Screening Model Action Levels
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>HAP</b> .....	Hazardous Air Pollutant	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>hr</b> .....	hour	<b>tph</b> .....	tons per hour
<b>hp</b> .....	horsepower	<b>tpy</b> .....	tons per year
<b>lb</b> .....	pound	<b>VMT</b> .....	vehicle miles traveled
<b>lbs/hr</b> .....	pounds per hour	<b>VOC</b> .....	Volatile Organic Compound
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Mr. Dave Hagen  
Director of Safety, Quality & Pontoon Operations  
Lowe Boats, Inc.  
2900 Industrial Dr.  
Lebanon, MO 65536

RE: New Source Review Permit - Project Number: 2015-04-006

Dear Mr. Hagen:

Enclosed with this letter is your permit to construct. Please study it carefully and refer to Appendix A for a list of common abbreviations and acronyms used in the permit. Also, note the special conditions 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 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 were adversely affected by this permit decision, you may be entitled to pursue an appeal before the administrative hearing commission pursuant to Sections 621.250 and 643.075.6 RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty 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 administrative hearing commission, whose contact information is: Administrative Hearing Commission, Truman State Office Building, P.O. Box 1557, Jefferson City, Missouri 65102, [www.oa.mo.gov/ahc](http://www.oa.mo.gov/ahc). If you have any questions regarding this permit contact Chad Stephenson, Department of Natural Resources' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 at (573) 751-4817.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

Susan Heckenkamp  
New Source Review Unit Chief

SH:csl

Enclosures

c: Southwest Regional Office  
PAMS File: 2015-04-006  
Permit Number:



MISSOURI DEPARTMENT OF NATURAL RESOURCES  
FOLDER TRANSMITTAL ROUTING SHEET

Document #:  
Division Log #:  
Program Log #:

DEADLINE: \_\_\_\_\_ Penalty for Missing Deadline: \$ \_\_\_\_\_

Low Boats, Inc.

2015-04-006

Originator: Chad Stephenson

Telephone: 6-3835

Date: 9/3/2015

Typist: Linda

File Name: P:\APCP\Permits\Users\Chad Stephenson\90 Day\2015-04-006 Lowe Boats\2015-04-006 Lowe Boats.docm

FOR SIGNATURE APPROVAL OF:

DNR Director    DNR Deputy Director    Division Director    Division Deputy Director   X Other: Kyra L. Moore

PROGRAM APPROVAL: Approved by: \_\_\_\_\_ Program: ACP   Date: \_\_\_\_\_

Other Program Approval (Section/Unit): \_\_\_\_\_ Date: \_\_\_\_\_

Comments:

ROUTE TO:

DIVISION DIRECTOR APPROVAL: \_\_\_\_\_ Date: \_\_\_\_\_

Comments:

FINANCIAL REVIEW – DIVISION OF ADMINISTRATIVE SUPPORT:

DAS Director: \_\_\_\_\_ Date: \_\_\_\_\_

Fee Worksheet Received By: \_\_\_\_\_ Date: \_\_\_\_\_

Accounting: \_\_\_\_\_ Date: \_\_\_\_\_

Budget: \_\_\_\_\_ Date: \_\_\_\_\_

General Services: \_\_\_\_\_ Date: \_\_\_\_\_

Internal Audit: \_\_\_\_\_ Date: \_\_\_\_\_

Purchasing: \_\_\_\_\_ Date: \_\_\_\_\_

Comments:

LEGAL REVIEW:

General Counsel: \_\_\_\_\_ Date: \_\_\_\_\_

AGO: \_\_\_\_\_ Date: \_\_\_\_\_

Comments:

DEPARTMENT DIRECTOR APPROVAL: \_\_\_\_\_ Date: \_\_\_\_\_

Comments:

NOTARIZATION NEEDED

INITIALS/DATE