



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: 122010-001 Project Number: 2010-10-054

Parent Company: LMI Aerospace

Parent Company Address: 411 Fountain Lakes Blvd., St. Charles, MO 63301

Installation Name: Leonard's Metal, Inc - Highway 94 Plant

Installation Number: 183-0038

Installation Address: 3030 Highway 94 North, St. Charles, MO 63301

Location Information: St. Charles County, S21, T47N, R5E

Application for Authority to Construct was made for:

The use of a new paint in the Curtain Track paint spray booth (EP7a) and associated solvent usage (EP7b). 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.

DEC - 1 2010

EFFECTIVE DATE

A handwritten signature in black ink, appearing to read "James L. Kavanaugh".
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 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 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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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."

Leonard's Metal, Inc - Highway 94 Plant
St. Charles County, S21, T47N, R5E

1. **Superseding Condition**
The conditions of this permit supersede Special Condition 1 found in the previously issued construction permit, Permit Number 082003-008, issued by the Air Pollution Control Program.
2. **VOC and HAP Emission Limitation**
 - A. Leonard's Metal, Inc - Highway 94 Plant shall emit less than 25.0 tons of Volatile Organic Compounds (VOCs) in any consecutive 12-month period from the entire installation. This limit applies to the VOC emissions from all equipment/ processes installed or permitted at Leonard's Metal, Inc - Highway 94 Plant as of the issuance date of this permit. Table 1 lists all known VOC emission sources at the Leonard's Metal, Inc - Highway 94 Plant.

Table 1: VOC Emission Sources at Leonard's Metals

Emission Point	Description
EP01	Foundry Operations
EP04	Natural Gas Combustion (Space Heaters, Furnaces)
EP05	Fugitive Emissions – Miscellaneous solvent & solvent-containing material usage
EP7a	Curtain Track Paint Booth
EP7b	Solvent Usage in Curtain Track Paint Booth

- B. Leonard's Metal, Inc - Highway 94 Plant shall emit less than 10.0 tons individually or 25.0 tons combined of Hazardous Air Pollutants (HAPs) in any consecutive 12-month period from the entire installation as defined in Table 1. This limit applies to the HAP emissions from all equipment/ processes installed or permitted at Leonard's Metal, Inc - Highway 94 Plant as of the issuance date of this permit.

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SPECIAL CONDITIONS:

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

- C. Leonard's Metal, Inc - Highway 94 Plant shall emit less than 2.5 tons of Volatile Organic Compounds (VOCs) in any consecutive 12-month period from surface coating operations. Surface coating operations at the installation consist of painting (EP7a) and cleanup solvent (EP7b) used in, the Curtain Track Paint Booth.
 - D. Attachment A, Attachment B and Attachment C or equivalent forms, such as electronic forms, approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 2.A, 2.B, and 2.C.
3. Use of Alternative Coatings in the Curtain Track Paint Booth (EP7a)
- A. When considering using an alternative material in the new paint booth that is different than a material listed in the Application for Authority to Construct, Leonard's Metal, Inc - Highway 94 Plant shall calculate the potential emissions of the individual HAP in the alternative material for the project.
 - B. Leonard's Metal, Inc - Highway 94 Plant shall seek approval from the Air Pollution Control Program before use of the alternative material in the following case:
 - 1) If the potential individual HAP emissions for the alternative material is equal to or greater than the Screening Model Action Levels (SMAL) for any compound listed in the Air Pollution Control Programs, *Table of Hazardous Air Pollutants, Screening Model Action Levels and Risk Assessment Levels* (Issued 8/16/2010, Rev 6) located in Attachment E .
 - C. Leonard's Metal, Inc - Highway 94 Plant shall use Attachment D to show compliance with Special Condition 3.A and 3.B.
4. Control Device Requirements for the Curtain Track Paint Booth
- A. Leonard's Metal, Inc - Highway 94 Plant shall control emissions from the spray gun using a paint booth equipped with panel filters. The paint booth (EP7a) and the panel filters (CD-2) shall be maintained in accordance with the manufacturer's specifications. Replacement filters shall be kept on hand at all times
 - B. Only one spray gun shall be operated in the paint booth at a time.
 - C. Leonard's Metal, Inc - Highway 94 Plant shall neither replace the spray

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SPECIAL CONDITIONS:

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

guns nor modify the spray guns, such that the current application rates as given in the application are exceeded.

5. **Operational Requirement**
Leonard's Metal, Inc - Highway 94 Plant shall keep all VOC and HAP emitting solvents, paints, and cleaning solutions in sealed containers whenever the materials are not in use. Leonard's Metal, Inc - Highway 94 Plant shall provide and maintain suitable, easily read, permanent markings on all VOC and HAP emitting solvent, paints and cleaning solution containers used with this equipment.
6. **Record Keeping and Reporting Requirements**
 - A. Leonard's Metal, Inc - Highway 94 Plant shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used
 - B. Leonard's Metal, Inc - Highway 94 Plant shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, MO 65102, no later than ten 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: 2010-10-054
Installation ID Number: 183-0038
Permit Number:

Leonard's Metal, Inc - Highway 94 Plant
3030 Highway 94 North
St. Charles, MO 63301

Complete: October 22, 2010

Parent Company:
LMI Aerospace
411 Fountain Lakes Blvd.
St. Charles, MO 63301

St. Charles County, S21, T47N, R5E

REVIEW SUMMARY

- Leonard's Metal, Inc - Highway 94 Plant has applied for authority to use a new paint in the Curtain Track paint spray booth.
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from this process are toluene (CAS# 108-88-3) and methanol (CAS# 141-78-6). Both HAPs are being emitted at levels well below their respective Screening Model Action Levels.
- None of the New Source Performance Standards (NSPS) apply to the installation.
- None of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) apply to this installation.
 - 40 CFR Part 63, Subpart GG, *National Emission Standards for Aerospace Manufacturing and Rework Facilities* is not applicable because potential HAP emissions are less than major source levels.
 - 40 CFR Part 63, Subpart HHHHHH, *National Emission Standards for Hazardous Air Pollutants: Paint Stripping and Miscellaneous Surface Coating Operations at Area Sources* is not applicable because the paints being used do not contain the target HAPs referenced in the rule.
 - 40 CFR Part 63, Subpart XXXXXX, *National Emission Standards for Hazardous Air Pollutants Area Standards for Nine Metal Fabrication and Finishing Source Categories* is not applicable to the paint booth operations because the paints being used do not contain metal fabrication or finishing metal HAPS.
- The paint booth is equipped with panel filters in order to control particulate matter emissions from the spray gun overspray.

- This review was conducted in accordance with Section (5) of Missouri State Rule 10 CSR 10-6.060, Construction Permits Required. Potential emissions of VOCs for this project are below de minimis levels. Potential emissions of individual and total HAPs for this project are above major source levels. All other pollutants are below de minimis levels for this project. Potential emissions of VOCs for the project are conditioned to 2.5 tons per year and individual and total HAPS for the installation are conditioned to less than major levels.
- This installation is located in St. Charles County, a nonattainment area for the 8-hour ozone standard and the annual PM_{2.5} standard and an attainment area for all other 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 is not required for the new equipment.
- No Operating Permit is required for this installation.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

Leonard's Metal, Inc. (LMI) operates a light metal fabrication facility supplying components for the aerospace industry at 3030 North Highway 94 in St. Charles, Missouri. They are considered a minor source for all pollutants. The following construction permits have been issued to LMI from the Air Pollution Control Program.

Permit Number	Description
0498-016	Installation of two (2) lead melting pot furnaces with 3.0 and 1.5 MMBtu/hr natural gas burners.
0498-016A	Amendment to Permit No. 0498-016.
082003-008	Installation of a spray paint booth (EP03).

Since the installation's potential emissions of VOCs are limited to less than 25.0 tons per year, Missouri State Rule 10 CSR 10-5.295, *Control of Emissions From Aerospace Manufacturing & Rework Facilities*, does not apply to this installation. Moreover, 10 CSR 10-5.330, *Control of Emissions From Industrial Surface Coating Operations*, does not apply to this installation since their actual emissions have never exceeded 2.5 tons per year and the facility is limiting the emissions from the surface coating operations to less than 2.5 tons per year.

Several pieces of equipment at LMI have been dismantled including a paint booth (EP03) and the abrasive grit blaster (EP06). At this time, the installation consists of the following emission units: EP01 Foundry Operations, EP04 Natural Gas Combustion (space heaters, furnaces), EP05 Fugitive Emissions (miscellaneous solvent and solvent-containing material usage), EP7a Curtain Track Paint Booth, and EP7b Solvent Usage associated with the Curtain Track Paint Booth. Please note that the solvent usage associated the Curtain Track Paint Booth has been separated from the other solvent usage in order to quantify the emissions associated with painting operations. As explained above, the surface coating operation has been limited to less than 2.5 tons per year so that 10 CSR 10-5.330 does not apply.

PROJECT DESCRIPTION

LMI is seeking authority to use a new paint in their existing Curtain Track Paint Booth (EP7a). LMI submitted an application to relocate this spray booth in March 2009 (Project No. 2009-03-060) to the LMI facility located in St. Charles. At that time, a determination was made that no permit was required. However, LMI is requesting to use a different paint with a higher VOC content which results in the need for a permit.

The project consists of the Curtain Track Paint Booth and the associated solvent usage. The spray booth (EP7a) is used to paint curtain rod rails that are formed during production operations. Parts are wiped clean with isopropanol or denatured alcohol (EP7b), painted using a spray gun, and then allowed to air dry. Isopropanol or denatured alcohol is also used as necessary as a clean-up solvent (EP7b).

The spray gun has a rated capacity of 1.875 gallons per hour. Each spray cycle is 3 minutes long, including a 1 minute downtime during each spray cycle to refill the paint cup. There are a total of 40 minutes of downtime during each shift for preparation and cleanup. Based on the operational limitations including prep and cleanup downtime as well as refill downtime, the adjusted application rate is estimated to be 1.15 gallons per hour.

The facility uses isopropanol or denatured alcohol for cleaning. The facility will use a maximum of 0.5 gallon per shift of either solvent for wipe cleaning to prepare parts for painting and/or for spray gun cleaning.

EMISSIONS/CONTROLS EVALUATION

The project's potential emissions are primarily VOCs and HAPs that are associated with the paint applied in the new spray booth. However, some PM₁₀ is emitted from the solids contained in the painting. Only one paint type is currently used in the paint booth. A description of the emission factors sources and calculation methods are described as follows.

- Potential emissions were estimated using a mass balance approach and information obtained from the Material Safety Data Sheets (MSDS).
- 100 percent of the VOC and HAP content of the paints and solvent are assumed to be emitted into the atmosphere.

- PM₁₀ emissions from the application of the paint were evaluated based on the solids of the paint as well as the transfer efficiency from the spray application. A 50% transfer efficiency was used. The solids content of the material was estimated by taking the density of the material and subtracting out the volatile content. The remainder was assumed to be PM₁₀. A control efficiency of 95% was given for use of the panel filter in the paint booth.
- The potential emissions for total VOCs, combined HAPs, each individual HAP and PM₁₀ were evaluated based on the paint and worst case potential emissions for the solvent.

The following table provides an emissions summary for this project. Existing potential emissions were taken from Permit No. 082003-008. Existing actual emissions were taken from the installation's 2009 Emission Inventory Questionnaire (EIQ). Potential emissions of the application represent the potential of the new paint booth and related solvent usage as described above: All potential emissions assume continuous operation (8,760 hours per year).

Table 2: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions	Existing Actual Emissions (2009 EIQ)	Unconditioned Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	3.21	N/A	0.09	N/A
SO _x	40.0	0.05	N/A	N/A	N/A
NO _x	40.0	8.55	N/A	N/A	N/A
VOC	40.0	<25.0 ¹	0.71	35.30	<25.0 ³
CO	100.0	1.49	N/A	N/A	N/A
HAPs	10.0/25.0	<10.0/25.0 ¹	N/D	29.59	<10.0/25.0
Toluene	10.0	<10.0 ¹	N/D	29.50	<10.0
Methanol	10.0	<10.0 ¹	N/D	0.09	<10.0
Lead	0.6	<0.6 ²	N/D	N/A	N/A

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

¹In Permit No. 082003-008, the installation's VOC emissions were limited to 25.0 tons per year and the installation's HAP emission were limited to 10 tons per year for individual HAPs and 25.0 tons per year for total HAPs.

²The installation's lead emissions were limited to 0.6 tons per year in Permit No 0498-016.

³An additional 2.50 ton per year VOC limit was taken on the surface coating operations.

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 VOCs for this project are below de minimis levels. Potential emissions of individual and total HAPs for this project are above major source levels. All other pollutants are below de minimis levels for this project. Potential emissions of VOCs for the project are conditioned to 2.5 tons per year and individual and total HAPS for the installation are conditioned to less than major levels.

APPLICABLE REQUIREMENTS

Leonard's Metal, Inc - Highway 94 Plant 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.

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 a hardcopy Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions. Otherwise, submission of an electronic copy via MoEIS is required May 1.
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

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.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated October 20, 2010, received October 22, 2010, designating LMI Aerospace as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- St. Louis Regional Office Site Survey, dated November 3, 2010

