



## 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: **102013-006** Project Number: 2013-08-004  
Installation Number: 095-0046

Parent Company: US Department of Defense - Army

Parent Company Address: PO Box 1000, Independence, MO 64051

Installation Name: Alliant Techsystems Operations LLC. Small Caliber Systems -  
Lake City Ammunition Plant

Installation Address: Intersection of Missouri Highways 7 & 78 (25201 E 78 Hwy),  
Independence, MO 64051

Location Information: Jackson County, S31/32, T50N, R30W

Application for Authority to Construct was made for:

The installation of two new 16.736 MMBtu/hr natural gas burners on existing Boilers #5 and #6 (EP-44). This review was conducted in accordance with Section (5) of 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.

OCT 15 2013

EFFECTIVE DATE

  
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 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.	2013-08-004

**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."*

Lake City Ammunition Plant  
Jackson County, S31/32, T50N, R30W

1. Operational Requirement  
Lake City Ammunition Plant shall exclusively combust natural gas in EP-44 Boilers #5 and #6.

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

Project Number: 2013-08-004  
Installation ID Number: 095-0046  
Permit Number:

Lake City Ammunition Plant  
25201 E 78 Hwy  
Independence, MO 64051

Complete: August 26, 2013

Parent Company:  
US Department of Defense - Army  
PO Box 100  
Independence, MO 64051

Jackson County, S31/32, T50N, R30W

REVIEW SUMMARY

- Alliant Techsystems Operations LLC. Small Caliber Systems - Lake City Ammunition Plant has applied for authority to installation two new 16.736 MMBtu/hr burners on their existing Boilers #5 and #6 (EP-44).
- HAP emissions are expected from the proposed equipment. HAPs are emitted from the combustion of natural gas. The primary HAP of concern is Hexane (110-54-3).
- 40 CFR Part 60, Subpart Dc - *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* applies to Boilers #5 and #6 (EP-44).
- 40 CFR Part 63, Subpart DDDDD – *National Emission Standards for HAP for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters* applies to Boilers #5 and #6 (EP-44). The new burners are replacement burners for the existing boilers. The replacement of the burners does not meet the definition of *reconstruction* at §63.2; therefore, the boilers will continue to be existing boilers under this regulation.
- No air pollution control equipment is being used in association with the new equipment.
- 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 pollutants are below de minimis levels.
- This installation is located in Jackson County, a maintenance area for ozone 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 are not required for the new burners.
- The permittee shall amend their Part 70 operating permit renewal application, project 2008-05-039, within one year of equipment startup to include the new burners.
- Approval of this permit is recommended with special conditions.

#### INSTALLATION DESCRIPTION

Alliant Techsystems Operations LLC Small Caliber Systems operates a small arms ammunition manufacturing facility (Lake City Ammunition Plant) in Independence, MO. The installation is an existing major source under construction permits for SO<sub>x</sub>, NO<sub>x</sub>, VOC, and HAP. The installation is currently operating under Part 70 operating permit OP2003-042 which expired October 30, 2008 until a new operating permit is issued. The installation has submitted a Part 70 operating permit renewal application, project 2008-05-039, which is currently under technical review.

The following New Source Review permits have been issued to Alliant Techsystems Operations LLC Small Caliber Systems - Lake City Ammunition Plant from the Air Pollution Control Program:

**Table 1: Permit History**

<b>Permit Number</b>	<b>Description</b>
1088-009A	Install three new painting/sealing systems and two air strippers
0690-009	Install a trinitroresorcinol (TNR) manufacturing building
0690-003	Install an explosive wastewater treatment plant to remove metals
0191-004	Install four air strippers that will strip VOC from drinking water
0492-002	Install emergency diesel pump for boiler feed and 20 emergency generators
1192-018	Install a natural gas fired generator unit
0694-021	Install a primer popping operation
0395-027	Install nine standby emergency diesel generators
1095-022	Install three video-jet printers for 20-mm case marking. This equipment replaced the ink-pad and rubber-stamping method
0496-018	Install three ink jet equipment for 5.56 mm packing cartons. This equipment replaced the existing rubber-stamp operation
1097-018	Modify existing process to manufacture I-136N igniter mix by eliminating calcium resinate and replacing it with a polyurethane formula
0199-021	Install emergency diesel booster pump and fuel storage tank
012000-017	Install three ammunition loading machines and one ammunition priming machine. Replaced four WWII machines
092000-002	Install calcium resinate system for manufacturing
112000-008	Install two 16.8 MMBtu/hr steam generating boilers
042001-003	Install machine gun belt link manufacturing equipment. Permit has been relinquished to Lake City Ammo by Galion, Inc
052001-012	Install two 12.1 MMBtu/hr natural gas fired steam generating boilers
082001-016	Install one 45-ton press, one 75-ton press and one resistance welding station to an existing machine gun belt link manufacturing operation. Permit has been relinquished to Lake City Ammo by Valentec Wells, LLC (formerly Galion, Inc.)
102001-006	Install two 150-ton presses and one 100-ton press to an existing machine gun belt link manufacturing operation
112001-009A	Install two 30-ton presses and one 60 ton press to an existing machine gun belt link manufacturing operation
012003-008	Two Manuhrin loaders for the combat cartridge tip identification and cartridge sealing operation (EP-14 and EP-15, respectively)
032005-012	Installation of one 33.5 MMBtu/hr boiler
112008-012	Installation of eight new priming machines and five new loading machines, including one Manurhin loading machine. (Phase I)
122008-007	Installation of six new draw presses, three new wash and dry lines, two new pickle/wash/lube lines, and eight new back end case cells. (Phase II)
062009-004	Installation of five ammunition can printing lines and four new crate printing lines. (Phase III)
022010-008	Installation of three first draw presses, two natural gas fueled anneal ovens, two pickle trains, three second draw presses, three final wash lines, and five back end case cells. (Phase IV) Also includes amendment to Phase II by installing equipment for manufacturing 7.62 mm shell casings
042010-005	Temporary concrete crusher
042010-005A	Correcting responsible party
112008-012A	Change the formulation for the mouth water proofing compound
022011-010	Temporary permit for a Thermal Convection System (TCS)
022011-010A	Amendment to the temporary permit to allow the treatment of additional equipment by the TCS
012013-009	Use of new lube, wash additives, and brass brighteners for five high speed case manufacturing lines
062013-007	Increasing the usage and changing the formulation of the mouth water proofing compound

## PROJECT DESCRIPTION

The installation is proposing to replace the two existing 16.8 MMBtu/hr natural gas fired low NOx burners on Boilers #5 and #6 (EP-44) installed under NSR Permit 112000-007 with two new 16.736 MMBtu/hr natural gas fired burners. The new burners are not low NOx burners; therefore, an increase in NOx emissions required the issuance of this permit.

## EMISSIONS/CONTROLS EVALUATION

The emission factors used in this analysis were obtained from the EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition, Section 1.4 "Natural Gas Combustion" (July 1998). GHG emissions were calculated using emission factors and global warming potentials contained with 40 CFR Part 98.

The following table provides an emissions summary for this project. Existing potential emissions were taken from NSR Permit 062013-007. Existing actual emissions were taken from the installation's 2012 EIQ. Potential emissions of the application represent the potential of the new burners, assuming 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 (2012 EIQ)	Potential Emissions of the Application
PM	25.0	N/D	N/A	0.27
PM <sub>10</sub>	15.0	76.20	10.51	1.08
PM <sub>2.5</sub>	10.0	N/D	2.28	1.08
SO <sub>x</sub>	40.0	1,780.65	1.79	0.09
NO <sub>x</sub>	40.0	361.82	45.88	14.26
VOC	40.0	1,460.25	123.15	0.78
CO	100.0	167.45	19.67	11.98
GHG (CO <sub>2</sub> e)	75,000	N/D	48,699.67 <sup>1</sup>	17,153.45
HAP	25.0	272.24	12.74	0.27
Hexane (110-54-3)	10.0	N/D	0.40	0.26

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

<sup>1</sup>This value was obtained from EPA's website and is based on the installation's 2011 40 CFR Part 98 reported CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions.

## 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 all pollutants are below de minimis levels.

## APPLICABLE REQUIREMENTS

Alliant Techsystems Operations LLC. Small Caliber Systems - Lake City Ammunition Plant shall comply with the following requirements applicable to the new burners. 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 the entire installation, please consult your operating permit.

### GENERAL REQUIREMENTS

- 10 CSR 10-6.065 *Operating Permits*
  - The installation is required to amend their Part 70 operating permit application, 2008-05-039, within one year of equipment startup to include the new burners.
- 10 CSR 10-6.110 *Submission of Emission Data, Emission Fees and Process Information*
- 10 CSR 10-6.165 *Restriction of Emission of Odors*
- 10 CSR 10-6.170 *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*
- 10 CSR 10-6.220 *Restriction of Emission of Visible Air Contaminants*

### SPECIFIC REQUIREMENTS

- 10 CSR 10-6.070 *New Source Performance Regulations*
  - 40 CFR Part 60, Subpart Dc – *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

## STAFF RECOMMENDATION

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

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Alana L. Rugen, EIT  
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 July 26, 2013, received August 1, 2013, designating US Department of Defense - Army as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.

## 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>SIC</b> .....	Standard Industrial Classification
<b>GHG</b> .....	Greenhouse Gas	<b>SIP</b> .....	State Implementation Plan
<b>gpm</b> .....	gallons per minute	<b>SMAL</b> .....	Screening Model Action Levels
<b>gr</b> .....	grains	<b>SO<sub>x</sub></b> .....	sulfur oxides
<b>GWP</b> .....	Global Warming Potential	<b>SO<sub>2</sub></b> .....	sulfur dioxide
<b>HAP</b> .....	Hazardous Air Pollutant	<b>tph</b> .....	tons per hour
<b>hr</b> .....	hour	<b>tpy</b> .....	tons per year
<b>hp</b> .....	horsepower	<b>VMT</b> .....	vehicle miles traveled
<b>lb</b> .....	pound	<b>VOC</b> .....	Volatile Organic Compound
<b>lbs/hr</b> .....	pounds per hour		
<b>MACT</b> .....	Maximum Achievable Control Technology		
<b>µg/m<sup>3</sup></b> .....	micrograms per cubic meter		

Ms. Julie Casey  
Senior Manager Environmental Engineering  
Alliant Techsystems Operations LLC. Small Caliber Systems - Lake City Ammunition Plant  
PO Box 1000  
Independence, MO 64051

RE: New Source Review Permit - Project Number: 2013-08-004

Dear Ms. Casey:

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, 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 Alana Rugen, at the Department of Natural Resources' 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

Susan Heckenkamp  
New Source Review Unit Chief

SH:arl

Enclosures

c: Kansas City Regional Office  
PAMS File: 2013-08-004

Permit Number: