PERMIT BOOK

STATE OF MISSOURI

Jeremiah W. (Jay) Nixon, Governor • Sara Parker Pauley, Director

DEPARTMENT OF NATURAL RESOURCES

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FEB 2 3 2011

CERTIFIED MAIL:70082810000020169200
RETURN RECEIPT REQUESTED

Mr. Shahrukh Kanga
Principal
PIKA International, Inc.
12723 Capricorn Drive
Stafford, TX 77477

RE: New Source Review Temporary Permit Request - Project Number: 2010-11-068
Installation ID Number: 095-0046
Temporary Permit Number: 022011-010
Expiration Date: February 7, 2012

Dear Mr. Kanga:

The Missouri Department of Natural Resources' Air Pollution Control Program has completed a review of your request to operate the Thermal Convection System (TCS) for the purpose of thermally neutralizing trace explosives residues from equipment associated with the following buildings (4, 22A, 23A, 23B, 23C, 24C, 20A, 20B, 22B, 24E, 65, 67 and 121G) at the Lake City Army Ammunition Plant (Lake City). The Air Pollution Control Program is hereby granting your request to conduct this temporary operation at this location in accordance with Missouri State Rule 10 CSR 10-6.060(3) and the Special Conditions attached to this permit.

Background

Per your Application for Authority to Construct received November 26, 2010 and dated November 23, 2010, PIKA International, Inc. (PIKA) is seeking authority to operate the TCS at Lake City for a period of less than six months. The TCS is a portable unit that thermally neutralizes explosives residues in building materials, equipment and debris. PIKA is being contracted to aid in the decommissioning of approximately 900 tons of obsolete World War II and Korean Era vintage ammunition equipment. This equipment was used in the manufacturing production of small arms ammunition and may contain trace amounts of powder and tracer residues resulting form the assembly processes. Before Lake City can sell or recycle the equipment, the residues need to be neutralized completely.

The decommissioning process will start with the disassembly (as required), then the inspection and removal of any visible powder and combustible materials. This step is followed by the placement of the equipment in the TCS to thermally verify (by combusting the explosive residue) that any remaining explosive residue has been removed. Once the equipment has been thermally verified, it will be released to the public for recycling or resale.

Description of the TCS

The two-stage heating system for TCS (EP-01) will operate at a maximum heat input of 9 million British thermal units per hour for the combined chambers. Liquid propane (LP) will be used as the fuel. The TCS will be configured with a car-bottom chamber to serve as the thermal convection furnace chamber that is used for flashing the equipment, as needed, in batches. The unit is designed to process up to 12 tons per load and each load is processed over 6 hours (4 hours heating, 1 hour cooling and 1 hours loading/unloading). The TCS process begins with the material being placed inside Chamber 1 where the material is initially heated at 650 degrees Fahrenheit (°F) in order to complete thermal convection of the explosives residues. The resulting off gas from Chamber 1 is then routed into Chamber 2 where the off gas is heated to 1450 °F with a residence time in Chamber 2 of 0.5 second. The purpose of Chamber 2 is to complete the total destruction of secondary combustion products that may be generated by the process. The TCS process is completed with the exhaust leaving Chamber 2 and directed to a Particulate Air Scrubber (PAS) designed to cool the air and remove particulates utilizing a combination of cartridge and HEPA filters. Temperature for each chamber is controlled and recorded using thermocouples or sensors.

The TCS unit is expected to process approximately 900 tons of obsolete equipment. Much of the obsolete equipment is coated with a protective paint containing lead. As a result, lead may also be emitted during thermal verification.

The TCS unit will be powered by two 45-kW portable diesel-fired generators (EP-2 and EP-3) with a maximum hourly design rate of 2 gallons per hour each using No. 2 diesel fuel. The generators will be trailer-mounted. Since the generators are transportable and will not be located at the site for more than 12 consecutive months, these generators are considered to be non-road engines as defined in 40 CFR 89.2 and are also considered to be portable (not stationary sources). For this reason, they are excluded from construction permitting and their emissions are not included in the potential emissions of this project. If the generators are made stationary (installed on permanent footings) or remain portable at the site for more than 12 months, a permit will be required for the generators.

Technical Review and Emissions Summary

The emissions for this project consist of the following: emissions associated with the combustion of LP in the TCS unit, lead emissions from the protective coating of the decommissioned equipment, and emissions associated with the combustion of the remaining explosives residues on the decommissioned equipment. PIKA estimates that the maximum load that the TCS can treat is 12 tons of equipment with approximately 2,000 square feet (ft^2) surface area. Each load cycle consists of a 4 hours of heating, 1 hour of cooling and 1 hour for loading/unloading. As stated above, the TCS is treating approximately 900 tons total of decommissioned equipment per batch. However, the tonnage is limited to a total of 950 tons for the temporary permit. This amount ensures that the lead emissions will remain well below the Screening Model Action Level of 0.01 ton per year for lead.

A description of the emission factor sources, control efficiency and calculation methods are described as follows.

- Particulate control efficiency: A 95% control efficiency was credited for the control of particulate matter in the secondary chamber due to the use of cartridge and HEPA filters.

Agency (EPA) document AP-42, Compilation of Air Pollutant Emission Factors, Fifth Edition, Section 1.5, Liquefied Petroleum Gas Combustion (July 2008). Combustion emissions occur for 4 of the 6-hour cycle.

- Lead emissions: A material balance based on the total surface area processed was used to estimate the lead emissions. Based upon tests conducted by Environ Health Technologies on the paint coating, there is 0.0919 pounds of paint per square foot and the lead content is approximately 1 percent by weight of the coating. Since lead is a particulate, most of the lead will be captured in the cartridge and HEPA filter devices.

- Explosive residue emissions: A material balance based on the total surface area processed was used to estimate the residue emissions. The pollutants resulting from the combustion of the residue are VOCs and particulate, including some lead particulate. It was estimated that less than 1% of the surface area is covered with explosive residue, the thickness of the residue is less than 1 millimeter and the density of the residue is 31.2 pounds per square foot.

The following table provides an emissions summary for this project. The unconditioned potential emissions are calculated at the maximum design rate operating at 8,760 hours annually. The conditioned potential emissions of the application are based on a limited processed amount of 950 tons.

Table 1: Project Emissions (Tons per Year).

Pollutant	Regulatory De Minimis Levels	Unconditioned Potential Emissions of the Application	Conditioned Potential Emissions of the Application
PM_{10}	15.0	0.28	0.005
SOx	40.0	0.44	0.04
NOx	40.0	3.78	0.31
VOC	40.0	0.29	0.02
CO	100.0	2.18	0.18
HAPs	10.0/25.0	0.07	0.004
Lead[1]	0.01	0.07	0.004

[1] The regulatory level listed for lead is the Screen Modeling Action Level (SMAL).

As the potential emissions are less than de minimis levels for each respective pollutant and the SMAL for lead, the ambient air quality standards should not be threatened. Therefore, the proposed temporary permit is granted according to provisions of Missouri State Rule 10 CSR 10-6.060(3). All monitoring, recordkeeping, and reporting requirements shall be performed during the use of the TCS. Subsequent notification to the Air Pollution Control Program shall be made once the operation of the TCS in conjunction with the decommissioning project has been completed.

You are still obligated to meet all applicable air pollution control rules, Department of Natural Resources' rules, or any other applicable federal, state, or local agency regulations. Specifically, you should avoid violating 10 CSR 10-6.045, Open Burning Restrictions; 10 CSR 10-6.220, Restriction of Emission of

Visible Air Contaminants; 10 CSR 10-6.170, Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin; 10 CSR 10-6.165, Restriction of Emission of Odors; and 10 CSR 10-2.040, Maximum Allowable Emissions of Particulate Matter From Fuel Burning Equipment Used for Indirect Heating.

A copy of this letter should be kept with the unit and be made available to Department of Natural Resources' personnel upon verbal request. If you have any questions regarding this determination, please do not hesitate to contact Susan Heckenkamp at the Departments' Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102 or by telephone at (573) 751-4817. Thank you for your time and attention to this matter.

Sincerely,

AIR POLLUTION CONTROL PROGRAM

James L. Kavanaugh
Director

JLK:shl

Enclosure

c: Kansas City Regional Office
PAMS File: 2010-11-032

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TEMPORARY PERMIT 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."

PIKA International, Inc.
Jackson County

1. Limitation on the Tonnage of Equipment Processed
   A. PIKA International, Inc. shall process less than 950 tons of equipment in the Thermal Convective System (TCS) in the 12-month period following startup.

   B. Attachment A or an equivalent form approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Condition 1.A. PIKA International, Inc. shall maintain all records required by this special condition for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request.

   C. PIKA International, Inc. 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 Condition Number 1.A.

2. Control Requirements – Thermal Convection System (TCS)
   A. PIKA International, Inc. shall not burn any other materials other than decommissioned equipment as specified in the Application for Authority to Construct.

   B. Charging of additional material between burn cycles is prohibited.

   C. The TCS shall be equipped with a continuous chart recorder that monitors, displays and records the temperature of Chamber 1 and Chamber 2 with an accuracy of two percent (± 2%).

   D. PIKA International, Inc. shall maintain the temperature in the final combustion chamber at or above 1,450 degrees Fahrenheit.

   E. PIKA International, Inc. shall maintain an operating, maintenance and inspection log for the TCS which shall include the following:
      (1) Incidents of malfunction(s) including the date(s) and duration of the event, the probable cause, any corrective actions taken and the impact on emissions due to the malfunction;

TEMPORARY PERMIT SPECIAL CONDITIONS:

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

(2) Any maintenance activities conducted on the unit, such as replacement of equipment, etc.; and
(3) A written record of regular inspection schedule, the date and results of all inspections including any actions or maintenance activities that result from that inspection.

3. Control Requirement - Particulate Air Scrubber
   A. PIKA International, Inc. shall control emissions from Thermal Convection System using the particulate air scrubber consisting of cartridge and HEPA filters. The filters shall be operated and maintained in accordance with the manufacturer's specifications. The filters shall be equipped with a gauge or meter, which indicates the pressure drop across the control device. These gauges or meters shall be located such that the Department of Natural Resources' employees may easily observe them. Replacement filters for the cartridge and HEPA shall be kept on hand at all times. The bags shall be made of fibers appropriate for operating conditions expected to occur (i.e. temperature limits, acidic and alkali resistance, and abrasion resistance).

   B. PIKA International, Inc. shall monitor and record the operating pressure drop across the filters at least once every 24 hours. The operating pressure drop shall be maintained within the design conditions specified by the manufacturer's performance warranty.

   C. PIKA International, Inc. shall maintain an operating and maintenance log for the control equipment which shall include the following:
      (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.

Attachment A – AllowableTonnage of Decommissioned Equipment

PIKA International, Inc.
Jackson County
Project Number: 2010-11-068
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This sheet covers the period from _____ (month, year) to _____ (month, year).

Copy as needed.

Date	Column 1 (Note 1)	Column 2 (Note 2)	Column 3 (Note 3)
	Load Number	Amount of Equipment Processed per Load(Tons)	Total Amount of Equipment Processed (Tons)

Note 1: Record the load number in sequential order.
Note 2: Record the amount, in tons, of equipment processed for the load.
Note 3: Record the new total load amount of decommissioned equipment that have been processed in the TCS systems plus previous load amounts. A total processed equipment shall equal be less than 950 tons.