

Illinois Environmental Protection Agency  
Bureau of Air, Permit Section  
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Project Summary for an Application from  
GSI Group, Inc., Assumption Plant for a  
Federally Enforceable State Operating Permit (FESOP) for  
1004 East Illinois Street  
Assumption, Illinois 62510

Site Identification No.: 021005AAF  
Application No.: 07120032

Illinois EPA Contacts

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**I. INTRODUCTION**

The GSI Group, Inc., Assumption Plant has applied for a Federally Enforceable State Operating Permit (FESOP) for its agriculture equipment manufacturing plant at 1004 East Illinois Street in Assumption. This plant requires an air pollution control operating permit because it is a source of emissions. The Illinois EPA has prepared a draft of the renewed permit that it would propose to issue for the plant. However, before renewing the permit, the Illinois EPA is holding a public comment period to receive comments on this proposed action and the terms and conditions of the draft permit that it would propose to issue.

**II. SOURCE DESCRIPTION**

The main process occurring at the GSI, Inc. - Assumption Plant is the manufacturing of grain storage, drying, conditioning, and handling equipment, poultry and swine production equipment, heating and ventilation systems for poultry, swine, and dairy barn applications, and metal coils.

The paint booth operation utilizes an airless paint spray gun. Paint is conveyed from a 55 gallon drum through a hose to the paint gun, where it is atomized for finer spray application. The paint mist adheres to the surface. The fraction that does not adhere is assumed to be emitted to the atmosphere.

The operation is conducted inside a paint spray booth, which measures approximately 45 long by 16 feet wide. The booth is ventilated. The inlet air is ducted through a filter (Nuair Filter Corporation, filter model 3332). The exhaust air filter has a minimum efficiency of 95%.

Painting operations are not continuous; they occur on an as-needed basis at the facility. This particular operation is a manual one that requires a person to deploy and operate the paint spray gun.

The coatings and solvents contain organic solvents which are emitted to the atmosphere during the coating process as volatile organic material (VOM). These materials also may contain components that are considered hazardous air pollutants (HAPs).

The purpose of the cleaning process is to remove small amounts coatings such as paint, varnish, cured polymer, grease, etc. from metal parts (paint hangers, paint hooks, engine blocks, dies, etc.).

The parts are loaded into the Controlled Pyrolysis Cleaning Furnace. The furnace is activated and is slowly heated to 700°F to 900°F by the primary burner. This decomposes the coating on the parts to "smoke". The cleaning furnace can process the organic material off of the metal parts at a rate of 14 to 20 lbs/hour.

The "smoke" is heated in the furnace secondary chamber (afterburner control unit) with oxygen, to approximately 1500°F to 1600°F. The cleaning furnace cannot be operated unless the afterburner is on and operating. The afterburner has a residence time of 0.5 seconds or greater, and the control efficiency is 99.85%. Carbon in the "smoke" becomes carbon dioxide, and hydrogen becomes water vapor. CO<sub>2</sub>, H<sub>2</sub>O, and PM are emitted through the insulated stack.

The cleaning furnace and afterburner consume natural gas for fuel. The post combustion emissions include PM, NO<sub>x</sub>, CO, VOM, SO<sub>x</sub>, and HAPs. The furnace and afterburner are typically operated 8 hours/day, 5 days/week, 52 weeks/year.

### **III. GENERAL DISCUSSION**

Federally Enforceable State Operating Permits (FESOPs) are federally enforceable, that is, the terms and conditions of the permits can be enforced by USEPA under federal law, as well as by Illinois government and the public under state law. These permits can establish federally enforceable limitations on the operation and emissions of a source that restrict the potential emissions of the source.

The source wants to operate this plant under a FESOP because the actual emissions of the plant are below the levels at which the plant would be considered a major source under Title V of the federal Clean Air Act. However, in the absence of federally enforceable limitations, the plant's potential emissions would be such that the plant would be considered a major source. The permit acts to restrict the plant potential emissions so that it need not be considered a major source. As a result, the source does not need to obtain a Clean Air Act Permit Program (CAAPP) permit for the plant, as would otherwise be required.

The FESOP limits the operation and annual emissions of the plant to below the major-source-thresholds of 100 tons for VOM, 10 tons for an individual HAP and 25 tons for combined HAPs.

### **IV. APPLICABLE EMISSION STANDARDS**

All emission units in Illinois must comply with state emission standards adopted by the Illinois Pollution Control Board. These emission standards represent the basic requirements for sources in Illinois. The Illinois Pollution Control Board has specific standards for units emitting volatile organic material. The specific standard for this company is 35 Ill., Adm. Code 215 Subpart F Regulations for Coating Operations. These regulations limit the amount of VOM that may be in the coatings used. There is a National Emission Standard for Hazardous Air Pollutants (NESHAP) for coating of miscellaneous metal parts and products, 40 CFR 63, subpart M. The requirements of the NESHAP apply to major sources of hazardous air pollutants. This source has emission limits in its permit that keep the amount of hazardous air

pollutants below major levels therefore the NESHAP regulations do not apply. The application shows that the plant is in compliance with applicable state (AND FEDERAL) emission standards.

**V. CONTENTS OF THE PERMIT**

This permit that the Illinois EPA is proposing to issue will identify the specific emission standards that apply to the emission units at the plant. The conditions of this permit are intended to ensure that the source continues to comply with applicable emission standards.

The permit would also contain limitations and requirements to assure that this plant is operated as a non-major source. The permit would limit the operation and annual emissions of the plant to below the major-source-thresholds of 100 tons for VOM, 10 tons for an individual HAP and 25 tons for combined HAPs. (Annual emissions of other pollutants from the plant are well below the 100 ton major source threshold.)

The permit conditions require appropriate compliance procedures, including inspection practices as well as recordkeeping and reporting requirements. The source must carry out these procedures on an on-going basis to demonstrate that the plant is being operated within the limitations set by the permit and the plant's emissions are being properly controlled.

**VI. REQUEST FOR COMMENTS**

It is the Illinois EPA's preliminary determination that the source has met the requirements for issuance of its permit. The Illinois EPA is therefore proposing to renew the permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 IAC Part 166.

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