

DEPARTMENT OF ENVIRONMENTAL QUALITY  
AIR QUALITY DIVISION  
**ACTIVITY REPORT: On-site Inspection**

B734872046

<b>FACILITY:</b> R L M INDUSTRIES INC		<b>SRN / ID:</b> B7348
<b>LOCATION:</b> 100 HUMMER LAKE RD, OXFORD		<b>DISTRICT:</b> Warren
<b>CITY:</b> OXFORD		<b>COUNTY:</b> OAKLAND
<b>CONTACT:</b> Mike Furneaux , Manufacturing Manager		<b>ACTIVITY DATE:</b> 05/09/2024
<b>STAFF:</b> Robert Joseph	<b>COMPLIANCE STATUS:</b> Non Compliance	<b>SOURCE CLASS:</b> MINOR
<b>SUBJECT:</b> Schedule inspection of Foundry		
<b>RESOLVED COMPLAINTS:</b>		

On May 9, 2024, I, Michigan Department Environment, Great Lakes, and Energy-Air Quality Division staff, Robert Joseph, conducted a scheduled inspection of RLM Industries, Inc. (also referred to as "the facility") located at 100 Hummer Lake Road Mahle Drive, Oxford Township MI, 48371. The purpose of the inspection was to determine the facility's compliance with the requirements of the Federal Clean Air, Act Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451; and the Michigan Department of Environment, Great Lakes, and Energy-Air Quality Division (EGLE-AQD) Administrative Rules, and conditions of the facility's Permits to Install (PTI) 830-93 and 24-86A.

### **General Information**

I arrived at the facility shortly after 1 p.m. and met with Justin, Plant Supervisor, and Larry, Purchasing Agent. I stated my name, the purpose of my visit as a civil service AQD employee of the state, and presented my credentials. I asked Justin to provide some general information regarding the facility. RLM Industries Inc. operates as an investment casting facility that operates a flash fire oven to remove wax from ceramic shells. The facility primarily manufactures automotive parts. The facility operates three work shifts and primarily operates 24 hours/day with over 50 employees.

The facility is an existing true minor source and was not subject to PSD or Title V regulations during permitting. In addition, the facility is subject to 40 CFR 63 Subpart ZZZZZ, the Iron and Steel Foundry Area Source MACT, however, the AQD does not have governing authority to implement this standard.

### **Background History**

The facility was subject to a joint AQD, Material Management Division (MMD), and Remediation Redevelopment Division (RRD) inspection last year after a complaint was forwarded to EGLE staff via the U.S. Environmental Protection Agency (EPA) regarding several environmental concerns; wastewater disposed into wetlands, the burning of caustic materials, and disposing of oil and coolant onto the ground. An inspection was conducted on April 11, 2023, by EGLE staff and there were no AQD concerns identified during the inspection. MMD and RRD observed potential improper waste disposal and referred this to the Water Resources Division.

PTI No. 24-86 was issued in February 1986 and voided in April 2014 for an autoclave (steam sterilizer) to remove the wax from the ceramic shells, however, this equipment was removed and replaced (without a PTI) with the now-current flash fire oven which resulted in a violation notice issued to the facility in 2013. The flash fire oven is equipped with an afterburner through PTI 24-86A issued on April 14, 2014. The permit application was received as a result of a Rule 201 violation. PTI 830-93 was issued on April 4, 1996, and

lists special conditions for visible emissions and particulate matter pertaining to three steel shot and two sandblasting operations which are controlled by a dust collector.

## **Facility Tour**

The facility operates investment casting – which is a foundry operation that produces castings from ceramic molds initially by using wax to form the molds. The process consists of a wax injection process for producing molds which is then dipped into an emulsion mix that produces the ceramic shell. The ceramic mold is heated up to approximately 2000 F which varies on the metal alloy. Once cooled, the ceramic material is vibrated and separated from the mold. The final product undergoes any necessary grinding and cutting.

The facility operates three electric induction furnaces with capacities of (500, 300, and 200) pounds each. Per Rule 282(2)(a)(vi) these furnaces are exempt from Rule 201 – Permit to Install given their capacities are under 6,000 pounds per batch and do not flux. All processes vent into the general plant environment.

## **PTI 830-93**

### **General Conditions**

There were no concerns with any of these conditions.

### **Special Conditions**

There were no visible emissions emanating from the facility's stacks nor from the general in-plant processes. The dust collectors appeared to be operating properly as particulate matter is collected in waste drums.

**PTI 24-86A** (only those sections which reference applicable conditions are referenced)

## ***EU - FLASHFIRE***

### **I. EMISSION LIMITS**

The emission unit table lists PM as 1 lb/hr per Rule 301. The facility has not been required to perform stack testing. No visible emissions were observed during the inspection.

### **II. MATERIAL LIMITS**

The facility only utilizes natural gas to operate the burner of EU-FLASHFIRE.

### **III. PROCESS/OPERATIONAL RESTRICTIONS**

The afterburner temperature was observed to 1648 F at the time of inspection with retention time 0.5 seconds.

### **IV. DESIGN/EQUIPMENT PARAMETERS**

The afterburner is installed and appeared to be operating properly at the time of inspection – as well as the automatic temperature control system for the primary temperature which

read 1600 F. The interlock system per Justin shuts down the primary chamber when the afterburner temperature is not operating.

#### VI. MONITORING/RECORDKEEPING

The temperature monitoring device was calibrated on November 14, 2023, by Pro Service Co, however, the device does not continuously record the temperature of the afterburner. This is a violation of Condition 1. In addition, the facility is required to record the temperature at least once every 15 minutes. Justin stated that the facility was unaware of this requirement, therefore, the facility did not maintain temperature records of the afterburner due to this. This is a violation of Condition 2. Furthermore, the facility also failed to maintain records regarding malfunction or maintenance events performed for EU-FLASHFIRE. This is a violation of Condition 3. The facility has maintained the MSDS from the manufacturer of the chemical composition of each wax used for EU-FLASHFIRE. The primary wax compound per the SDS is Cerita Casting Wax.

#### VIII. STACK/VENT RESTRICTIONS

There were no concerns observed with the facility's stack.

#### Conclusion

Based on the EGLE-AQD inspection and records review, RLM Industries, Inc. is not in-compliance with the aforementioned requirements – due to the violation of Conditions 1, 2, and 3 (Section VI. Monitoring and Recordkeeping) of the facility's PTI 24-86A. A violation notice will be issued to the facility which will require the afterburner temperature to be continuously recorded at least once every 15 minutes, as well as documenting all malfunction and maintenance events.

NAME Robert Joseph

DATE 05-29-24

SUPERVISOR Joyce