

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

B734824366

FACILITY: R L M INDUSTRIES INC		SRN / ID: B7348
LOCATION: 100 HUMMER LAKE RD, OXFORD		DISTRICT: Southeast Michigan
CITY: OXFORD		COUNTY: OAKLAND
CONTACT: Martin Murphy , President/GM		ACTIVITY DATE: 02/04/2014
STAFF: Rem Pinga	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced Level 2 Target Inspection		
RESOLVED COMPLAINTS:		

On 2/04/2014, I conducted an unannounced level 2 target inspection at RLM Industries, Inc. located at 100 Hummer Lake Road, Oxford, Michigan 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, as amended (Act 451), the Administrative Rules, and the facility's Permit to Install Nos. 830-93 & 24-86. During the pre-inspection meeting, I initially showed my credential (ID Badge), stated the purpose of my visit, and gave a copy of the pamphlet "Environmental Inspections: Rights and Responsibilities" to Mr. Martin Murphy, President/General Manager and facility contact person. Mr. Martin Murphy accompanied me during the inspection.

The facility is an investment casting foundry operation. Investment casting is a foundry operation producing castings from ceramic molds formed by initially using wax to form the molds. Wax is injected into a die to produce the pattern for the part being produced. The wax molds are immersed into a ceramic slurry tank composed of aqueous emulsion and binding material. The emulsion is composed of water and citric based etching solution. The binder is composed of water and colloidal silica. The ceramic material dries up to form the outer shell of the wax mold. After a desired shell thickness is achieved, the entire mold is baked in a burnoff oven to melt the wax for reclaim and to form the ceramic mold. The ceramic mold is heated to 800°F to 2000°F, depending on the alloy to be casted, before pouring the molten metal for casting. After cooling, the ceramic material is vibrated and blasted off the metal part and discarded. The casted metal is then processed into finished material using cutting, grinding, and other metallic finishing equipment.

At the facility, I observed aluminum and stainless steel melting. The facility obtained two permits to install: PTI No. 830-93 and PTI No. 24-86. Mr. Murphy informed me that only one electric furnace can operate each time but the facility operates 3 electric induction furnaces rated at 500 lb., 300 lb., and 200 lb. each and has 2 units of electric power supply source. Per Mr. Murphy, the facility does not conduct fluxing, sweating, or distilling thus making the ovens and furnaces exempt from PTI requirements per Rule 282(a)(vi).

PTI No. 24-86 was issued for an autoclave to remove wax. I observed and verified that this equipment has been removed from the facility. Instead, I observed the newly installed natural gas fired autoclave conducting normal operations. Mr. Murphy informed me that the new autoclave commenced installation after January 1, 2013 and replaced the autoclave permitted under PTI No. 24-86. On May 28, 2013, I sent RLM Industries a Violation Notice for installing and operating this new autoclave without first obtaining a permit to install. This was the result of my May 2, 2013 unannounced level 2 inspection. The old autoclave was still installed but shutdown at that time. Mr. Murphy subsequently submitted a permit to install (PTI) application for this new autoclave but was later returned by AQD Permit Section due to insufficiency of information submitted to consider the application a complete application. I observed the afterburner and furnace temperatures at 1666°F and 1508°F respectively.

The new autoclave showed a name plate with 3.1 MMBTU/Hr. rated heat capacity and manufactured by Pacific Kiln and Insulating Co., Inc. with address: 14370 Veterans Way, Moreno Valley, California. I informed Mr. Murphy that he can either submit a new PTI application for the new autoclave or submit a PTI No. 24-86 permit modification application for an equipment swap. I informed Mr. Murphy that I need to send the facility a second Violation Notice. I also discussed with him the process of AQD's sending the facility a Violation Notice (VN), a second VN, the potential for an enforcement action involving a Consent Order with penalty provisions to resolve the violation, and/or potentially resolving the violation without enforcement action if the facility obtained a PTI prior to an enforcement action.

After wax is removed from the mold, the mold is pre-heated to about 1800°F in one of 4 pre-heat ovens prior to pouring of molten metal. Per Mr. Murphy, one oven is rated at 1 MMBTU/hr. The other 3 ovens are rated at 300,000 BTU/hr. each. I observed the pre-heat ovens operating and noted the following temperatures: 1807°F, 1811°F, 1602°F, and 1381°F.

PTI No. 830-93 was issued for three steel shot blast and two sand blast equipment each equipped with dust collectors and 3 natural gas fired pre-heat ovens. Prior to entering the facility and per PTI No. 830-93, special condition 14, I conducted visible emission observations coming out from roof stacks and any other fugitive emissions around the facility. I did not observe any visible emissions. During the inspection inside the process areas, I also did not observe any visible emissions. Per PTI No. 830-93 special condition 15, the dust collectors appeared to be operating properly as I did not observe any visible emissions from the shot blast and sand blast processes including the grinding and polishing processes inside the metal finishing room.

The facility is subject to 40 CFR 63 Subpart ZZZZZ, the Iron and Steel Foundry Area Source MACT. Mr. Murphy submitted on February 4, 2014, the 2nd Half Semiannual Compliance Report for 2013. Since the AQD does not have

delegation of authority to implement this MACT standard, I logged the report in the AQD MACES database system and filed the report. No deviations were reported.

Overall, the facility remains in violation of AQD Administrative Rule R 336.1201 for installing and operating the new wax burnoff oven without first obtaining a permit to install. A second Violation Notice will be sent.

NAME A/A B.

DATE 2/21/2014

SUPERVISOR CTE

