

DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Self Initiated Inspection

U63150152628769

FACILITY: Baron Industries		SRN / ID: U631501526
LOCATION: 999 E. Mandoline, Madison Heights		DISTRICT: Southeast Michigan
CITY: Madison Heights		COUNTY: OAKLAND
CONTACT: John O'Brien, Member		ACTIVITY DATE: 03/06/2015
STAFF: Robert Elmouchi	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT: Self-initiated inspection.		
RESOLVED COMPLAINTS:		

On March 6, 2015, I conducted an unannounced self-initiated inspection of Baron Industries located at 999 E. Mandoline, Madison Heights, Michigan. This facility is uniquely identified by the Air Quality Division with the Unregistered Facility Identification Number of **U631501526**. The purpose of this inspection was to determine the facility's compliance with the requirements of the Federal Clean Air Act; Article II, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451); and the administrative rules.

This facility conducts leak testing and performs impregnation of metal parts to seal inclusions that are generated during the metal casting process.

I was motivated to inspect this facility because of area odor complaints and because I observed an exhaust stack on the roof that did not appear to be associated with a HVAC system. It is important to note that the area odor complaints were not alleged to be associated with Baron Industries. I entered the building, identified myself and explained the purpose of the inspection to Mr. John D. O'Brien, Member. I presented photo identification and gave Mr. O'Brien a copy of the Environmental Inspections Rights and Responsibilities brochure. Mr. O'Brien escorted me throughout the inspection.

The Baron Industries building contains a variety of machines associated with the impregnation of metal parts with a non-volatile resin. The resin remains in a liquid state when agitated and exposed to the atmosphere, which is an aerobic environment. The resin solidifies when placed in an anaerobic environment and the rate of solidification can be accelerated with exposure to heat. Per my request, Mr. O'Brien presented material safety data sheets representing the two primary resins used in the impregnation process. The MSDSs appeared to indicate the resins emit zero VOCs and zero HAPs. I elected to leave the MSDSs at Baron Industries in an effort to minimize the promulgation of sensitive information.

The resin impregnation process is not a surface coating process. The goal of this process is to push the resin into inclusions, which are internal defects in the metal that are typically created in the casting process. Some inclusions may extend from the interior to the exterior surfaces of the part, which can result in an unacceptable rate of leakage. Impregnating the part with resin and allowing it to cure can correct most instances of this problem.

The impregnation process consists of the following steps:

- Vacuum – the part is placed in a vacuum and immersed in the resin.
- Impregnation – atmospheric pressure is restored while the part is immersed in resin. The atmospheric pressure forces the resin into inclusions and recesses.
- Spin – the part is spun to remove the bulk of the resin adhering to the surface of the

part.

- Wash – several stages of washing are performed to remove the water soluble resin. The wash process appear to be exempt from R 336.1201(1) per R 336.1281(e).
- Curing – the curing of the resin can take place at room temperature or the curing can be accelerated by placing the part in an oven, which is typically heated to less than 194 degrees Fahrenheit.

I observed two natural gas-fired emission units; an oven and a boiler. The natural gas-fired oven is used to accelerate the curing of resin impregnated parts via the indirect heating of air. The oven heat input is rated at 500,000 Btu per hour and therefore the oven appears to be exempt from the permit requirements of R 336.1201(1) per R 336.1282(b)(i).

The boiler is used to heat water for the parts washing process. The boiler heat input is rated at 1.75 MMBtu per hour. This use of this boiler is for service water heating, which appears to be exempt from the permit requirements of R 336.1201(1) per R 336.1282(b)(i). This natural gas-fired boiler also appears to be exempt from 40 CFR Part 63 Subpart JJJJJJ (*National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers Area Sources*) per §63.11195(e) and per the definition of a *gas-fired boiler* per §63.11237.

Mr. O'Brien showed me the exhaust fan that exhausts directly to the vertical roof stack. I observed that this roof mounted fan was not ducted to any process and appeared to exhaust air from the general in-plant environment. This exhaust appears to be comfort ventilation that is not designed or used to remove air contaminants generated by, or released from, specific units of equipment. Therefore, this exhaust appears to be exempt from R 336.1201(1) per R 336.1280(b).

I did not detect foul odors inside or outside this facility. The processes and materials I observed at this facility do not appear to have the potential to generate detectable foul odors.

CONCLUSION

The processes and activities I observed at Wing Pattern appear to be either exempt from or not subject to air pollution control rules.

NAME *Robert E. Swartz*

DATE *3/11/15*

SUPERVISOR *CJE*