

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

U6314552725694

FACILITY: ExOne		SRN / ID: U63145527
LOCATION: 2341 Alger Drive, Troy		DISTRICT: Southeast Michigan
CITY: Troy		COUNTY: OAKLAND
CONTACT: Terrence Senish , General Manager		ACTIVITY DATE: 06/13/2014
STAFF: Rebecca Loftus	COMPLIANCE STATUS: Compliance	SOURCE CLASS:
SUBJECT:		
RESOLVED COMPLAINTS:		

June 3, 2014 Inspection

On June 3, 2014, I, Rebecca Loftus, from the Department of Environmental Quality's (DEQ), Air Quality Division (AQD), attempted to conduct a self-initiated inspection of ExOne located at 2341 Alger Street, Troy, Michigan. The addresses previously housed Extrude Home Cation and Kennametal Inc.). The purpose of this inspection was to determine the facility's compliance with the Federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, and Michigan's Air Pollution Control Rules.

I arrived on-site at 1:10pm and spoke with ExOne's receptionist, Anna. I explained where I was from, the purpose of my inspection, and gave her my business card and the "Environmental Inspections: Rights and Responsibilities" brochure. Anna explained that no one was there to escort me through the building and gave me the business card for the person who could help me: Mr. Terrence Senish, General Manager. Mr. Senish is not regularly in the office so Anna suggested I call to make an appointment with him.

I will follow-up with Mr. Senish and will proceed as necessary if I am denied access to the building again.

June 13, 2014 Inspection

On June 13, 2014, I, Rebecca Loftus, from the Department of Environmental Quality's (DEQ), Air Quality Division (AQD), conduct a self-initiated inspection of ExOne located at 2341 Alger Street, Troy, Michigan. The purpose of this inspection was to determine the facility's compliance with the Federal Clean Air Act, Part 55, Air Pollution Control, of the Natural Resources and Environmental Protection Act of 1994, PA 451, as amended, and Michigan's Air Pollution Control Rules.

I arrived on-site at 8:30am and met with Mr. Terry Senish, General Manager. Mr. Senish escorted me through the 20,000 sq ft building and explained the following:

At this location, ExOne uses sand and three-dimensional printing to create molds for various industries including Aerospace castings (the castings are pour off-site at foundries). The building has a total of five printers: two S-MAX machines (prints molds in 24 hours), two S-15 machines (prints molds in 48 hours) and one S-Print machine (uses water as the binder and has a microwave dryer). Each printer is a self-contained machine (similar to a CNC machine). The 3D printing process creates an object layer by layer using fine grain silica sand, a binder, an activator, and a cleaner (see attached MSDSs). Because the facility also acts as a distributor of the sand, binder, activator, and cleaner, Mr. Senish could not provide accurate facility material usage records.

In addition to the printers, the facility has a vacuum system for the loose sand that remains on the molds. The sand is collected and reused in future molds and the exhaust is sent through a HEPA filter and out the west side of the building. I did not observe any dust near the exhaust point and Mr. Senish explained the filter is maintained on a yearly basis.

On July 24, 2014, Mr. Senish provided me with an ExOne emissions study conducted where the machines are made in Germany (see attached). If one assumes production is 24 hours 7 days a week, according to the emission factors established in the study, each printer and oven have very small emissions (most of the binder/activator stays in the sand mold). This process exempt appears to be exempt from obtaining a permit to install pursuant to Rule 290.

Conclusion

Based on information gathered, at this time, ExOne appears to be in compliance with Michigan's Air Pollution Control Rules and the Federal Clean Air Act.

NAME Rebecca Loftus DATE 8/7/14 SUPERVISOR CJE