

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

B228639875

FACILITY: MARTINREA		SRN / ID: B2286
LOCATION: 260 GAIGE ST, JONESVILLE		DISTRICT: Jackson
CITY: JONESVILLE		COUNTY: HILLSDALE
CONTACT:		ACTIVITY DATE: 05/18/2017
STAFF: Mike Kovalchick	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MINOR
SUBJECT: Scheduled inspection of auto parts supplier that used a large amount of weld wire.		
RESOLVED COMPLAINTS:		

Minor Source**Facility Contact**

Steve Reed- Environmental, Health & Safety Manager

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<http://martinrea.com/>**Purpose**

On May 18, 2017, I conducted an unannounced compliance inspection of Martinrea (Company) located in Jonesville, Michigan in Hillsdale County. The purpose of the inspection was to determine the facility's compliance status with the applicable federal and state air pollution regulations, particularly Michigan Act 451, Part 55, Air Pollution Control Act and administrative rules.

Facility Location

The facility is located in a commercial area of Blissfield. See aerial photo dated October, 2016.

Facility Background

The following is a summary of the previous inspection report dated 3/9/2011 :

"Vrajesh Patel and I arrived at the Martinrea Jonesville Plant for a meeting/inspection with Mr. Paul McClure. Martinrea recently conducted an Environmental Audit and based on the results Mr. McClure had concerns of whether the company needed permits for any of their operations.

Martinrea purchased the SKD Automotive Group Jonesville Plant in early 2009, and has since expanded the foot print of the building with additional expansion planned for the near future. The operations at the plant remain the same, which are metal stamping, welding and assembly of automotive parts.

At one time this facility had two permits for welding operations PTI Nos. 451-92 and 817-92. These permits were voided on September 21, 2004, as the equipment met the Rule 285(i) exemption for "brazing, soldering, welding, or plasma coating equipment".

The company currently has 91 welding cells, with approximately 270 spot welders, 43 MIG welders, 3 plasma cutters (used for QA/QC purposes), several presses (up to 3,000 ton), 2 Torit dust collectors and a large BCP dust collector, and a 400,000 BTU boiler for waste water reduction.

As mentioned above, Rule 285(i) exempts all the welding operations from permitting. The current concern is the company plans to exceed using 1,000,000 pounds of welding wire this year. The exemption does not limit the amount of welding wire used and the company's calculations show uncontrolled particulate matter emissions of approximately 6 tons for 2010, using 250,000 pounds of welding wire, well below any significant levels. The company would have to use approximately 4.2 million tons of wire per year to make it a major source of Particulate Matter.

The metal presses are exempt from permitting by Rule 285(l)(i): "The following equipment and any exhaust system or collector exclusively serving the equipment: (i) Equipment used exclusively for bending, forming, expanding, rolling, forging, pressing, drawing, stamping, spinning, or extruding either

hot or cold metals."

The boiler is used to evaporate water from the sludge that is collected by the floor cleaners. This equipment is exempt from permitting by Rule 285(m). The wash water from the floor cleaners is dumped into a pit and then pumped into the boiler where the water is evaporated off and the sludge is returned to the pit. When the sludge is too thick to pump it is collected and sent for waste disposal.

The facility appeared very clean during our inspection, except for one area of the plant where there was a heavy plume of smoke from one of the MIG welding operations. Mr. McClure reported the company was adding two air make-up units to the area and he was having a HVAC contractor come in to evaluate the existing duct work.

As of the date of the inspection the company is a true minor source and has operations that meet various exemptions of Rule 201. Therefore, Air Use Permits are not currently required at this facility."

Regulatory Applicability

There are no PTI's for the facility.

Welding equipment is exempt per Rule 285(i).

Plasma cutting of metal is exempt per Rule 285(l)(vi).

Metal presses are exempt per Rule 285(l)(i).

Rule 301 applies to the opacity of smoke exhausted externally from the building

Rule 901(a) applies if emissions from the facility are such that they result in injurious effects to human health or safety, animal life, plant life of significant economic value, or property.

Rule 901(b) applies if emissions from the facility cause an unreasonable interference with the comfortable enjoyment of life and property. (such as from fugitive dust)

Rule 910 requires air-cleaning devices be installed, maintained, and operated in a satisfactory manner and in accordance with all existing regulations.

Arrival & Facility Contact

Visible emissions or odors were not observed upon my approach to the Company's facility. I arrived at 10:15 am, proceeded to the facility office to request access for an inspection, provided my identification and spoke with Steve Reed (SR)-Environmental, Health & Safety Manager of the facility. I informed him of my intent to conduct a facility inspection and to review the various records as necessary.

SR extended his full cooperation during my visit and fully addressed my questions.

Pre-Inspection Meeting

SR outlined that the facility is operating 24 hours a day, 5 to 6 days a week. SR indicated that most of their business is in the manufacture of automotive steel parts for most of the major auto companies. They currently have 560 employees which is down from a high of 700 employees due to the loss of some programs. More programs are being added in the near future.

Since the previous inspection in 2011, the boiler used to evaporate water from sludge that is collected by floor cleaners has been removed. The waste water is currently sent off site but there are tentative plans to install a new boiler to do the same thing. (The sludge contains mostly iron and manganese.)

SR indicated there are a couple of plasma cutters that are used for QA/QC purposes that are controlled by internally vented dust collectors.

There are approximately 90 welding "cells". Each cell consists of a combination of about 3 robotic spot welders and a manually operated MIG welding working together. The exact number of cells is changing all the time as cells are removed and new ones are added when new contracts are obtained from an auto company. SR estimated that approximately 75% of the cells are controlled with dust collectors that are

located either inside or outside the building. The rest are either exhausted outside without control or smoke exits through side wall fans. Due to negative pressure problems inside the building due to so much air flow exiting the building, going forward the newer programs will exhaust inside the building likely into dust collectors.

SR indicated that due to a complaint about smoke inside the building in one area, some OSHA type testing was conducted. In the worse area, the compound of most concern, manganese was found to be 5 times under the health standard. Iron oxide was the most prominent compound encountered. Little if any chromium was detected. The area of the building where the higher readings were detected has since been abated by installing fans on the building side wall directly adjacent to the cell that was creating problems.

SR indicated that a dust collector located outside the building that controls the Twist Axle area recently exploded for an unknown recent. The exhaust system associated with the dust collector is still being used.

SR indicated that there are no coating operations in the facility. They do some touch up using aerosol cans and also the inside of the building itself is being painted but that is about it.

During the pre-meeting, I asked SR for the last 12 months of purchase records of weld wire and the Safety Data Sheets associated with them. SR indicated that he would have this information to me prior to the end of the inspection.

Onsite Inspection

SR gave me a tour of the facility. (Note: Safety glasses, ear protection, long sleeves, steel toed boots required. Safety vest needed to access some areas that we didn't visit. A roof inspection was not conducted due to high winds and SR indicating that portions of the roof were not particularly safe.)

The facility is very large with multiple buildings connected together and only a fraction of it was inspected although much of it could be seen from a distance. Overall, the facility appeared to be clean and very busy with smoke inside the building only seen in a couple of areas. Several floor cleaners machines were seen going back and forth throughout the plant.

We first stopped at a plasma cutting operation that was being used to do some QA/QC of the welds of the auto parts that they produce. The torch itself was small and only generating a small amount of smoke that was being collected by portable dust collector unit that vented into the building.

Next we visited the GMT cell area where welding cells are controlled by a Torit dust collector located inside the building. The pressure drop reading was 2.1". The exhaust from the dust collector was vented through the side wall of the building. A check outside confirmed that the exhaust came out through the wall was being vented downward toward the ground at a low height. No smoke was seen coming out of the exhaust.

We next visited the part of the plant where there had been a complaint lodged about smoke affecting workers. Some smoke was visible but 2 wall fans appeared to be doing an okay job of clearing the smoke from the area.

We then walked outside the building to view a series of three dust collectors that were along the building wall. (See attached photos.)

The first one was the one from the Twist Axle part of the facility that had recently blown up. The exhaust fan was still operating. No opacity was noted.

The next one is known as the LCA (Lower Control Arm) baghouse. It appeared to be operating in satisfactory manner with no opacity noted.

The third one is known as the WK Torit baghouse. No findings.

Adjacent to the dust collectors, there was a small service road and adjacent company property. Some dust was seen blowing around due to the high winds. I commented to SR about the rules that apply to fugitive dust and the need to make sure that it doesn't become a problem.

Next, we cut through the building to access another area outside the main building. We observed an outside exhaust fan and stack that was coming from the DS line. There was some opacity coming from this exhaust stack which I estimated to be about 10%. I explained to DS the rules regarding opacity.

Recordkeeping/Permit Requirements Review

We went back to SR's office to look at records.

Attachment (1) is the Safety Data Sheets for the vast majority of the weld wire that is being used. The main compound of concern is manganese which makes up between 1 and 5% of the weld wire.

Attachment's (2) through (5) are weld wire purchase records. Adding all the wire up comes out to be 1,929,220 pounds which is large increase from the 250,000 pounds used in 2010.

During the 2011 inspection, the Company estimated particulate emissions using 250,000 pounds of weld wire and assuming it is all uncontrolled at 6 tons. Scaling that up to current numbers results in 46 tons of particulate emissions if all uncontrolled. Assuming 75% control, this number drops to about 11.6 tons.

Considering that the facility is close to maximum production capacity, there doesn't appear to be a concern that the facility would exceed the 100 ton potential to emit threshold for particulate that would trigger the ROP permit requirement.

Worse case manganese emissions are estimated to be 11.6 tons X (0.05) or 0.58 tons. This assumes that the weld wire contains the maximum 5%, and that 5% of the particulate emissions consist of manganese. This estimate doesn't appear to represent a toxicity problem especially considering the multiple emissions points spread out over a large area. Also, OSHA testing in the most smoke prone area inside the plant directly where it is being generated detected manganese levels well below health concerns so it appears unlikely that problems would exist outside the facility.

(Note: Kirchhoff Automotive Tecumseh recently did emission estimates from a similar process using a basis of about 650,000 pounds of weld wire. In their case, all the emissions are uncontrolled. They estimated PM emissions of 2.85 tons. This number would scale up to 8.4 tons for the Company.)

EPA emissions factors for these type of operations include numbers for PM, Cr, Cr(VI), Co, Mn, Ni and Pb reflecting that some weld wire is much more toxic than other types although some of the emissions could be coming from the steel that is being welded. The most appropriate emission factor for manganese appears to be 0.318 pounds per 1000 pounds electrode consumed which works to 613 pounds of manganese uncontrolled or about 153 pounds controlled emitted for the last 12 months at the Company.

Post-Inspection Meeting

I held a brief post-inspection meeting with SR. I indicated that I didn't find any compliance problems but did have a few concerns. I discussed the minor issue with fugitive dust outside the facility, the observation of 10% opacity smoke coming from the DS line, and an overall concern about particulate and manganese emissions which are significant due to the very large amount of weld wire that are being consumed at the facility. SR asked about his Company's intentions to install a boiler to evaporate water from the floor cleanings on whether it would be exempt from permitting or not. I stated that he could email me a write up on the proposed project and I would let him know my thoughts on the matter. I thanked him for his time and cooperation, and I departed the facility at approximately Noon.

Compliance Summary

The Company is in compliance.

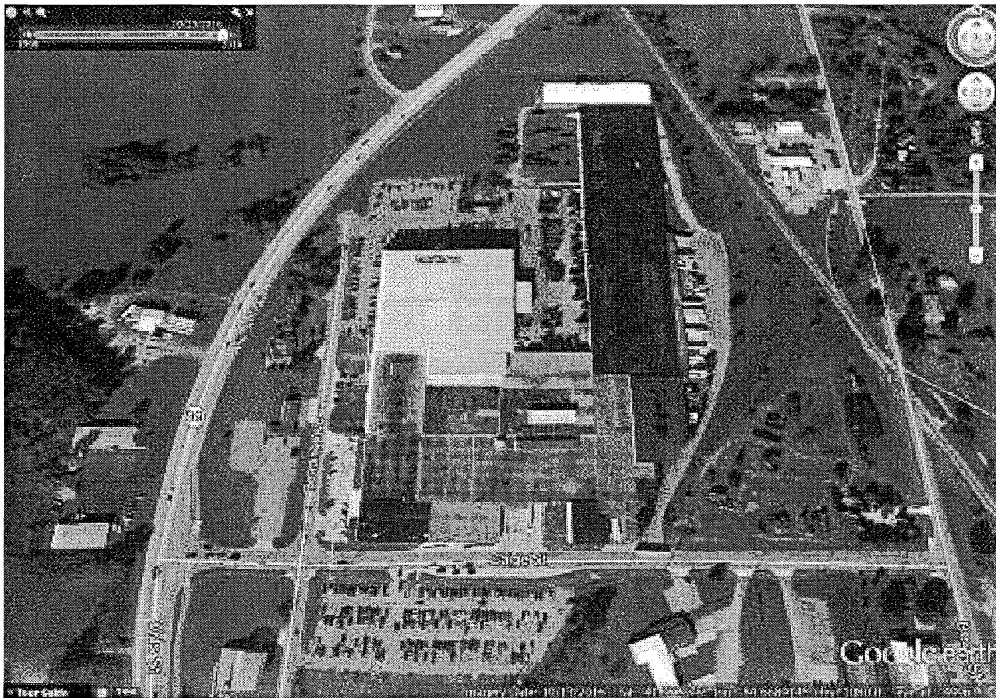


Image 1(Aerial photo) : Aerial photo facility and surrounding area.

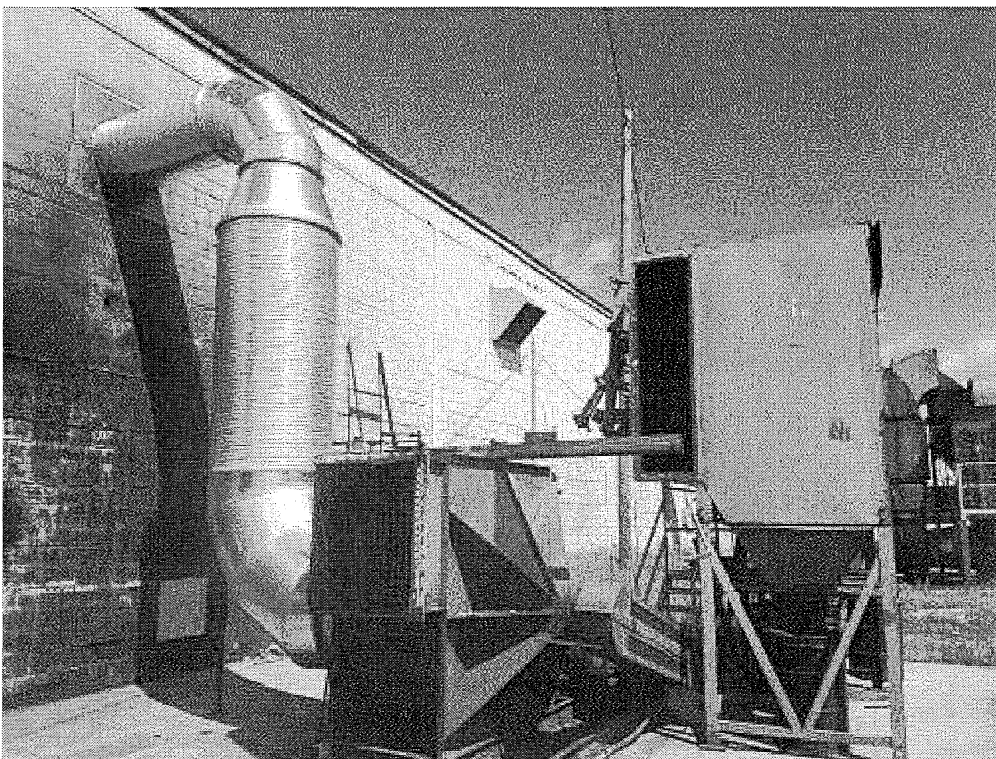


Image 2(Dust collector) : Dust collector

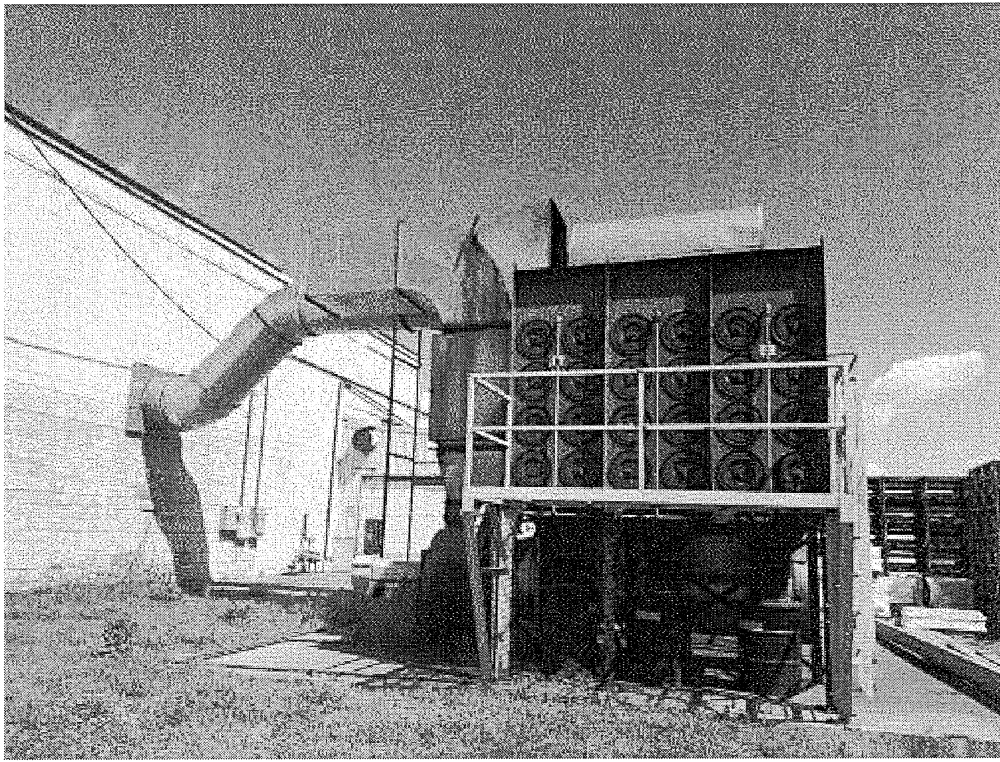


Image 3(Dust Collector) : Dust Collector

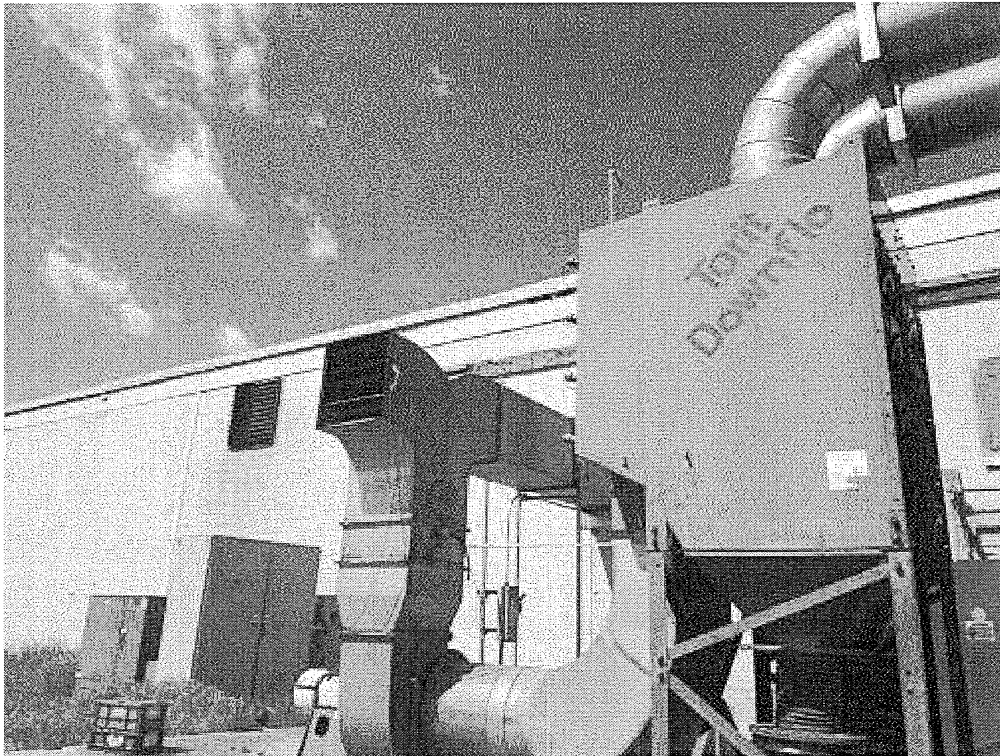


Image 4(Dust collector) : Dust collector



Image 5(DS Line Exhaust) : DS line Exhaust

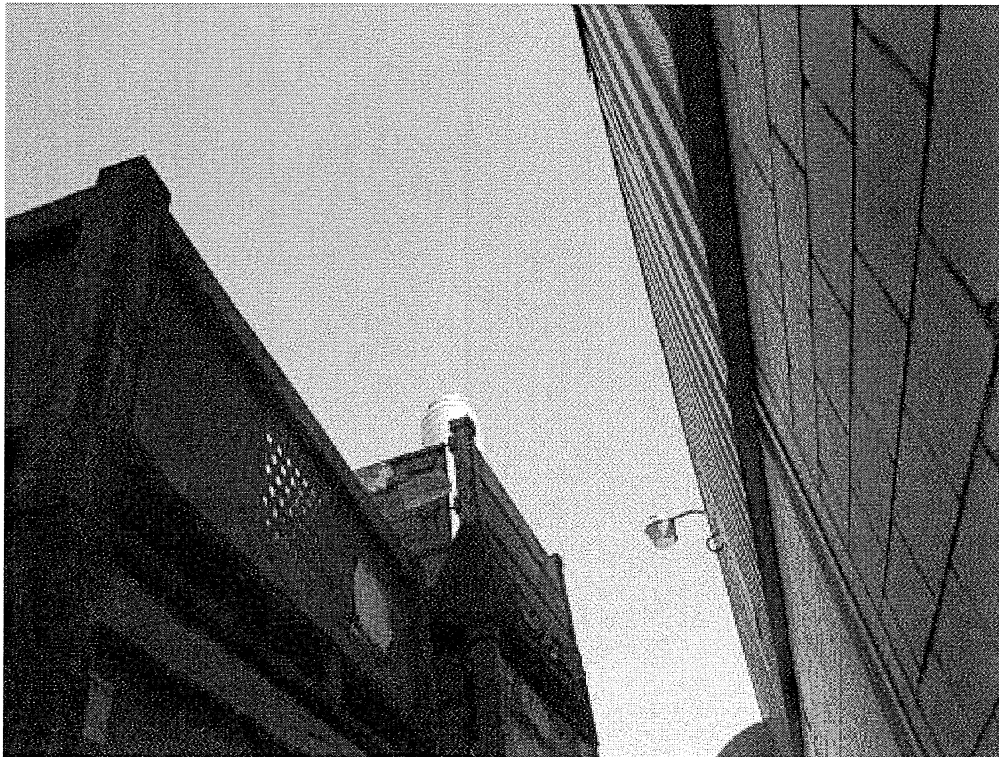


Image 6(Opacity from DS Line) : Opacity from DS Line

NAME M. Kovalchick

DATE 6/19/2017

SUPERVISOR 