

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

A245768777

FACILITY: Louis Padnos Iron & Metal		SRN / ID: A2457
LOCATION: 2001 TURNER ST, GRAND RAPIDS		DISTRICT: Grand Rapids
CITY: GRAND RAPIDS		COUNTY: KENT
CONTACT: Robert McCormick , Safety & Environmental Coordinator		ACTIVITY DATE: 08/22/2023
STAFF: April Lazzaro	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MINOR
SUBJECT: Unannounced, scheduled inspection.		
RESOLVED COMPLAINTS:		

Staff, April Lazzaro arrived at the facility on August 22, 2023, for an unannounced, scheduled inspection. Upon arrival I learned that Jason Dannenberg, the Turner Yard Supervisor was out for the day. I requested assistance from any staff available and was met by Josh Shaw, Director of Manufacturing - Metals and Charlie Evarts, Team Lead. Vehicle track out was observed from the northernmost entrance to the property. While I was waiting for assistance, I observed the yard from the public scrap sales dock. Smoke from torching was observed as well as smoke from the shredder. No specific odors originating from either were noted.

FACILITY DESCRIPTION

This facility is scrap recycling facility that operates a variety of operations. It consists of contract scrap processing as well as a public scrap recycling endpoint. Scrap processing starts with fluid and chlorofluorocarbon (CFC) and mercury recovery systems. This system, including the incoming scrap inspection process has been updated since the last inspection. Padnos uses a computerized form which is part of the tracking of each load of scrap. A system database identifies the parts, and whether or not it contains mercury switches, as well as where those are specifically located in the scrap (car/appliance etc) If liquids or CFCs are present, it is routed to one of two liquid recovery areas. Following inspection and prohibited item removal, the material will be sorted. Large material is torched on the torching pad by Canyon Torching. Padnos has stated this is exempt pursuant to Rule 285(2)(j) with no modifications causing a reconstruction. There is also a shear used on some scrap to reduce the size of large material and is automated. The shear is used on a production basis, and fugitive dust was observed from material movement in this area during the inspection. The exemption used for this process is unknown, and a request will be made to identify the permit status.

A follow-up on-site inspection was conducted on August 30, 2023, where Jason Dannenberg, Charlie Evarts, Rob McCormick, Safety & Environmental Coordinator and Kyle Daneff, Environmental Manager were present.

This facility operates pursuant to Permit to Install (PTI) No. 278-06A which was written to include two shredders (EU-SHREDDER and EU-OLDSHREDDER) and associated post-shredder separation process activities, conveyors and material management. The post- shredder separation processes are identified as EU-FERROUSZBOX and EU-NONFERROUS. The permit is written so that only one shredder can legally operate at any one time. At the time of the inspection, AQD learned that EU-OLDSHREDDER has been removed from the facility. Emission limits for EU-SHREDDER have been verified through stack testing and results are on file.

During the previous inspection, I asked about perfluorooctanoic acid (PFOS), and learned that the material has not been utilized at this facility. Recently a firefighting foam system was installed and is PFOS free.

COMPLIANCE EVALUATION

TORCHING AREA

Since smoke was observed from the torching area, this was inspected first. Upon arriving in the area, a large press was in the process of disassembly via torching by Canyon Torching staff. Attached photos show that the part was leaking oil, was grease covered and rubber hoses had been torched. I referred to the AQD file copy of the Padnos Best Management Practices (BMP) for torching, which I had brought with me and we discussed the fact that it appeared several of the BMP's were not being

followed. Specifically, the BMP states that machinery or presses may be torched under special circumstances, and that they can present multiple problems. The BMP states that all non-metallic elements should be removed, all oil/grease/fluids should be drained and appropriately recycled. The plan refers to a procedure named "Receiving Unclean Machinery or Equipment". This part of the BMP states that any oil or grease that is coating these items needs to be pressure-washed at a cleaning station prior to torching. As stated above, these items of the BMP were not followed prior to torching the press. Discussion ensued whereby Padnos indicated that they do their best to eliminate the items noted, but that sometimes they don't know where the oil is stored, and hoses are located until they get 'into' the large presses. It is noted that no effort to clean or drain the oil had taken place.

At the end of the inspection, we returned to the torching pad again after being joined by Rob McCormick Safety & Environmental Coordinator and Kyle Daneff, Environmental Manager. I explained that my observations are that the torching company employed by Padnos is not following the BMP for torching that has been established practice for many years. At that time, it was noted that no action had been taken to address the oil leaking from the press.

The AQD will request a formal Malfunction Abatement Plan pursuant to Rule 911 for the torching operations. It is noted that in an email communication, Padnos intends to conduct a trial operation of a hydrogen torching system that is touted as a lower smoke and emissions approach. The AQD informed Padnos that they must identify whether a permit exemption would apply to this process. A Rule 278 Exemption Demonstration will be requested.

PTI No. 278-06A

This PTI identifies the multiple emission units associated with the shredder operation. The permitted equipment includes, EU-SHREDDER, which consists of a 4,000 hp scrap metal shredder with an electric motor to power the rotor. The shredder is equipped with a Smart Water Injection System. This shredder has a maximum rated throughput of 160 gross tons per hour (tph), however the unit typically operates at or below the 100 tph. The area where material is shredded is also referred to as the hammermill. EU-FERROUSZBOX consists of one ferrous separation process with a z-box/cyclone control system. The cyclone discharges through a single exhaust stack. EU-NON-FERROUS consists of one non-ferrous separation system with cyclone separator.

Staff went into the control tower to discuss operating parameters and obtain real-time monitoring data required by the PTI No. 278-06A. We met with Vaughn, who has been operating the shredder for many years. During the inspection, the shredder was operating at 73 tons per hour. The water injection rate was 0.3 gallons/second at 40 pounds per square inch (psi). The motor current was at/around 320 amperes/hour. While these data points are variable based on the material being processed, the values are similar to data points obtained during previous inspections.

EU-SHREDDER

This emission unit applies to the shredder and Smart Water Injection System. The shredder has exhaust hoods that are intended to capture emissions and discharge through a single exhaust stack.

Padnos has been advised in the past that a ~20% increase over the 104 tons per hour testing average will lead to additional testing. The reason for this is that the unit was relatively close to PM-10 and quite close to the PM emission limits as established in the permit while operating at 104 tph. At this time, they have not yet achieved this level of production (~120 tph). Recordkeeping for production and hours of operation, including days where the unit did not operate are attached.

Emission Limits

Emission limits for PM10, PM, Mercury and hexavalent chromium are included, and 2018 stack testing determined compliance with those limits. Opacity was observed from the shredder when I arrived on site for the first day of the inspection. (see attached photo) Additionally, opacity around the enclosure hood portion have been observed by AQD staff while driving past the facility on personal time, however a specific opacity/emission limit exceedance has not been documented to date. During times when excessive smoke has been observed, Padnos has been contacted via email. Opacity readings taken during the stack test indicated compliance with the 10% limit.

Material Limits

The permittee shall not process more than 873,600 tons per 12-month rolling time period as determined at the end of each calendar month of material. This data was requested for the time period of January 2022-July 2023. Initial data submitted did not include January-July 2022, however that was later provided and reviewed. The highest 12-month rolling total material processed in the time period reviewed was during the March 2022-February 2023 period with 267,243 tons. The data provided indicates compliance with the limit.

Process/Operational Restrictions

The permittee shall not operate EU-SHREDDER more than 15 hours per calendar day and 5,460 hours per 12-month rolling time period determined at the end of each calendar month. This data was requested for the time period of January 2022-July 2023. Initial data submitted did not include January-July 2022, however that was later provided. Daily hours of operation are reported to be at or below the limit of 15 hours, with the shredder operating 14 hours per day routinely as well as multiple times where 15 hours per day were recorded. During the second site inspection conducted on August 30, 2023, the daily log sheets were observed for the following days where 15 hours of production was recorded: June 1 & 2, May 22 and January 12, 2023. This review found that the shredder did not operate more than 15 hours per day. A recommendation was made that on those days where 15 hours of operation is recorded, Padnos staff could write down a specific start and stop time. The current 12-month rolling total hours of operation are reported at 294.00 hours for the period ending in July 2023. The data provided indicates compliance with the limit. The typical maximum throughput at the shredder is between 70 and 80 tons per hour. At this time, the facility has not exceeded the rate achieved during stack testing.

Design/Equipment Parameters

The shredder operator monitors and adjusts the water injection rate as needed throughout the day. At the time of the inspection, the water flow was injected at 40 psi and the operator stated that they can bump that up if smoke is observed and more water is needed. The flow was operating at 0.3 gallons per second and the motor was fluctuating at around 320 ampere-hr. While no obvious issues were noted visually with the Smart Water Injection System, it is noted that there was a significant amount of large non-ferrous materials escaping the shredder hammermill. This was noted while in the operator tower which we discussed it at that time. It was also noted that later when we walked through the yard between the ferrous and non-ferrous separation systems that there was a lot of material landing on us and floating around in the air.

Testing/Sampling

As previously discussed, testing for particulates, mercury and hexavalent chromium has been conducted and results indicated compliance with the limits.

Monitoring/Recordkeeping

Calibration records were requested for the devices monitor the water injection rate and the shredder motor current, which were received timely. Additional information was requested, since the information did not include any indication of pass/fail nor did it include units of measurement for the values provided. The additional information was provided, and it showed compliance the requirements.

The permit requires that the permittee record the water injection rate and shredder motor current. The permittee provided total gallons water used on a daily basis, and the actual injection rate is monitored by the operator. During daily operation, the data logger records ampere-hr. The motor current information was also provided and reviewed. The data being recorded is not the ampere-hr units of actual motor current, is converted to kWh/ton. The information received initially listed the units of MWH at the column heading. During the second inspection, this was discussed with Padnos staff that those units did not seem accurate. Padnos revisited the information and found that the column units are actually kilowatt hours/ton (kWh/ton). I requested that Padnos resubmit the information with the correct information for the file. According to information found online, the electrical charge in amp-hours equals the energy in kilowatt-hours times 1000, divided by voltage. The power used is monitored by a programmable logic controller (PLC) that is connected to the shredder. The program monitors a variety of things on the shredder, such as bearing heat and amperage to ensure proper

performance and provide notice to Padnos if data shows parameters operating outside of recommended specifications.

I requested calibration records for the devices used to monitor the water injection rate and the shredder motor current, and this information was received timely. The report provided did not indicate the results of the calibrations, and clarification received from Padnos indicated that any parameter that is out of specification by more than 20% is formatted to turn the results "red". The results did not indicate a parameter out of specification greater than 20%.

Reporting

Padnos has not reported that a production capacity greater than 120 tons/hr has been achieved. Production data corroborates this.

Stack/Vent Restrictions

During the inspection the Forestry Pro II Range Finder was used to measure the shredder stack height. Multiple AQD and Padnos measurements taken indicated that the stack height was 40' which is less than the required 45'. Padnos informed the AQD on August 28, 2023 that they had measured the stack height using a lift and found it to be 45'6". During the August 29, 2023 inspection, AQD staff observed the measurement of the stack and did confirm that it was 45'6". This indicates compliance with the stack height requirement.

EU-OLDSHREDDER

This emission unit has been removed from the facility and therefore no additional compliance information is needed.

EU-FERROUSZBOX

This emission unit consists of a ferrous separation process with a z-box / cyclone. The cyclone discharges through a single exhaust stack.

Emission Limits

There is an associated PM10 and PM emission limit associated with this stack, however at this time no stack testing has been required.

Material Limits and Process/Operational Limits

NA

Design/Equipment Parameters

During the inspection, no obvious physical impairments to the cyclone were observed from the outside of the unit.

Testing/Sampling, Monitoring/Recordkeeping, Reporting

NA

Stack/Vent Restrictions

During the inspection, the unit was observed, and a stack height measurement was going to be taken. The stack on this emission unit had broken and fell over approximately one month ago. The remaining stack was also partially covered. (see attached photos) This is a violation of PTI No. 278-06A for failure to meet the stack height requirement. A Violation Notice will be issued. It is noted that Padnos had repaired and reinstalled the stack by August 29, 2023.

Other Requirements

NA

EU-NONFERROUS

During the inspection, AQD found that the original EU-NONFERROUS emission unit had been removed and replaced with an entirely new system. The new system consists of a screen and sorting equipment and two cyclones that discharge different materials to the two sides of the material storage area. Padnos asserted that this is a closed loop system with no stack. Both cyclones are equipped with discharge chutes. However, as noted previously, in this area was a significant amount of non-ferrous materials flying around in the air and landing on and around us during the first inspection.

The replacement of an emission unit, without obtaining a Permit to Install, is a violation of Rule 201. A Violation Notice will be issued.

FG-SHREDDEROP

This flexible group includes the shredding operation and material separation system.

Emission Limits

Visible emissions are limited to 10% opacity from conveyors and transfer points. No visible emissions readings were taken during the inspection. However, it is noted that a large amount of non-ferrous materials were in the air in the area which landed on us during the inspection. As such, a violation of Rule 370, for failure to collect and dispose of air contaminants in a manner so as to minimize the introduction of contaminants to the outer air will be included in the Violation Notice.

Material Limits

NA

Process/Operational Limits

The permit restricts the use of both shredders at the same time, however as previously noted, the EU-OLDSHREDDER has been removed from the facility.

The permittee is required to properly remove and dispose of fluids, chlorofluorocarbons/halogenated chlorofluorocarbons (CFCs/HCFs) and mercury-containing devices from materials to be shredded.

Padnos has two new "hoop houses" which are covered structures that are used to remove fluids from materials to be shredded. As previously noted, this area, including the incoming scrap inspection process has been updated since the last inspection. Padnos uses a computerized form which is part of the tracking of each load of scrap. A system database identifies the parts, and whether or not it contains mercury switches, as well as where those are specifically located in the scrap (car/appliance etc) If liquids or CFCs/HCFs are present, that material is removed. Following inspection and prohibited item removal, the material will be sorted.

The Shredder Incoming Inspection plan utilized to demonstrate compliance with the above requirements was requested. The plan that was received is dated 9/20/07 and appears to be a copy of the plan from the AQD files. Since Padnos indicated that they have completely revamped the incoming inspection protocol, the AQD will request that this plan be updated and resubmitted.

No obvious asbestos containing material was observed during the inspection.

The permittee is limited to the amount of staging area for all non-metal and automotive shredder residue (e.g., fluff) generated by FG-SHREDDEROP in a total volume not to exceed 6,480 cubic yards. Padnos provided dimensional measurements of the non-metal staging area which showed this is currently at 5,557 cubic yards. (see attached) This area is continuously scooped by a front end loader and into trailers that are taken to the Grandville facility or elsewhere throughout the operating day.

Padnos noted that they have begun accepting used propane tanks from vendors and the public to reduce the number of 'hidden' tanks that can accompany a load of scrap.

The permittee is required to implement and maintain a Malfunction Abatement Plan. The plan was requested and submitted timely with a revision date of May 2023. It is noted that this plan is not

representative of the new non-ferrous separation system, which has two cyclones. An updated plan will be requested.

Records pursuant to the fugitive dust plan specified in Appendix A were requested and received. It is noted that this facility has a full-time employee position dedicated to water application. It is noted that track out was identified from the northernmost facility exit. This was discussed with Padnos during the inspection.

Testing/Sampling

NA

Monitoring/Recordkeeping

As previously specified, the permittee is maintaining the records required by the permit.

MISCELLANEOUS

Recently, the Institute of Scrap Recycling Industries (ISRI) developed and published emission factors for Volatile Organic Compound (VOC) emissions from metal shredders. The AQD will request that Padnos submit a Potential to Emit demonstration for all criteria pollutants at the stationary source.

CONCLUSION

The Louis Padnos Iron & Metal Turner Avenue facility was in non-compliance at the time of the inspection.



Image 1(Torching smoke) : Smoke observed from torching 8/23/23.



Image 2(Torched press) : Oil leaking from press being torched. 8/23/23



Image 3(Torched hoses) : Hoses being torched on press. 8/23/23



Image 4(Torched press) : Grease on press being torched. 8/23/23



Image 5(New emission unit) : New non-ferrous material separation system. 8/23/23



Image 6(Broken stack) : EU-FERROUSZBOX stack broken and on the ground. 8/23/23

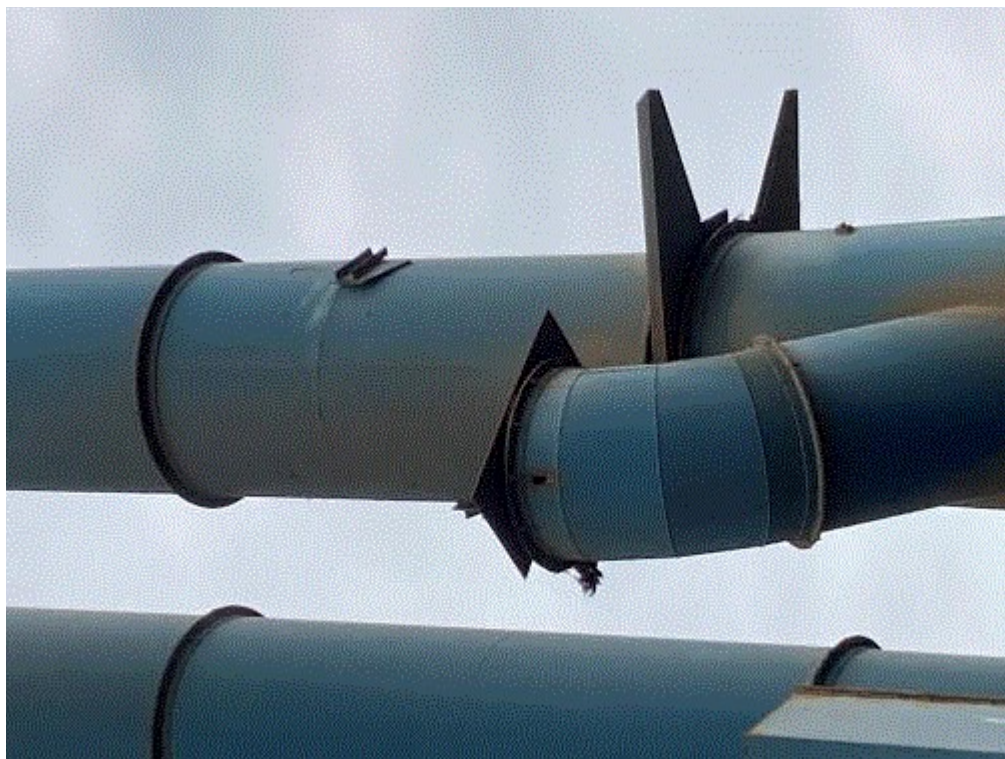


Image 7(Missing stack) : Remaining portion of stack, obstructed partially. Please view this image one turn

clockwise. 8/23/23



Image 8(Shredder opacity) : Opacity observed from shredder 8/23/23.



Image 9(Track out) : Track out observed from truck traffic exiting the northernmost roadway. 8/23/23



Image 10(Non ferrous system) : New non ferrous separation system, from shredder operator tower view.

NAME April Lazzaro

DATE 09/07/2023

SUPERVISOR HH