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

B228143719

FACILITY: Omnisource Corporation		**SRN / ID:** B2281
LOCATION: 701 LEWIS ST, JACKSON		**DISTRICT:** Jackson
CITY: JACKSON		**COUNTY:** JACKSON
CONTACT: Douglas McDonald ,		**ACTIVITY DATE:** 03/19/2018
STAFF: Mike Kovalchick	**COMPLIANCE STATUS:** Non Compliance	**SOURCE CLASS:** MINOR
SUBJECT: US EPA Inspection. AQD's role was to accompany EPA and offer assistance as needed.		
RESOLVED COMPLAINTS:		

Minor Source-SRN B2281

Facility Contacts

Doug McDonald – Plant Manager dmcdonald@omnisource.com ph 517-817-2771

Dave Centeno-Environmental Compliance Manager dcenteno@omnisource.com ph 574-229-5362

Website: http://www.omnisource.com/

US EPA Region V Contact

Scott Connolly-Environmental Engineer-Air Enforcement and Compliance Assurance. Connolly.Scott@epa.gov

ph 650-228-4029.

Purpose

On March 19, 2018, the U.S EPA and myself conducted an announced compliance inspection of OmniSource (Company) located in Jackson, Michigan in Jackson 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 and their Permit to Install (PTI) # 93-04A which was issued on January 6, 2005.

Facility Location

The facility is surrounded by commercial and industrial facilities on all sides, except for on the west and the southwest side, which consists of residential and church buildings. See aerial photo of facility.

Facility Background

OmniSource (previously Jackson Iron and Metal until 2004) is a large metal recycler located within the city of Jackson. According to the US EPA, this facility is classified as a minor air pollution source. It was last inspected on August 3, 2017 and was to be out of compliance due to unpermitted torch cutting.

Metal emission stack testing was last conducted on December 14-15, 2005. Mercury was tested to be 0.008 lbs/hour (.02 limit), manganese was 0.001 lbs/hour (0.01 limit), lead was 0.001 lbs/hour (0.06 limit), nickel at 0.0001 lbs/hour (0.006 limit), cadmium at 0.0005 lbs/hour (0.002 limit), chromium at 0.0002 lbs/hour (0.02 limit) and copper at 0.0006 lbs/hour (0.03 limit). PM was found to be 2.4 lbs/hour (11.25 lbs/hour limit). Note that all of these values were determined out the outlet of the venture scrubber. Significant fugitives emissions are possible from the hammermill and associated with the cyclone prior to entering the scrubber.

VOC stack testing was conducted on October 27-29, 2009. The Company conducted the test because an internal audit revealed that VOC emissions maybe greater than originally estimated in the permit process. (They were originally estimated to be, "minimal".) Auto Processing VOC test results were found to be 22.93 pounds/hour and 0.14 lb/ton of metal while non-auto sheet metal testing was found to be 8.32 pounds per hour and 0.05 lb/ton of metal. (At the time of the test, the Company normally was processing about 30% Cars, 70% white goods(like refrigerators) and other sources of metal.) Attachment (1) is a copy of the source test report. As was the case with the metal emission stack testing but to a higher degree, significant fugitives emissions are possible from the hammermill and associated with the cyclone prior to entering the scrubber. Fugitive losses can

also be expected from the separated metal as it dries.

The facility has the following emission units:

Emission Unit ID	Emission Unit Description	Stack Identification
EU-SHREDDER	Scrap metal shredder with a cyclone and venturi scrubber air pollution control (APC) system, a magnetic (drum magnet) ferrous separation process, a closed-loop single air cascade system (z-box) with a cyclone, oscillators, eddy current separators, nonmagnetic materials separation, associated conveyors, material storage, and all associated process activities including but not limited to management of waste materials associated with the shredding operations.	SV-SHREDDER
Changes to the equipment described in this table are subject to the requirements of R336.1201, except as allowed by R336.1278 to R336.1290.		

Flexible Group ID	Emission Units Included in Flexible Group	Stack Identification
FG-SHREDDERAPC	Cyclone and venture scrubber in series to control emissions from the shredder portion of EU-SHREDDER.	SV-SHREDDER
FG-ZBOXAPC	A closed-loop cyclone to control emissions from the single air cascade system (z-box) portion of EU-SHREDDER.	N.A.

Regulatory Applicability

PTI 93-04A covers the entire facility.

The source is also subject to 40 CFR Part 61, Subpart M, which requires that the facility not process any asbestos tailing or waste materials containing asbestos.

Torch cutting operations at the facility are no longer exempt from PTI requirements as outlined in letter that was sent to the Company in June:

"Dear Scrap Metal Recycling Owner,

On December 20, 2016, the Department of Environmental Quality (DEQ), Air Quality Division (AQD), finalized changes to Part 2 of the Michigan Air Pollution Control Rules. Specifically, Rule 336.1285(j) was amended, which pertains to portable torch cutting. Rules 336.1278 through 336.1290 were established to exempt insignificant sources of air pollution from having to obtain a permit to install.

The amended Rule 336.1285(2)(j) states that the requirement of Rule 336.1201(1) to obtain a permit to install (PTI) does not apply to any of the following:

(j) Portable torch cutting equipment that does not cause a nuisance or adversely impact surrounding areas and is used for either of the following:

(i) Activities performed on a non-production basis, such as maintenance, repair, and dismantling.

(ii) Scrap metal recycling and/or demolition activities that have emissions that are released only into the general in-plant environment and/or that have externally vented emissions equipped with an appropriately designed and operated enclosure and fabric filter.

As with all AQD permit exemptions, eligibility is based on any owner or operator's ability to provide a

demonstration that the process equipment meets the requirements of the exemption. In the future if your facility is unable to successfully demonstrate that it meets the requirements of an applicable exemption, you may be required to obtain a PTI for continued operation of the process equipment.

Complaints that are received by the AQD that are attributed to torching activities will be investigated by district staff and evaluated for compliance with opacity limitations under Rule 336.1301(1) and the nuisance provision of Rule 336.1901. This letter is intended to create awareness of this new requirement and to initiate discussion regarding any questions you may have."

Arrival & Facility Contact

No visible emissions nor odors were observed upon my approach to the Company's facility. I arrived at 12:45 pm and first met with Scott Connolly (SC) of the U.S. EPA-Region V in the parking lot. SC indicated that he had been in touch with the Company and confirmed that we would be meeting with them at 1 pm. We then proceeded to the facility office to request access for an inspection, provided our identification and spoke with David Centeno (DC) Environmental Compliance Manager and Doug McDonald (DM) the plant manager. We informed them of our intent to conduct a facility inspection and to review the various records as necessary. I explained that I was there to accompany SC in his inspection of this facility.

Both DC and DM extended their full cooperation and fully addressed our questions.

Pre-Inspection Meeting

DM outlined that the plant is operating generally between 7 am to 4 pm M-F with occasional work Saturday morning. Truck drivers might arrive as early as 2 am. Shredding is generally done between 7 am and 3 pm. Torch cutting is done from 6 am to 2 pm.

There are currently approximately 75 employees.

SC explained the purpose of his visit. He explained that he was part of an EPA initiative to inspect scrap metal shredders across the country due to significant levels of VOC emissions that been uncovered at other facilities and is specially interested in whether the VOC emissions result in facility being considered major sources. He mentioned that some very large metal shredders in California are controlled by thermal oxidizers.

He also indicated that he would be investigating compliance with 40 CFR Part 82 Subpart F (CFC Regulations) and specifically how the Company handles refrigerants that are collected/disposed off at the facility.

We discussed the VOC stack test report for the Company's metal shredder. (See Attachment (1)). I pointed out that test report indicated that the VOC's were tested where they enter the cyclone after being generated in the hammermill. The hammermill isn't sealed and so the reported VOC emission numbers likely only represent some fraction of the total amount of VOC's that are released by the process.

DC indicated he believes the Company submitted a PTI application back in 2010 to revise their permit due to the stack test report but were told by AQD Permit staff that a new permit modification was unnecessary.

SC mentioned that at facilities that had conducted stack testing resulted in their permits being update soon there after and was surprised that this Company didn't have a new PTI to reflect the stack test results.

DC discussed torch cutting. He indicated that a written update would be provided to the DEQ by April 1, 2018. The Company has plans to build an enclosure at both their Jackson and Adrian facility to conduct torch cutting indoors controlled by a dust collector. The Jackson facility will be located at the site on the NE part of the facility grounds where torch cutting is currently being conducted. It would be similar but an improved design over another Company's facility that they previously built near Bay City.

DC noted that the Company has plans to submit a permit application to change the current PTI permit language. The current language implies that gasoline tanks have to be removed from the car prior to processing while the Company believes simply making sure that the tanks are empty prior to processing is sufficient.

Onsite Inspection

Both DC and DM gave us a partial tour of the facility.

We visited the depollution area. It is where they process vehicles prior to entering the shredder. Freon, engine oil, gasoline were drained and captured, and mercury switches, batteries, etc. were being removed per various permit requirements. Inspected and depolluted scrap was then placed in a stock pile. (Process cars are spray painted with red.) Approximately 250 to 300 cars processed per month, at this facility and the shredder can process a whole car at a time. (Buses/trucks can also be processed but generally need to be cut up some before entering the shredder.) Mercury switches in vehicles are still being discovered and removed almost every business day. Mercury is also being found in electrical equipment/switches. Scrap metal that enters the facility enters via one of two ferrous material scales equipped with a radiation detector. If above 4 to 5 micro rads, the facility follows a certain protocol on handling this scrap. The gasoline tanks are being left on the vehicles that enter the shredder but it appears the process used to empty the tanks of gasoline is adequate to ensure that no gasoline goes through the shredder. We were also shown an area where freon etc. is being recycled from old refrigerators etc. They mark in pink the type of refrigerant present on the appliances containing the material and have a company named Golden Refrigerant take it be recycle. This Company comes by every 2 weeks to a month's time frame for more.

Next, we went over to observe the "fluff" bunker area. Various conveyers carry processed material from the shredder. The non-magnetic portion of it is considered the "fluff". The fluff may contain plastic, which may have melted due to the heat generated by the shredding processing. No fugitive dust was noted as the material appeared quite wet to the point that some liquid was seeping out the bottom of the pile onto the paved ground. The material appears to be wet due to the 2 spray bars associated with the shredder that have a combined usage rate of about 30 gallons per hour. The Company no longer processes the fluff on site. It remains onsite for only a short period of time before a front end loader scoops it up and places into a truck that goes to Toledo for processing there.

Next, we headed over to observe the shredder and associated equipment. The shredder was in operation. It was estimated that approximately 20% of the scrap was from autos which is a drop from previous years. See attached photo. Steam could be seen coming out of the hammermill box and some particulate was noted at times as well which might have been from a small fire. Later we entered the control room tower which is located just above the hammermill. See attached photos.

Much of the steam was escaping directly upwards but there were some signs of the approximately 10,000 cfm draw of the cyclone that was being used for particulate control. I estimated that the best case was that no more than 50% of the VOC's generating were entering the cyclone where they were measured during the 2009 VOC stack test. We were also able to observe one of two spray bars being used to keep the shredder from overheating. It also acts as a dust suppressant. Very little particulate emissions were seen from this vantage point.

We visited the room housing the 50,000 cfm venturi scrubber. I observed a gauge that was labeled "sump level" which appeared to be measuring the pressure drop across the scrubber based on where the pressure sensors were located. (See attached photo.) It was showing about 8" water pressure. (Malfunction abatement plan lists the normal operating parameters for the scrubber to be 4" to 9" of water, a flow recycle rate of 1 to 3 gallons/hour with a water level reading of between 5 to 200 gallons.)

I observed the gauge that they use to measure flow rate of water that is added to the scrubber to maintain adequate of amount of water to be used for the scrubber recycle water. It is reset every day and it showed that 19 gallons had been added so far that day. I asked how the waste/collected air contaminants from the scrubber is being handled. An operator indicated that very little sludge is being generated at all but thought it was being handled as a non-hazardous solid waste. See attached photo of the collector waste being deposited into a dumpster. The vast majority of the collected material is being captured by the 2 cyclones. The Z-box cyclone exhausts back into the process and is the larger of the 2 cyclones. Material collected form the 2 cyclones directly enters a conveyer system.

I did not observe any collected air containments on the ground and the area surrounded the shredder process was paved with just small amounts of wet material on it.

Per SC 2.4, the shredder may not be operated unless the cyclone and venturi scrubber are installed, maintained, and operated in a satisfactory manner. DM indicated that the system is now interlocked so the shredder can't be turned on without the associated scrubber/cyclones operating.

Opacity could be seen exiting the scrubber stack. It wasn't clear if it was condensing hydrocarbons or particulates. Opacity was estimated to between 10 to 20% but no Method 9 readings were taken. (PTI limit is 10%) There was some possibility that part of the opacity was from water vapor. Ambient air temperature was in

the upper 30's degrees F. See attached photos.

Recordkeeping/Permit Requirements Review

Attachment (2) is the Permit Evaluation form for PTI 93-04. It was written on 6/30/2004. It notes the following:

"For VOC-BACT (R 702(a)) and T-Back (R 224), the applicant will develop and institute a waste management plan to remove and properly dispose of antifreeze, batteries, motor oil, transmission oil, brake fluid, CFCs-freon, etc., and mercury switches prior to scrap metal being processed in the shredder. This is to reduce the emission of VOCs and toxics. The plan was accepted as BACT and T-BACT. In addition, a cyclone and venture scrubber will be used to control particulate emissions from the shredder housing along with a water spray added to the shredder jaws to keep heat and particulate emissions controlled. This is accepted as T-BACT for the shredder processes as the potential emissions are particulate with heavy metals." PTI 93-04 and subsequent revision did not contain a VOC limit but the hours of operation and amount of material processed was restricted.

Attachment (3) is a portion of the PTI permit application for PTI 93-04 that was submitted on 3/30/2004. It notes the following: "**Process emissions of VOCs will be minimal**. As stated previously, OmniSouce will develop and implement a policy to remove reasonably accessible fluids that may contain VOCs from the materials to be processed. These procedures are intended to minimize VOC emissions." No other information was provided in the PTI application regarding VOC emissions.

Using emission factors per the VOC stack test conducted in 2009 (Auto Processing VOC test results were found to be 22.93 pounds/hour 0.14 lb/ton of metal while non-auto sheet metal testing was found to be 8.32 pounds per hour or 0.05 lb/ton of metal.) 0.14 lb/ton * 312,000 tons of metal allowed per 12 month rolling time period yields 21 tons per year maximum. If we assume the stack test only accounted for about 50% of the VOC actually generated in the process, this yields about 42 tons of potential VOC emissions.

VOC significant levels per Rule 119 is 40 TPY. Rule 203 requires a description in appropriate detail of the nature, concentration, particle size, pressure, temperature, and the uncontrolled and controlled quantity of all air contaminants that are reasonably anticipated due to the operation of the proposed process equipment. There was a meaningful change in the quantity of emissions compared to what was described in the original permit application. Note also that any Toxic Air Contaminants(TAC) from the VOC's were not reviewed in the original permit application.

Attachment (4) is a permit application/related disclosure info that was submitted by the Company back in December, 2010 related to the VOC emission testing.

Post-Inspection Meeting

A post-inspection meeting with held with the Company. I indicated that I had some concerns that the original stack test report did not fully account for all VOC emissions from the metal shredding process due to poor capture and this contrasts significantly with the original permit application which described VOC emissions as minimal. I outlined I also had some concerns about the venturi scrubber on whether it was working properly and the associated opacity. I mentioned that EPA has the lead regarding any potential VOC compliance issues from the metal shredder and I am only acting in a support role on this issue. SC indicated that the next step will likely be a Section 114 letter to the Company to gather more information prior to making a final decision on the VOC issue. SC indicated he also had some concerns about the opacity observed coming from the scrubber stack and would consider whether a stack test would be needed. DC indicated that the Company may go ahead a submit a new PTI application to incorporate the VOC emission information into the existing PTI and to also request the change concerning the language about the removal of gasoline tanks.

I thanked the Company for their time and cooperation, and I departed the facility at approximately 4:15 pm. SC departed at the same time.

Compliance Summary

The Company may be out of compliance with VOC emissions from their metal shredder and also due to excess opacity coming from their venture scrubber. Further investigation will be conducted prior to make a final decision on compliance.

The Company remains out of compliance with their torch cutting operation. The Company will be submitting a compliance plan update by April 1, 2018 regarding this matter.

Image 1(Aerial photo) : Aerial photo of Omnisouce

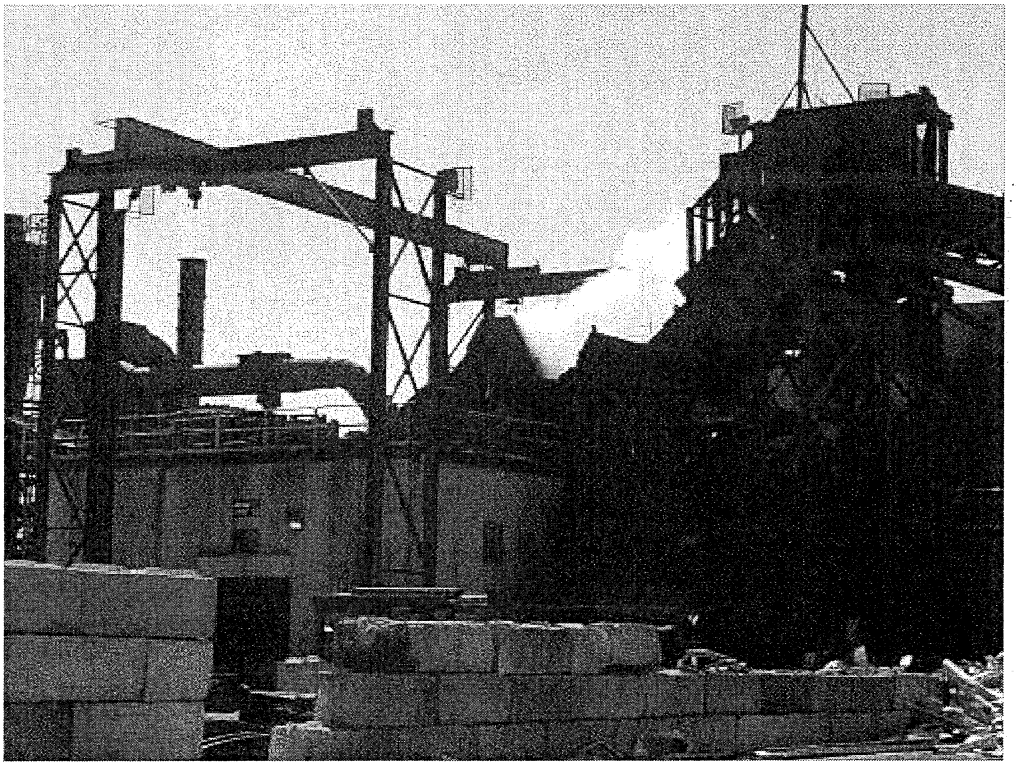

Image 2(Shredder) : Metal shredder. Steam coming from hammer mill portion of shredder.

Image 3(Metal shredder) : Metal shredder, z-box, cyclones and other associated equipment.

Image 4(Venturi scrubber) : Venturi scrubber stack showing opacity.

Image 5(Venturi Scrubber) : Venturi scrubber stack showing opacity.

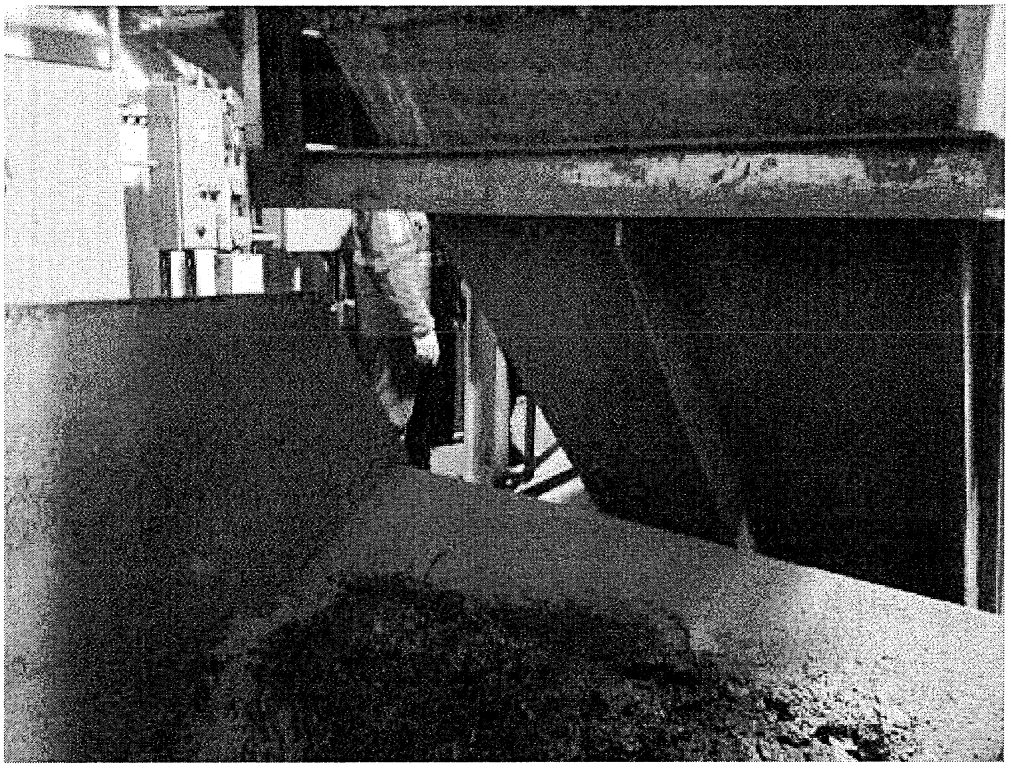

Image 6(Scrubber sludge) : Venturi scrubber sludge collection bin.

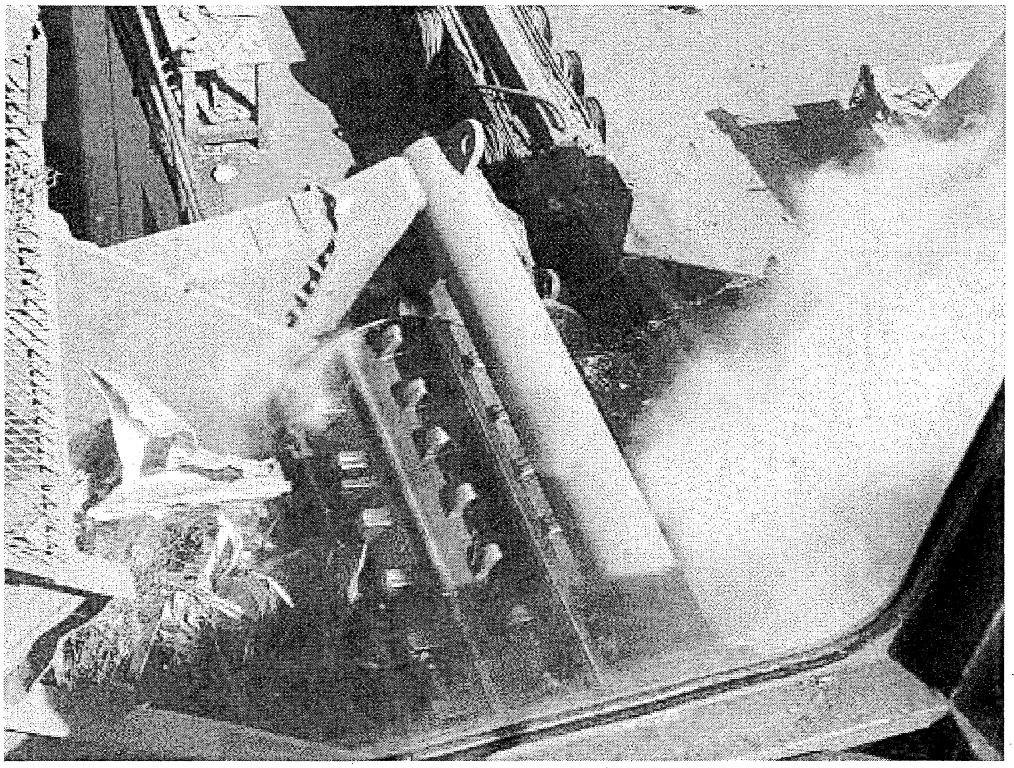

Image 7(Hammer mill) : Looking down into hammer mill.

Image 8(Conveyor) : Conveyor into metal shredder.

NAME M. Kovalchuk DATE 3/21/2018 SUPERVISOR