

**SIMS Metal Management Comments 3/10/2023-5/17/2023**

Date Comment Received	Comment	Attachments
5/16/2023	<p>I also wanted to mention that Olga Bautista apparently stated at last week’s “Environmental Justice Exchange” event that “We already have a ton of metal shredders in our neighborhood.” Presumably Ms. Bautista was referring to the Southeast Side of Chicago. Is CDPH aware that there are “a ton” of other metal shredders in Chicago? If this is the case, have all those other shredding facilities submitted applications for a Large Recycling Facility Permit, or at least a Class IVB Recycling Facility Permit? According to the Institute of Scrap Recycling Industries (ISRI), at the end of 2020 there were 10 metal shredders operating in the entire State of Illinois, and only ONE operating within the City of Chicago (Sims). For the sake of argument, let’s assume there is a recycling facility (or two, or three) that have somehow been able to install and operate a metal shredder in the City of Chicago without first obtaining permits from the Illinois EPA or CDPH. Even if such an unbelievable scenario turned out to be true, Ms. Bautista’s statement about “a ton of metal shredders in our neighborhood” is clearly a false and misleading statement. Was this an attempt to mislead the public into believing that the metal shredder at Southside Recycling wasn’t necessary? Or was she making such a dramatic statement (no matter how untrue) merely for effect? It’s impossible to know what motivated Ms. Bautista to make such a ridiculous statement, but this type of propaganda needs to be pointed out, and the citizens of Chicago need to know when they are being lied to. And it certainly raises questions about whether Ms. Bautista is capable of acting objectively as Co-Chair of the Cumulative Impact Assessment being conducted by CDPH.</p>	n/a
5/16/2023	<p>I want to raise the issue of Sims abysmal compliance history in light of some comments I heard Olga Bautista made during last week’s “Environmental Justice Exchange” event in Pilsen. I was told that Ms. Bautista was (predictably) bashing Southside Recycling, but that she was also very complimentary of a Sims facility in Bronx, New York. Apparently she stated that Sims’ Bronx facility is a model business that had “enclosed everything” and that “everybody should be more like Sims”. I’m not sure why Ms. Bautista would go out of her way to compliment Sims at an event being held to talk about the problems at Sims’ Pilsen facility, but a simple search of the Sims facility in Bronx, NY reveals that they have had 2 major (“ALL HANDS”) fires in the last 2 years and Google Maps shows that virtually the entire operation is actually NOT enclosed (see attached documents and video link below). I’m sure CDPH will consider Sims’ poor history of safely operating their Chicago facility, as well as their other recycling facilities throughout the country, during review of Sims’ Large Recycling Facility Permit application. But perhaps CDPH should also reconsider having Ms. Bautista chair CDPH’s Cumulative Impact Assessment based on her apparent affection for Sims and her clear bias against Southside Recycling. <a href="https://www.youtube.com/watch?v=PrjnP-JEYts">https://www.youtube.com/watch?v=PrjnP-JEYts</a></p>	Appendix A
5/10/2023	<p>Is CDPH considering the compliance history of other Sims facilities as part of its review of Sims’ Large Recycling Facility (LRF) Permit? I read some comments submitted to CDPH that referenced Sims’ metal shredding facilities in Rhode Island and California that paid huge fines for violations of federal and state environmental regulations. I also noticed comments about the recent fire at the Paulina facility, and Sims’ obvious attempt to downplay the scope of the fire, but I didn’t see any comments about a massive fire that occurred at a Sims shredding facility in Chesapeake, Virginia last year. According to news reports, it took hours for firefighters to extinguish the fire and it created smoke that was visible for miles. The attached pictures show the enormous size of the fire and smoke plume. When CDPH holds a meeting to discuss Sims’ LRF permit application, please have someone explain, in detail, the extent of the “compliance history review” that CDPH is conducting for the Sims LRF Permit application and whether the environmental compliance history of other metal shredding facilities owned and operated by Sims is being reviewed by CPDH. The fire at Sims in Chesapeake, VA is yet another example of Sims’ clear inability to operate a large recycling facility in a safe and environmentally responsible manner.</p>	Appendix B

5/9/2023	Where is the City inspector that wrote numerous tickets to Sims for auto fluff blowing off-site from Sims? And why isn't that person or any other inspector not writing tickets for the fluff that is still going off of Sims property on a daily basis. Just look at these pictures of fluff that any inspector doing his or her job would notice if they opened their eyes. City officials must take into account all the environmental violations that keep happening at this company and DENY the permit to Sims!!!	Appendix C
5/4/2023	When does CDPH plan to address the concerns of Pilsen residents about Sims and their Large Recycling Facility (LRF) Permit application? It has been nearly A YEAR AND A HALF since Sims' previous permit expired and since CDPH received an LRF Permit application from Sims. Yet CDPH has still not even scheduled a public meeting. Meanwhile, Sims continues to operate as a large recycling facility without an LRF Permit using a shredder that spews uncontrolled emissions into the neighborhood. Clearly, there is no urgency on the part of CDPH to regulate Sims or to hold them accountable for their ongoing violations, which include continually allowing shredder fluff to blow off their property. While CDPH continues its "review" of Sims' LRF Permit application, and presumably the Cumulative Impact of Sims on the community, CDPH may be interested to know that Sims is planning to construct and operate a large metal shredder, WITH NO EMISSION CONTROLS, at its facility in East Chicago, Indiana, a mere 3 miles from Chicago!!! According to the attached comment by the East Chicago Calumet Coalition Community Advisory Group, Sims' East Chicago facility is in an Environmental Justice area and a mere 730 feet from residential homes. Yet Sims is willing to expose the East Chicago community to uncontrolled emissions from a large metal shredder, just like they continue exposing residents of Pilsen to uncontrolled emissions from their Chicago shredder. This latest attempt by Sims to skirt environmental regulations is one more reason why CDPH should deny Sims' LRF Permit!!!	Appendix D
4/20/2023	A recent review of the Chicago Data Portal revealed that during an inspection of Sims in early March, the CDPH inspector noted "UPON ARRIVAL TO THE AREA THE INSPECTOR CANVASSED STREETS SURROUNDING SIMS AND WAS NOT ABLE TO VISUALLY LOCATE AUTO FLUFF ON VEHICLES OR THE GROUND". PLEASE have someone from CDPH show the attached pictures to ANY and ALL inspectors that may inspect Sims in the future since current CDPH inspectors clearly have NO IDEA what fluff looks like. On another note, if CDPH ever schedules a community meeting to discuss Sims' Large Recycling Facility (LRF) Permit application, please have someone explain why CDPH is no longer issuing Violation Notices to Sims for allowing waste fluff to continue blowing off-site. Please also have someone explain if and how Sims' clear inability to comply with CDPH Rules will be considered when deciding whether to issue an LRF Permit to Sims.	Appendix E
4/17/2023	Why is CDPH's Cumulative Impact Assessment effectively ignoring the Pilsen neighborhood and how can the residents of Pilsen have any confidence that CDPH will actually consider the environmental impact of Sims' Large Recycling Facility, particularly given the fact that neither the Assessment Team, nor any of the Working Groups, include a single representative from the Pilsen Environmental Rights and Reform Organization (PERRO) or the Southwest Environmental Alliance? And why is the Southeast Environmental Task Force the only environmental nonprofit organization represented on the Project Management Team? It is bad enough that CDPH is allowing Sims, with its history of environmental violations and with no pollution controls on its shredder, to continue operating a Large Recycling Facility without a permit. By not allowing a single representative from PERRO or the Southwest Environmental Alliance to participate in the Cumulative Impact Assessment, the message is clear: The City and CDPH care FAR more about residents of the Southeast Side than those in Pilsen, despite studies conducted by CDPH and the Natural Resources Defense Council (NRDC) which show the Pilsen area to be the most environmentally burdened area of the City. CDPH should reexamine its Mission and its Vision to "work with communities and partners to create an equitable, safe, resilient and Healthy Chicago" so that "everyone in Chicago thrives and achieves their optimal health and wellness." Continuing to cave to the loudest voices, such as Southeast Side activists, while simultaneously ignoring other portions of the City, such as Pilsen, is far from equitable. CDPH has essentially created a system of picking winners and losers in which certain portions of the City are more able to achieve optimal health and wellness while other portions of the City are left	n/a

	behind. CDPH should step up and show their commitment to ALL residents of Chicago by denying Sims' Large Recycling Facility Permit!!	
4/12/2023	While I was reviewing CDPH's website under "Chicago's Cumulative Impact Assessment," I noticed a document titled "Community Input Summary – Key Findings" and one particular item caught my attention. Under THEME 4: DECISION-MAKING PROCESS CONCERNS, one of the concerns listed is "Inauthentic community engagement and perception of a matter being a "done deal". " What struck me is how perfectly this statement describes CDPH's review of Sims' Large Recycling Facility (LRF) Permit application. Sims submitted an application for an LRF Permit well over a year ago and CDPH has STILL not even scheduled a public meeting. CDPH has been accepting comments regarding Sims' application since 2021, yet there is no indication that CDPH has considered, or even read, ANY of the hundreds of comments it has received. This behavior by CDPH is the epitome of "inauthentic community engagement". To make matters worse, CPDH continues to tout Sims' supposed plan to address their repeated and ongoing environmental violations and to resolve a lawsuit filed by the Illinois Attorney General by some unknown future date, all while Sims continues to operate under an expired permit with no pollution controls on its shredder. CDPH is clearly relaying a message to the people of Pilsen that Sims will eventually receive an LRF Permit and that the matter is a "done deal".	n/a
3/23/2023	CDPH states on its website for Sims that it "will schedule a community meeting prior to making a decision on the Large Recycling Facility renewal application". As CDPH is well aware, a Large Recycling Facility Permit has not been issued to ANY facility in the City so how can it be a renewal application? If a community meeting is ever held by CDPH to discuss Sims' application, someone from CDPH needs to clarify whether this false statement was just a mistake or whether it is another attempt by CDPH to mislead the public.	n/a
3/23/2023	Why is CDPH downplaying the lawsuit filed against Sims on its website by stating that Sims "entered into an Agreed Order with the Illinois Attorney General to implement air pollution controls at their Pilsen facility"? And why didn't CDPH include a link to the lawsuit, or at least a link to the Press Release, so the people of Pilsen could see it for themselves? The fact is that the "Agreed Order" referred to by CDPH was the result of a lawsuit, which was based on a referral from the Illinois EPA. The Illinois AG's Press Release includes a statement from Illinois EPA Director John Kim which reads "Based upon results from testing called for by the Illinois EPA, this matter was referred to the Attorney General's office to ensure that protections be put into place to address emissions concerns. The location of this facility in an environmental justice community reinforces the need for careful oversight of pollution sources such as this." The Press Release also includes a statement from Illinois AG Kwame Raoul which reads "Sims' actions created a public health risk by exposing the community to uncontrolled emissions from its facility. We have seen the damage these actions can cause in environmental justice communities, and I am committed to holding Sims accountable for endangering public health and will work to ensure they comply with emissions reductions requirements." Because CDPH is allowing Sims to continue operating under its "current permit" with no pollution controls, Sims is continuing to create the public health risk, in an environmental justice community, that was basis of the lawsuit filed against Sims. CDPH should stop trying to hide these facts from the people of Pilsen!	Appendix F
3/22/2023	I was reviewing previous public comments regarding Sims' Large Recycling Facility (LRF) Permit application and I noticed a comment (see attached) submitted to CDPH in November 2021 that states "Drawings should be provided of the shredder and shredder emissions capture hood in plan, elevation, and isometric views..". I also reviewed the Construction Permit application submitted to Illinois EPA in December 2021 and indeed, the Illinois EPA Permit application contains no information whatsoever regarding the layout or design of the system that Sims intends to install to capture emissions from their shredder. However, I did find an Illinois EPA "Responsiveness Summary" document for Sims that states "Shredder emissions will be captured by a hood located over the top of the shredder." Construction of a hood on top of the shredder makes perfect sense since anyone that has seen Sims in operation (see attached) has undoubtedly witnessed the immense amount of emissions emanating from the top of the shredder. Presumably, any such hood would need to be	Appendix G

	<p>extremely large in order to capture all emissions that rise up from Sims' shredder. Has CDPH requested or obtained any information from Sims regarding the layout or design of the hood? In addition, has CDPH requested that Sims' submit a new or amended LRF Permit application to include information regarding the emissions capture and control system and/or address CDPH requirements for Expanding Facilities? CDPH Rules for Large Recycling Facilities define "Expansion" as "an increase in the horizontal or vertical boundary of a Large Recycling Facility or an increase of more than 10% of the permitted capacity of a Facility beyond the limits established in its current permit." CDPH Rules also define "Expanding Facility" as "an Existing Facility that has applied for a permit to allow an Expansion." Construction of a large hood above Sims' shredder clearly meets the definition of an Expansion since it is an increase in the vertical boundary of a Large Recycling Facility. In addition, the December 2021 Illinois EPA Permit application reveals that Sims will be installing a 6-foot diameter exhaust stack 60 feet above grade (see attached), which is significantly higher than any other equipment currently operating at Sims. Installation of a vertical, 60-foot high exhaust stack also clearly meets the CDPH definition of an "Expansion." Has CDPH requested that Sims apply for a permit to allow an expansion as required for an "Expanding Facility"?</p>	
3/14/2023	<p>Does CDPH not have a problem with shredder fluff from Sims blowing off site? Look at the attached pictures of fluff along Ashland Avenue right by the Chicago River. Anybody with half a brain knows that some of this fluff ends up falling in the river.</p>	Appendix H
3/14/2023	<p>The Chicago Fire Department Office of Fire Investigation (OFI) Report into the February 4th fire at Sims states that "OFI 466 responded to the above address (2500 S. Paulina) for a fire in an outdoor pile of scrap metal at Sims Metal Midwest. Upon arrival BC15 observed a fire in a large pile of scrap metal... This fire started deep inside a large pile of scrap metal approx 40' high at a metal recycling plant (Sims)." Based on a review 1) The Chicago Fire Department OFI Report (attached), 2) Sims previous Class IVB Recycling Facility Permit (attached), 3) Sims' application for a Large Recycling Facility (LRF) Permit dated November 2021, and 4) Rules for Large Recycling Facilities established by CDPH on June 5, 2020 it is clear that that Sims violated CDPH rules related to bulk material storage. Specifically, Sims exceeded pile height restrictions by a significant amount, which likely contributed to the recent fire and which certainly made the task of extinguishing the fire more difficult. Yet according to the Narrative Evaluation of a CDPH inspection conducted following the fire (attached), CDPH did not issue a Notice of Violation (NOV) to Sims. Since Sims submitted an application to CDPH for an LRF Permit well over a year ago and since their Class IVB Recycling Facility Permit also expired well over a year ago, it is unclear which conditions and standards apply to Sims' operation. Sims' Class IVB Recycling Facility Permit, which expired on November 15, 2021, states "The Permittee may stockpile bulk recyclable materials that require large machinery (such as a backhoe, front-end loader, crane, or grapple) to move or process. The Permittee shall maintain such inventories no taller than 30 feet in height as shown by a pile height marker." The Operating Standards in CDPH's Rules for Large Recycling Facilities state "the height of any outdoor Storage stockpile within the Facility shall not exceed 20 feet." However, "Staged stockpiles within an authorized Staging Area ("Staged Piles") may be up to 30 feet tall" provided the Operator complies with certain conditions. Sims' application for an LRF Permit references a limitation for storage piles of 30 feet as well, although it isn't clear whether or not Sims is in compliance with the conditions for Staging Areas. In this particular case, it is irrelevant which set of conditions and standards apply to Sims (the conditions in Sims' expired Class IVB Permit or the Operating Standards for Large Recycling Facilities). The fact is that Sims was, and likely still is, in violation of CDPH's bulk material storage requirements. If CDPH ever holds a community meeting regarding Sims' application for a Large Recycling Facility Permit, please tell the people of Pilsen why CDPH did not issue an NOV to Sims, at the time of the inspection, or later after the Chicago Fire Department documented the excessive height of the storage pile that caught fire. Despite the fact that CDPH failed to issue an NOV to Sims, no matter how obvious the violation, CDPH should nevertheless consider this infraction as part of the compliance review associated with the Sims' LRF Permit application. This latest incident at Sims is evidence that the facility is not able to comply or stay in compliance with terms and conditions of a permit, the Code, or the Rules as necessary to fully protect the residents of Pilsen.</p>	Appendix I



APPENDIX A

Google Maps Sims Metal - Bronx, New York



Bronx River

Bronx River

Sims Metal -  
Bronx, New York

Hugo Sims  
Recycling Bronx

Seneca Ave

Seneca Ave

Seneca Ave

Seneca Ave

Seneca Ave

Edgew

Seneca Ave

Edgewater Rd

Edgewater Rd

Edgewater Rd

Tech Corporation  
Auto parts store

1360

D&M Towing  
Corporation  
Temporarily closed

855

Dad Trucking

A La Mode  
Shoppe Factory


Ip Tridding

1355

Met Metal

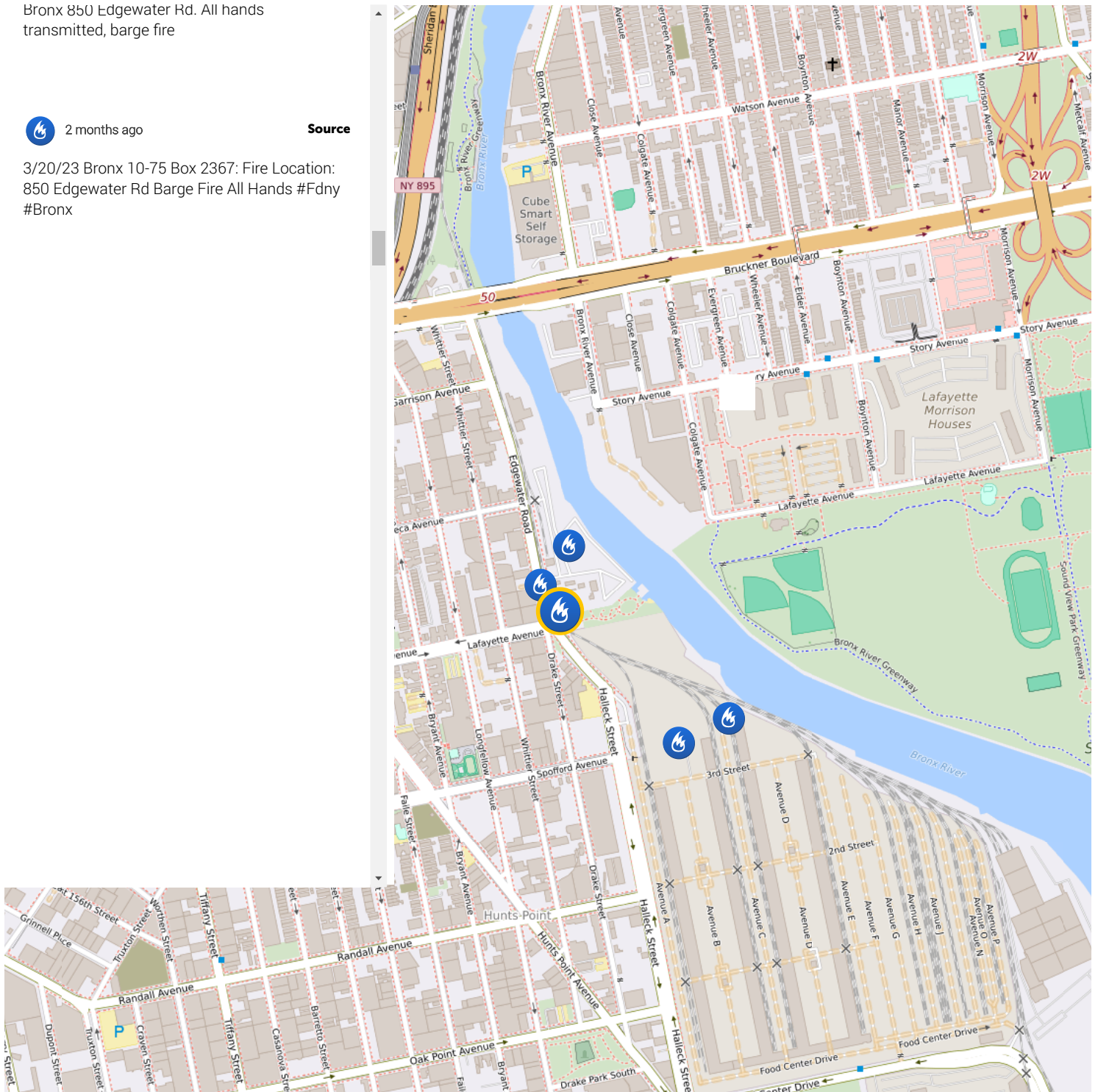


Bronx 850 Edgewater Rd. All hands transmitted, barge fire

 2 months ago

Source

3/20/23 Bronx 10-75 Box 2367: Fire Location:  
850 Edgewater Rd Barge Fire All Hands #Fdry  
#Bronx





**NYC Fire Wire is on Facebook.** To connect with NYC Fire Wire, join Facebook today.



or



**NYC Fire Wire**  
Bronx \*75-2367\* 850 Edgewater Rd off Seneca Ave



**APPENDIX B**







May 9, 2023





May 9, 2023







May 3, 2023

R19439-10

Mr. Daniel W. Pell  
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Indianapolis, Indiana 46204-2251

*Submitted via e-mail to:*  
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**Public Comments on IDEM Draft FESOP for  
Metal Management Indiana Inc DBA Sims Metal  
East Chicago (Lake County), Indiana  
FESOP No.: F089-46196-00608**

Dear Mr. Pell,

The following comments are provided in response to the Notice of 30-Day Period for Public Comment on the Preliminary Findings Regarding a New Source Review and Federally Enforceable State Operating Permit (FESOP) F089-46196-00608 for Metal Management Indiana d/b/a Sims Metal located in Lake County at 425 West 152nd Street, East Chicago, Indiana.

This facility is located in North Township which is designated as a moderate ozone nonattainment area for the 2015 8-hour ozone standard. The facility is also located in an area that is designated as an Environmental Justice Area.

Sims Metal currently operates an existing 38.6 tph hammermill shredder using no emission controls and is proposing to add a new 200 tph hammermill shredder, also with no emission controls. In their January 2023 FESOP application, Sims Metal stated that it intended to replace the 38.6 tph shredder with the proposed 200-tph shredder – but in the draft FESOP, IDEM is permitting both shredders to operate simultaneously. There is no requirement to remove or shut down the smaller shredder even though, taken together the combined potential VOC emissions is greater than 25 tpy, which would require installation of Best Available Control Technology (BACT) for VOC emissions pursuant to 326 IAC 8.1.6 or a substantial reduction in annual throughput to lower potential VOC emissions below the BACT threshold.

The VOC emission factor proposed by Sims Metal was selected to avoid BACT requirements, however, this emission factor is based on a flawed emission test in which United States Environmental Protection Agency (EPA) Region 1 observers documented visible emissions with an opacity ranging 20 to 50% escaping the temporary shredder enclosure throughout the entire test. The EPA approved test protocol required installation of a partial temporary enclosure with the stated purpose of capturing shredder emissions for testing; however, the observed opacity demonstrated clearly that the enclosure failed to



adequately capture shredder emissions and as a result, a significant portion of shredder emissions were not measured. It is difficult to understand how an emission test that so clearly failed to measure a significant portion of shredder emissions can be characterized as a successful test and the resulting emission factor used to avoid VOC controls at a facility located in an ozone nonattainment area and in an Environmental Justice Area.

IDEM should require use of appropriate VOC emission factors from testing that maximized emissions capture. Based upon selection of an appropriate VOC emission factor, IDEM should limit the permitted annual throughput of the proposed 200 tph shredder to reduce potential VOC emissions to less than 25 tpy or require Sims Metal to submit an application for a complete control train to control emissions – which controls are discussed in the EPA Enforcement Alert and which EPA and IEPA are requiring Sims to install on its shredders on South Paulina in Chicago and in Johnston, Rhode Island. Based on our analysis of available VOC emission factors discussed herein, to avoid BACT, Sims' throughput should be limited to no more than 140,000 tpy, which is half of the throughput Sims is requesting and IDEM is permitting.

The comments below focus primarily on the shredder VOC emission factors identified by the applicant. The shredder VOC emission factor applied to the new 200 tph shredder was based on a flawed shredder emission test that failed to meet the capture efficiency objectives. The resulting emission factor does not represent total shredder VOC emissions because a significant portion of the shredder emissions escaped the temporary enclosure and were not measured. If shredder VOC emissions are calculated using an emission factor from one of several more recent shredder VOC emission tests that maximized emissions capture efficiency, the potential to emit for the existing 38.6 tph shredder and the new 200 tph shredder would both exceed 25 tpy, thereby triggering BACT requirements pursuant to 326 IAC 8.1.6.

In addition to VOCs, the shredder emissions also include particulate matter (PM), particulate matter less than 10 microns in diameter (PM<sub>10</sub>), particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>) and organic and inorganic hazardous air pollutants (HAPs). Under the draft FESOP, Sims Metal would not be required to capture or control any emissions.

**In light of the issues identified herein, RKA requests IDEM hold a public hearing on this draft FESOP.**

### **EPA Enforcement Alert for Emissions from Metal Shredders**

Excess VOC emissions from metal shredders have been the subject of recent EPA enforcement actions. EPA's review of available metal shredder test reports from across the country has found that in many cases, reported emissions are significantly higher than previously thought. EPA has noted that review of

recent test data revealed typical shredder VOC emission rates between 86 and 284 lb/hr<sup>1</sup>. Further, EPA acknowledges that test results are greatly determined by the capture efficiency of a shredder enclosure and that recent emission tests with a focus on maximizing capture efficiency have shown that actual VOC emissions from metal shredders are likely even higher. This was documented by EPA in a recent Enforcement Alert published in July 2021 (see Attachment A). One of the facilities highlighted in the EPA Enforcement Alert was Sims Metal Management New England (SMM) located in Johnston, Rhode Island. SMM is an example of an enforcement matter brought by EPA and the State of Rhode Island involving greater than expected VOC emissions from a metal shredder and which EPA and the State imposed substantial fines and required controls. SMM entered into a settlement agreement with EPA that required the company to pay \$250,000 in federal penalties, pay \$2 million in state penalties and install a control train consisting of an shredder enclosure, fans, pollution controls to reduce particulate matter, a regenerative thermal oxidizer to reduce VOCs and an acid gas scrubber. It is ironic that the applicant is using an emission factor from a facility that was found to be in substantial non-compliance, despite their reported test results.

In the Enforcement Alert, EPA recommends that operators of metal shredders estimate hourly and annual VOC emissions using appropriate available test data from similar facilities. If estimated total annual or hourly VOC emissions are below, but near applicable Reasonably Available Control Technology (RACT) thresholds, consult with EPA or the state environmental agency and consider conducting a performance test to measure actual VOC emissions and to develop a facility-specific VOC emission factor. If estimated emissions are over the RACT threshold, the installation of capture and add-on pollution controls may be required.

RACT requirements are developed by state agencies specifically to require emissions reduction from sources located within a nonattainment area. Sims Metal is located in an ozone nonattainment area and is subject to IDEM RACT requirements at 326 IAC 8.1.6 for any emission unit with potential VOC emission exceeding 25 tpy.

The proposed VOC emission factor for the 200 tph shredder is 30% lower than the emission factor proposed for the smaller 38.6 tph shredder that IDEM accepted in a previous Minor Source Operating Permit. This lower emission factor was, as stated in the application, selected to avoid BACT and limit potential VOC emissions to 24.5 tpy, which is, conveniently just below the BACT threshold of 25 tpy.

IDEM should require use of appropriate VOC emission factors from testing that maximized emissions capture. Based upon selection of an appropriate VOC emission factor, IDEM should limit the permitted annual throughput of the proposed 200 tph shredder to reduce potential VOC emissions to less than 25 tpy or require Sims Metal to submit an application for a complete control train to control emissions – which

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<sup>1</sup> EPA Enforcement Alert – Violations at Metal Recycling Facilities Cause Excess Emissions in Nearby Communities; July 2021; Publication no. EPA 310-F-21-003.

controls are discussed in the EPA Enforcement Alert and which EPA and IEPA are requiring Sims to install on its shredders on South Paulina in Chicago and in Johnston, Rhode Island. Based on our analysis of available VOC emission factors discussed herein, to avoid BACT, Sims' throughput should be limited to no more than 140,000 tpy, which is half of the throughput Sims is requesting and IDEM is permitting.

## Shredder Emissions Enclosures

As highlighted in the recent EPA metal shredder Enforcement Alert, measured shredder emission rates are greatly influenced by the efficiency of an emissions enclosure system. The vast majority of commercial metal shredders are hammermill shredders. Due to the design and operation of hammermill shredders, equipping a shredder with an effective emissions capture system is both challenging and costly.

Hammermill metal shredders are typically designed with large raw material inlets on top of, or near the top of, the shredder to take advantage of gravity to feed metal into the shredder. Hammermill shredder design includes water injection to control the heat generated in the shredder. The water flashes

to steam and displaces ambient air from the void space inside the shredder to minimize the potential for a deflagration. The rapid expansion of water to steam results in a clearly visible plume of steam exiting the top of the shredder as illustrated in the photograph presented in Figure 1. This exhaust stream includes particulate and VOC emissions.

Capturing the exhaust stream from a hammermill shredder, like the shredder shown in Figure 1, requires installation of a capture hood located above the top of the shredder or an enclosure constructed around the shredder. The hood, or enclosure, must be designed to withstand the heat, pressure, vibration, and potential impacts from pieces of metal that may be ejected from the shredder. In addition, the air flow drawn through the hood or from an enclosure must be high enough to create a constant negative pressure to ensure capture of shredder emissions. These features contribute to the high cost of construction and operation of shredder emission control systems.

**Figure 1 –Uncontrolled Exhausts from Shredder Raw Material Inlet SIMS South Paulina**



Shredded metal exits a hammermill shredder on an undermill conveyor located at the bottom of the shredder. At its metal shredding facilities located in Chicago, Illinois (224 tph<sup>2</sup>), and Johnston, Rhode Island (350 tph), Sims Metal had attempted to construct a Temporary Enclosure (TE) around the undermill conveyor equipped with an exhaust fan and discharge stack. The intended purpose of these temporary enclosures was to draw the emissions downward through the hammermill shredder and discharge them through a stack configured for emission testing. However, to be effective at capturing VOC emissions, the steam plume illustrated in Figure 1 should be eliminated such that there is a constant inward flow of air through the raw material inlet at the top of the shredder.

EPA observations of emission testing using these undermill enclosures at Sims' Chicago, Illinois and Johnston, Rhode Island facilities clearly demonstrated that the undermill enclosures failed to adequately capture shredder emissions as evidenced by significant amounts of visible emissions observed exiting the top of the shredder. The constant presence of fugitive emissions escaping the shredder during these tests indicates that a significant portion of shredder emissions were not captured and therefore not measured at these facilities.

At its Chicago, Illinois, facility, Sims Metal submitted a permit application for its 344,000 tpy hammermill shredder using the Johnston, Rhode Island, emission test results to document anticipated emissions. Based in part on the EPA observations during the Rhode Island test, the Illinois Environmental Protection Agency (IEPA) specifically rejected Rhode Island emission test data submitted in support of permitting for the Chicago facility. EPA has since required Sims to install effective emissions capture and control systems at each of these facilities.

Attachment B presents RKA's technical comments on the emission tests performed at the Sims Chicago, Illinois and Johnston, Rhode Island facilities. These comments were previously submitted to IDEM during the public comment period for a previous permit application for the Sims East Chicago, Indiana facility. These comments are supported by EPA's July 2021 Enforcement Alert and clearly demonstrate that the VOC emission factors from these two emission tests are not reliable due to the observed uncaptured emissions emitted from the shredder. Use of emission factors from these tests will result in significantly underestimating actual VOC emissions and corresponding community impacts from the proposed Sims Metal East Chicago, Indiana facility, allowing this facility to avoid applicability of BACT requirements and the subsequent installation of costly VOC emission controls.

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<sup>2</sup> Federally Enforceable State Operation Permit Application – Metal Management Midwest, Inc – Paulina, Facility, January 2019.

## **Metal Management Indiana's Proposed FESOP Relies on Flawed Emission Factors**

### **VOC Emission Factor for the Proposed 200 tph Metal Shredder**

Review of the permit application and technical support document included with the draft FESOP, shows that the applicant is again using a flawed shredder VOC emission factor in order to avoid a BACT analysis that would severely limit proposed annual throughput or require installation of costly VOC emission controls. The shredder VOC emission factor proposed by the applicant for the 200 tph metal shredder is from emission testing performed by Sims Metal New England Corporation (SMMNEC) at a 350 tph metal shredder located in Johnston, Rhode Island, in September 2017.

The SMMNEC emission test was observed by two experienced representatives of the United States Environmental Protection Agency (EPA) Region 2. The site inspection reports prepared by these two EPA representatives documented that bluish gray smoke with an estimated opacity of approximately 40% for many minutes, as much as 50% at times, but approximately 20% continuously, was escaping from the shredder's Temporary Enclosure (TE). The EPA inspection reports also identified deficiencies in the methods and procedures used to measure differential pressure in the TE. A TE is a temporary structure constructed onsite for the purpose of capturing emissions and routing them to one or more exhaust points where they can be accurately measured. **Without a properly designed and functioning TE, it is not possible to measure total emissions from a metal shredder.** EPA's observations are not consistent with conclusions by SMMNEC, that the TE provided 100% capture of shredder VOC emissions. In fact, EPA's direct observations indicate that the actual VOC emissions were likely substantially higher than what was reported.

In addition to the above, Condition D.1.6 of the draft FESOP allows Sims Metal to use stack test results from the SMMNEC plant in Johnston, Rhode Island, in lieu of emission testing of the proposed 200 tph metal shredder.

Based on the above, allowing the proposed facility to rely on flawed VOC emission factors from the Johnston, Rhode Island, emissions test will result in significantly underestimating actual VOC emissions from the proposed facility, as well as the corresponding impacts to the surrounding community, which is designated as an Environmental Justice Area.

Allowing the use of the SMMNEC VOC emission factor is contrary to the Enforcement Alert. The SMMNEC VOC emission factor is significantly lower than emission factors from similar facilities with properly functioning emissions capture systems and directly represents the type of flawed emission test that EPA was alerting states and industry to in the Enforcement Alert.



### **VOC Emission Factor for the Proposed 38.6 tph Metal Shredder**

Review of the permit application and technical support document included with the draft FESOP, shows that the applicant is relying on a VOC emission factor from a 2010 emission test at a 200 tph hammermill shredder at an OmniSource facility in Jackson, Michigan, to estimate VOC emissions from the existing 38.6 tph hammermill shredder.

The OmniSource emission test was performed as part of an internal audit to validate previous VOC emission estimates and was not performed as a compliance demonstration with input from IDEM or EPA. OmniSource used carbon monoxide (CO) gas injection to ‘characterize VOC capture efficiency’ and reported an estimated capture efficiency of 96.4% based on the measured mass of CO injected into the shredder body and measured at the shredder outlet. The results from this emission test have been used as the basis for VOC emission limits at many facilities permitted in Indiana and other states, primarily due to the lack of other more creditable emissions test data.

However, since 2010, EPA has reviewed available test data from the OmniSource, Jackson, Michigan facility and other similar facilities and have reported that the OmniSource VOC emission factors are considerably lower than more recent emission testing data from other hammermill shredders equipped with more substantial emission capture systems with better capture efficiency demonstrations.

Sulfur Hexafluoride (SF<sub>6</sub>) is the preferred tracer gas for use in capture efficiency testing because it is inert even in extreme conditions. Although the use of CO is not part of an EPA approved capture efficiency test method, EPA capture efficiency guidance states tracer gases other than SF<sub>6</sub> may be used with prior approval of EPA. However, review of the OmniSource test report does not indicate that the test protocol was reviewed or approved by EPA.

It has been RKA’s experience in other similar matters related to hammermill shredder VOC emission factors that EPA does not consider the 2010 OmniSource emission factor to be representative of actual VOC emissions.

Based on the above, the use of the 2010 OmniSource VOC emission factor likely underestimates actual VOC emissions for the existing 38.6 tph hammermill shredder and the use of this factor could result in underestimating VOC emissions and corresponding impacts to the surrounding Environmental Justice Area and possibly avoiding otherwise applicable BACT requirements for control of VOC emissions.

### **Particulate Emission Factor for the 200 tph Hammermill Shredder**

Review of the permit application and technical support document included with the draft FESOP shows that the applicant is relying on a Particulate Matter (PM) emission factor from testing performed by Sims Metal Midwest at a 200 tph shredder located in Chicago, Illinois in September 2019.



As described above, this test was performed at the outlet of a temporary enclosure constructed around the undermill conveyor at the discharge of the hammermill shredder. This test was observed by an experienced representative of EPA Region 5. In a site inspection report, the Region 5 representative states that visible emissions were seen escaping from the top of the shredder and from the shredder enclosure during testing and that the undermill conveyor enclosure ‘**was not effective at capturing VOM emission generated by the shredder.**’

Based in part on the EPA observations documented in the site inspection report, the Illinois Environmental Protection Agency (IEPA) specifically rejected these test results for use in justifying estimated emissions from the hammermill shredder.

The applicant used an adjusted ISRI emission factor to estimate PM emissions from the 38.6 tph shredder. If IDEM finds that the emission test from Sims Metal’s Chicago facility is flawed because a significant portion of the shredder emissions escaped the temporary enclosure without being sampled, then the applicant should also apply the adjusted ISRI PM emission factor to the 200 tph shredder, which would increase the potential facility wide PM/PM10 emissions from process emission sources to 97.14 tpy.

### Hammermill Shredder VOC Emission Factors From Shredders with Permanent Total Enclosures

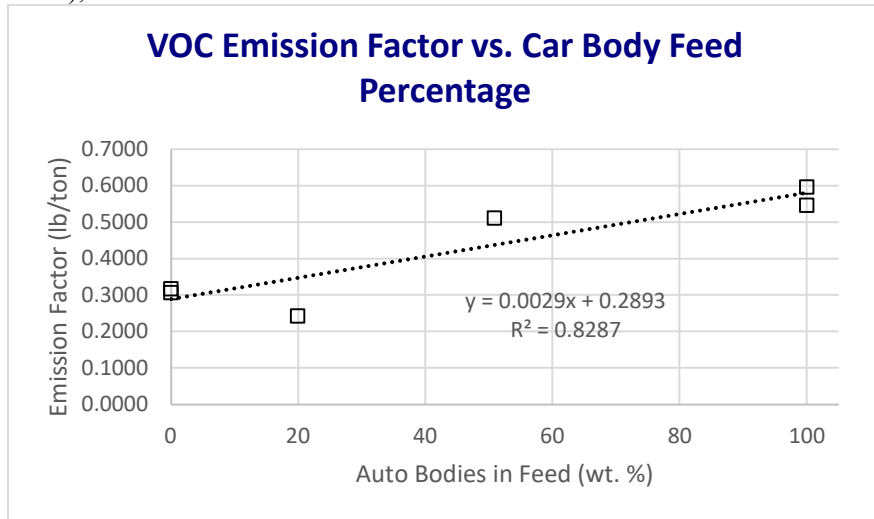
EPA has reviewed recent hammermill shredder VOC emission test results at shredders equipped with permanent total enclosure systems that ensure maximization of capture of VOC emissions, thereby providing accurate measurement of actual VOC emissions.

Based on discussions with EPA Region 2 on a similar matter in 2021, EPA identified the following VOC emission factors from what they considered to be valid VOC compliance testing events from facilities at which the shredder is completely enclosed by an emission capture system.

#### Summary of VOC Emission Factors for Shredders Equipped with an Emissions Capture System

Company	City	State	Test Date	Shredder Feed			Shredder Water Injection (gpm)	Pollutant	Measured by USEPA Method 25A as	Measured VOC Emission Rates	
				Type	% ELVs	Feed Rate tph				lb/hr	lb/ton
Schnitzer Steel	Oakland	CA	10-29/30-2018	Light Iron	0%	248	28	TNMNEOC	CH <sub>4</sub>	86	0.3468
				Car Bodies	100%	281	29	TNMNEOC	CH <sub>4</sub>	183	0.6512
Schnitzer Steel	Oakland	CA	1-22/23-2019	Light Iron	0%	330	32	TNMNEOC	CH <sub>4</sub>	110	0.3333
				Car Bodies	100%	365	31	TNMNEOC	CH <sub>4</sub>	217	0.5945
General Iron	Chicago	IL	5/25/2018	Mixed	19.9%	390.19		TNMNEOC	C <sub>3</sub> H <sub>8</sub>	94.87	0.2431
General Iron	Chicago	IL	11-2019	Mixed	50.9%	444		TNMNEOC	C <sub>3</sub> H <sub>8</sub>	227.3	0.5119

The following figure displays the above data graphically based on the weight % of auto bodies or End of Life Vehicles (ELVs), in the shredder feed.



The following table identifies potential VOC emissions from the existing 38.6 tph shredder and the proposed 200 tph shredder based upon application of the above VOC emission factors, the proposed annual shredder material processing rates, and an assumed limit of 20%, 50%, and 100% by weight auto bodies in the shredder feed.

**Summary of Potential Shredder VOC Emissions at 20%, 50%, and 100% by Weight Auto Bodies in Shredder Feed**

Parameter	Units	Existing 38.6 tph Hammermill Shredder	Proposed 200 tph Hammermill Shredder
Hourly Shredder Throughput (Condition D.1.1)	tpy	38.60	200.00
Annual Shredder Throughput (Condition D.1.1)	tpy	160,000	280,000
<b>Weight % Auto Bodies</b>	<b>wt. %</b>	<b>20</b>	<b>20</b>
VOC Emission Factor	lb/ton	0.3476	0.3476
Potential VOC Emissions	lb/hr	13.42	69.52
	tpy	27.81	48.66
Trigger BACT Requirements (326 IAC 8.1.6)	Yes/No	Yes	Yes
<b>Weight % Auto Bodies</b>	<b>wt. %</b>	<b>50</b>	<b>50</b>
VOC Emission Factor	lb/ton	0.4351	0.4351
Potential VOC Emissions	lb/hr	16.79	87.02
	tpy	34.81	60.91
Trigger BACT Requirements (326 IAC 8.1.6)	Yes/No	Yes	Yes
<b>Weight % Auto Bodies</b>	<b>wt. %</b>	<b>100</b>	<b>100</b>
VOC Emission Factor	lb/ton	0.5809	0.5809
Potential VOC Emissions	lb/hr	22.42	116.18
	tpy	46.47	81.33
Trigger BACT Requirements (326 IAC 8.1.6)	Yes/No	Yes	Yes





Application of accurate VOC emission factors from recent hammermill shredder VOC emission tests from facilities utilizing permanent total enclosures show that the potential VOC emissions from the existing 38.6 tph shredder and the proposed 200 tph shredder both exceed 25 tpy and trigger the BACT requirements in 326 IAC 8.1.6 even when processing material containing as low as 20% auto bodies. Based on the above, Sims Metal would need to significantly reduce annual facility throughputs to lower potential VOC emissions to less than 25 tpy or install VOC capture and control systems. The location of the proposed 200-tph shredder in a designated Environmental Justice Area requires a more thorough evaluation of the proposed emission estimates for this project.

**Comments on the Draft FESOP**

Condition	Comment
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D.1.1(a)(2) VOC emissions from the 38.6 tph Existing Scrap Vehicle/Metal Shredder, shall not exceed 0.25 lbs/ton of material throughput.

The proposed VOC emission factor is from a 2010 shredder VOC emission test at OmniSource in Jackson, Michigan. This test was not a compliance demonstration test performed under an Agency approved protocol. In addition, the use of CO as a tracer gas was not specifically reviewed or approved by the EPA. Therefore, this emission factor should be considered to be invalid and IDEM should review hammermill shredder VOC emission factors available from EPA from more recent testing with a focus on maximizing capture efficiency and utilize a more appropriate factor that represents total actual shredder VOC emissions.

IDEM should require use of appropriate VOC emission factors from testing that maximized emissions capture. Based upon selection of an appropriate VOC emission factor, IDEM should limit the permitted annual throughput of the 38.6 tph shredder to reduce potential VOC emissions to less than 25 tpy or require Sims Metal to submit an application for a complete control train to control emissions – which controls are discussed in the EPA Enforcement Alert and which EPA and IEPA are requiring Sims to install on its shredders on South Paulina in Chicago and in Johnston, Rhode Island. Based on our analysis of available VOC emission factors discussed herein, to avoid BACT, Sims’ throughput should be limited to no more than 115,000 tpy, which approximately 28% lower than the throughput Sims is requesting and IDEM is permitting.

- D.1.1(a)(3) The Permittee shall drain and remove, to the extent practicable, VOC and VHAP containing fluids from vehicles, appliances, industrial machinery, and other metal scrap received by the Permittee prior to shredding; or the Permittee shall document that inspections have been performed to confirm the non-existence of VOC and VHAP containing fluids. Fluids shall include, but are not limited to, gasoline, motor oil, antifreeze, transmission oil, and hydraulic fluid.

As illustrated by shredder VOC emission factors presented above, the weight percent of auto bodies in shredder feed has a significant impact on shredder VOC emissions. This should clearly limit the maximum weight % of auto bodies in the shredder feed material.

The quality of depolluting auto bodies will have an outsized effect on shredder VOC emissions. This permit condition should identify the minimum requirements for depolluting auto bodies and the procedures or criteria that will be used to inspect auto bodies, whether depolluted by the facility or by scrap suppliers, to determine that the minimum standards or criteria have been met. Regardless of the depolluting activities, there will still be VOC emissions from shredded ELVs which exceed VOC emissions from the shredding of other scrap metal material.

- D.1.1(b)(2) VOC emissions from the 200 tph New Scrap Vehicle/Metal Shredder, shall not exceed 0.175 lbs/ton of material throughput.

As described above, the proposed VOC emission factor is based on a flawed VOC emission test that did not provide adequate capture efficiency, therefore, the proposed emission factor should not be accepted by IDEM. IDEM should review hammermill shredder VOC emission factors available from EPA from more recent testing with a focus on maximizing capture efficiency and utilize a more appropriate factor that represents total actual shredder VOC emissions.

- D.1.1(b)(3) The Permittee shall drain and remove, to the extent practicable, VOC and VHAP containing fluids from vehicles, appliances, industrial machinery, and other metal scrap received by the Permittee prior to shredding; or the Permittee shall document that inspections have been performed to confirm the non-existence of VOC and VHAP containing fluids. Fluids shall include, but are not limited to, gasoline, motor oil, antifreeze, transmission oil, and hydraulic fluid.

As illustrated by shredder VOC emission factors presented above, the weight percent of auto bodies in shredder feed has a significant impact on shredder VOC emissions. This should clearly limit the maximum weight % of auto bodies in the shredder feed material.

The quality of depolluting auto bodies will have an outsized effect on shredder VOC emissions. This permit condition should identify the minimum requirements for depolluting auto bodies and the procedures or criteria that will be used to inspect auto bodies, whether depolluted by the facility or by scrap suppliers, to determine that the minimum standards or criteria have been met. Regardless of the depolluting activities, there will still be VOC emissions from shredded ELVs which exceed VOC emissions from the shredding of other scrap metal material.

#### D.1.6 Testing Requirements

In order to demonstrate compliance with 326 IAC 2-8 (Federally Enforceable State Operating Permit (FESOP)), not later than 180 days after the startup of the 200 tph New Scrap Vehicle/Metal Shredder, the Permittee shall perform VOC testing (before controls) of the 200 tph New Scrap Vehicle/Metal Shredder, to verify the VOC emission factor, utilizing methods approved by the commissioner. Testing shall be conducted in accordance with the provisions of 326 IAC 3-6 (Source Sampling Procedures). Section C - Performance Testing contains the Permittee's obligation with regard to the performance testing required by this condition.

Note: Sims Metal may use stack test results from the Sims Metal New England Corporation Plant, (5-17 Green Earth Way, Johnston, Rhode Island; test date: September 15, 18, and 20, 2017), in lieu of testing the 200 tph New Scrap Vehicle/Metal Shredder at the East Chicago location. If the Scrap Vehicle/Metal Shredder at this Sims Metal Plant in East Chicago ever changes the type of material processed through this shredder, testing of this shredder may be required.

IDEM should require use of appropriate VOC emission factors from testing that maximized emissions capture. Based upon selection of an appropriate VOC emission factor, IDEM should limit the permitted annual throughput of the proposed 200 tph shredder to reduce potential VOC emissions to less than 25 tpy or require Sims Metal to submit an application for a complete control train to control emissions – which controls are discussed in the EPA Enforcement Alert and which EPA and IEPA are requiring Sims to install on its shredders on South Paulina in Chicago and in Johnston, Rhode Island.

- D.1.7(a)(2) Records that VOC and VHAP containing fluids have been drained and removed (to the extent practicable) from vehicles, appliances, industrial machinery, and other scrap metal received by the Permittee prior to shredding; and

In the absence of VOC capture and control systems, the quality of depolluting auto bodies will have an outsized effect on shredder VOC emissions and corresponding community impacts. This permit condition should identify the specific records required to demonstrate that specific requirements for depolluting auto bodies have been met, such as confirmation that that, at a minimum, all fluids have been removed from engines, transmissions, gear boxes, gas tanks and other fluid reservoirs.

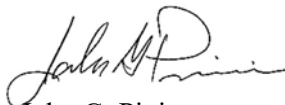
- D.1.7(a)(3) If the Permittee did not drain and remove VOC and VHAP containing fluids onsite, records of the inspections performed to confirm the non-existence of VOC and VHAP containing fluids in vehicles, appliances, industrial machinery, and other metal scrap received by the Permittee prior to shredding.

In the absence of VOC capture and control systems, the quality of depolluting auto bodies will have an outsized effect on shredder VOC emissions and corresponding community impacts. This permit condition should identify the specific records required to demonstrate that suppliers have met the specific requirements for depolluting auto bodies, such as removal of all fluids from engines, transmissions, gear boxes, gas tanks and other fluid reservoirs. Regardless of the depolluting activities, there will still be VOC emissions from shredded ELVs which exceed VOC emissions from the shredding of other scrap metal material.

I look forward to your response to the comments identified herein.

If you have any questions, please don't hesitate to call me at 630-393-9000 or e-mail me at [jpinion@rka-inc.com](mailto:jpinion@rka-inc.com).

Yours very truly,  
**RK & Associates**



John G. Pinion  
Principal Engineer

cc: John Mooney – USEPA Region 5 – Chicago, Illinois – via e-mail  
Genevieve Damico – USEPA Region 5 – Chicago, Illinois – via e-mail



**Public Comments on IDEM Draft FESOP for  
Metal Management Indiana Inc DBA Sims Metal  
East Chicago (Lake County), Indiana  
FESOP No.: F089-46196-00608**

**ATTACHMENT A**

**USEPA Enforcement Alert**

**Violations at Metal Recycling Facilities Cause Excess Emissions  
in Nearby Communities  
July 2021**



# Enforcement Alert

Publication no. EPA 310-F-21-003

July 2021

## Violations at Metal Recycling Facilities Cause Excess Emissions in Nearby Communities

### Purpose

The U.S. Environmental Protection Agency (EPA) is publishing this enforcement alert (Alert) because EPA and state investigations have identified Clean Air Act violations at metal recycling facilities that operate auto and scrap metal shredders, causing excess emissions of air pollution. Over 250 metal recycling facilities are currently operating with a shredder in the United States. These facilities are often located in densely populated areas - noncompliant shredders can have an impact on overburdened communities. This Alert is intended to inform metal recycling facility owners and operators about the Clean Air Act requirements that might apply at their facilities and the air pollution control systems that are in use for shredders at similar facilities. Specifically, shredder operators should be aware of the amount of volatile organic compounds (VOCs) and other emissions from their facilities and should contact their local regulatory or permitting authority for further guidance. Enforcement actions have assessed substantial penalties and have required the installation of emission control equipment.

**Schnitzer Steel (California)** owns and operates a facility in Oakland, CA. On February 3, 2021, the California AG announced a settlement with Schnitzer. The settlement requires Schnitzer to pay \$4.1 million in penalties, implement supplemental environmental projects, and make significant changes to its operations and practices. Schnitzer will install two regenerative thermal oxidizers, a temporary CEMs, and an acid control system by December 2022.

### Non-Compliance Concerns

EPA and state agencies have found violations related to excess VOC emissions at several facilities. Over the past 15 years, more than 25 emissions tests measuring VOCs have been conducted at scrap metal shredders. The quality of the emissions data for these tests varies. Despite this, the historic test data shows that VOC emissions from shredding operations are at levels that can trigger regulatory applicability and the need for emission controls. The test data reveals that typical shredding operations emit VOCs at rates between 20 and 200 lbs of VOCs per hour. Test results are greatly determined by the capture efficiency of the test equipment. Recent emission tests with a focus on maximizing capture efficiency have shown that emission rates from shredders are likely higher than these rates.<sup>1</sup>

VOC emissions from scrap metal shredding facilities are regulated by the Clean Air Act because VOC emissions can contribute to the formation of ground level ozone and contribute to violations of the National Ambient Air Quality Standards (NAAQS) for ozone. Rates of uncontrolled VOC emissions correlate to the size of the shredder and the type of material shredded. Emission rates are generally reduced if the shredder has an enclosure and existing controls such as a cyclone or scrubber. Emission rates are also generally reduced where the facility removes contaminants before shredding (known as “depolluting”).

Permit thresholds for VOC emissions vary depending on whether the shredder is in an area that meets the NAAQS for ozone or is in an ozone transport region. Major sources are subject to permitting requirements and facilities with VOC

<sup>1</sup> Testing at Schnitzer Steel in Oakland California in four separate tests in 2018 and 2019 identified VOC emissions rates of 86, 183, 151, and 284 lb/hr.

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emissions above certain thresholds are required to undergo a New Source Review (NSR) or Prevention of Significant Deterioration (PSD) review for new and modified sources. Depending on the location, existing facilities may be subject to Reasonably Available Control Technology (RACT) regulations at different emission thresholds. In addition, some states require facilities to obtain a permit or install controls at VOC emission thresholds lower than those for NSR, PSD, or RACT. Failure to comply with any of these requirements is a violation of the Clean Air Act which could lead to enforcement actions. In such actions, facilities may be required to install add-on controls, pay civil penalties, and take other measures.

Metal recycling facilities with shredders collect automobiles, large appliances, and other items containing recyclable metal. These items come from municipalities, manufacturers, small businesses, and the public. Facilities process the scrap materials by sorting and stockpiling incoming recyclable materials. Shred-able materials are processed by loading and conveying materials into a hammermill shredder that breaks apart materials into a size suitable for further processing. The shredded material is then conveyed through various separating mechanisms—generally magnetic and eddy current—to separate out ferrous metal, non-ferrous metal, and non-metal materials. Recovered scrap metals are sold to end users, such as manufacturers, mills, foundries, secondary smelters, and metal brokers.

**Sims Metal Management New England Corporation (SMM)** owns and operates a scrap metal shredding operation that uses a 7,000 hp shredder in Johnston, RI. EPA and Rhode Island found that SMM constructed a new major source of VOC emissions without obtaining a permit and without installing required emission controls. In September 2020, SMM entered into a settlement that requires the company to pay \$250,000 in federal penalties and \$2 million in state penalties. In addition, SMM will install a control train consisting of an enclosure, fans, pollution controls to reduce particulate matter, a regenerative thermal oxidizer to reduce VOCs, and an acid gas scrubber.

Significant amounts of non-metal materials are contained in the shredded materials, which can vaporize and become organic air emissions. These materials include plastics, paints, caulks, sealants, rubber, switches, fluids, and fluid residues. The process of grinding and shredding scrap metal generates heat, resulting in residual fluids and fuels becoming gases. The violent nature of the process creates the potential for particulate matter emissions of various sizes. Thus, the process generates emissions of VOCs, particulate matter, and hazardous air pollutants including lead, zinc, cadmium, mercury, and organic pollutants.

### **Air Pollution Control Strategies**

Air pollution controls have been installed on several metal shredding operations across the country. Generally, an effective emission control train is necessary to comply with applicable Clean Air Act regulations. Emissions must first be captured before they can be controlled. Several facilities have constructed permanent total enclosures around the shredder and used large fans to create a negative pressure environment. Given the need for several large openings (*e.g.*, to allow scrap metal to be fed into the conveyor and shredded material to flow out), pick-up fans and overhead hoods are often required to maintain negative pressure within the enclosure and to ensure that emissions do not escape from the openings.

With an effective enclosure and duct work in place, emissions can then be routed to a control system. Because metal particles are present in the exhaust, the first phase in the control train captures large and smaller particles (*e.g.*, using a cyclone, venturi scrubber, or fabric filters). Downstream of the particulate control device, regenerative thermal oxidizers for VOC control are typically used. The final component of the control train is usually a scrubber designed to control the acid gases (*e.g.*, hydrogen fluoride and hydrogen chloride) that can be present in the exhaust.



## Depolluting to Prevent Pollution

Best industry practices include removal and recovery or proper disposal of fluids and certain materials prior to shredding (depolluting). Many of these pollution prevention practices also help prevent fires and explosions in the shredder. These include removal of: gasoline and diesel fuel, oil, antifreeze, brake fluid, transmission fluid, etc.; lead-acid batteries; vehicle air bags; capacitors and transformers; switches and light ballasts containing mercury; tires; compressed gas cylinders; and refrigerants in appliances such as air conditioners, dehumidifiers, and refrigerators, as required by the Clean Air Act.

## Recommended Actions

To help minimize VOC emissions and achieve compliance, EPA recommends that owners and operators of scrap metal shredders take steps to:

- Follow best pollution prevention practices by depolluting scrap materials before they enter the shredder.
- Estimate hourly and annual VOC emissions, using appropriate available test data from similar facilities. If estimated total annual or hourly VOC emissions are below, but near the RACT or NSR/PSD thresholds for your area, consult with EPA or the state environmental agency and consider conducting a performance test to measure actual VOC emissions and to develop a facility-specific emission factor.
- If estimated emissions are over the RACT or NSR/PSD thresholds, contact EPA or the state environmental agency to discuss a path forward. In some cases, the installation of capture and add-on pollution controls may be required.

**Prolerized New England Company (dba Schnitzer Northeast)** own and operate a scrap metal shredding operation that uses a 9,000 hp shredder in Everett, MA. Massachusetts found that Schnitzer Northeast was a major source of VOC emissions needing to install best available control technology. Schnitzer Northeast entered into a settlement with Massachusetts and paid a penalty of \$900,000. Schnitzer Northeast installed a control train consisting of an enclosure, fans, drop out boxes to reduce large particles, venturi scrubbers to reduce small particles, regenerative thermal oxidizers to reduce VOCs, and acid gas scrubbers.

*DISCLAIMER: This document aims to explain the application of certain EPA regulatory provisions using plain language. Nothing in this Alert revises or replaces any regulatory provisions, any other part of the Code of Federal Regulations, the Federal Register, or the Clean Air Act. Following the recommendations discussed in this Alert does not guarantee compliance with the Clean Air Act, its implementing regulations, and associated state/local requirements. For more information, visit: [www.epa.gov/compliance](http://www.epa.gov/compliance).*



**Public Comments on IDEM Draft FESOP for  
Metal Management Indiana Inc DBA Sims Metal  
East Chicago (Lake County), Indiana  
FESOP No.: F089-46196-00608**

**ATTACHMENT B**

**Evaluation of Shredder VOM Emissions Testing Results – SIMS South  
Paulina, Chicago Illinois and SIMS Johnston, Rhode Island  
May 6, 2020**



**Evaluation of Shredder VOM Emissions Testing  
Results - SIMS South Paulina, Chicago, Illinois  
and SIMS Johnston, Rhode Island**

**May 6, 2020**

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## **Evaluation of Shredder VOM Emissions Testing Results - SIMS South Paulina, Chicago, Illinois and SIMS Johnston, Rhode Island**

The following comments are provided by RK & Associates, Inc. (RKA) regarding scrap metal shredder air permitting and emission testing activities conducted in September 2019 at the Sims Metal Management Midwest, Inc. (SIMS) South Paulina facility (IEPA Site ID No.: 031600FFO), located in Cook County at 2500 South Paulina Street in Chicago, Illinois.

These comments address the selection of the scrap metal shredder Volatile Organic Material (VOM) emission factor used as a basis to set allowable scrap metal processing rates and corresponding emission limits at SIMS South Paulina Chicago and East Chicago, Indiana facilities.

Based on an email between SIMS legal counsel and USEPA legal counsel, SIMS and USEPA have agreed on an emission factor for the SIMS South Paulina facility that is not contained in the actual test report and appears to be the same emission factor derived from testing conducted at a similar uncontrolled shredding facility at the SIMS Johnston, Rhode Island facility (SIMS Rhode Island) in September 2017.

**We believe that the emission factors from both the SIMS Rhode Island and South Paulina emission tests significantly underestimate actual shredder VOM, Particulate Matter (PM), metal, and HAP emissions.**

Testing at these facilities relied on the installation of temporary enclosures and induced draft fans located at the bottom of the shredder. These enclosures were intended to prevent emissions from escaping the front/infeed of the shredder (shredder inlet) by capturing shredder emissions and pulling them downward through the shredder and routing them through a temporary duct where sampling could be performed. Observations by USEPA inspectors present during the testing at both facilities identified significant amounts of uncaptured VOM emissions escaping the front/infeed of the shredder. Uncaptured emissions were not accounted for in the reported VOM emission factors from these tests.

Emissions testing that is designed to “capture emissions” for the purpose of establishing a VOM emission factor should be invalidated when there are significant unquantifiable amounts of uncaptured emissions. In fact, USEPA should require testing to be repeated incorporating methods that will accurately quantify uncaptured emissions. If site-specific testing cannot be successfully performed, USEPA should require these facilities to use a reliable VOM emission factor from testing performed at a similar facility.

Given the high levels of uncaptured emissions, theoretical adjustments to account for unquantified amounts of uncaptured VOM emissions are neither credible nor reliable and should not be used to determine compliance with applicable VOM control requirements.

At the SIMS Rhode Island facility, USEPA observers noted bluish gray smoke escaping the front/infeed of the shredder with an opacity of 20% continuously during the test with peaks as high as 50% opacity. These observations by USEPA, and potential impacts to the measured VOM emission factor were not addressed, in any way, in the test report.

At the SIMS South Paulina test, USEPA observers used a Forward Looking Infrared (FLIR) camera to periodically monitor for the presence of uncaptured VOM emissions escaping from the shredder inlet. FLIR images presented in this document show significant amounts of uncaptured VOM escaping the front/infeed of the shredder. Again, these USEPA observations and the potential impacts to the measured VOM emission factor were not addressed, in any way, in the test report.

The protocol documents for these tests, approved by USEPA, did not include the use of EPA approved test methods or any other measurements or observations to identify the presence of uncaptured VOM at the shredder inlet. After the documented failure of the September 2017 emission testing at SIMS Rhode Island, USEPA should have required that the protocol for the proposed September 2019 emission testing at SIMS South Paulina include the measurement of uncaptured VOM emissions. The South Paulina test protocol (Page 1-4) stated that *“Furthermore, the presence of any visible emission will be noted during the test period of the shredder infeed.”* Despite this statement, the test report did not address the presence of visible emissions from the shredder infeed.

Based on the above, use of the reported VOM emission factors from the SIMS Rhode Island and SIMS South Paulina emissions testing will significantly underestimate actual VOM emissions. This will result in these facilities operating out of compliance with applicable VOM control requirements and prevent the accurate assessment of impacts to local air quality.

## **Discussion of Shredder Operations**

GII, LLC (d/b/a General Iron), also located in Cook County at 1909 N. Clifton Ave. in Chicago, Illinois, conducted shredder emissions testing in November 2019. VOM emissions testing was performed at a shredder feed rate of 444 tph with 50% ELVs. Three one-hour test runs were performed at the inlet of the RTO using USEPA Methods 1-4 and Method 25a to determine an uncontrolled VOM emission factor, in units of pounds of VOM per ton of metal shredded (lb VOM/ton). The three individual test runs reported VOM emission factors of 0.5028, 0.4560 and 0.5788 lb/ton, with an average value of 0.5119 lb/ton. The VOM emission factors from the three test runs were consistent, which indicates that the test results provide a reliable emission factor.

Based on the following similarities, the uncontrolled VOM emission factors from SIMS South Paulina and General Iron should be in reasonable agreement. SIMS South Paulina and General Iron both:

- use identical hammermill shredder technology and operating procedures;
- process the same general scrap metal stream generated in the Chicago region;
- receive End-of-Life Vehicles (ELVs) from many of the same suppliers; and

- measured uncontrolled VOM emissions using USEPA Method 25A while shredding material that consisted of 50% by weight general scrap metal and 50% by weight ELVs.

However, the recent VOM emissions testing conducted at the SIMS South Paulina facility and General Iron's facility resulted in unexpectedly disparate VOM emission factors.

- General Iron's uncontrolled VOM emission factor was 0.5119 lb VOM/ton of metal shredded.
- SIMS South Paulina's uncontrolled VOM emission factor was just 0.09 lb VOM/ton of metal shredded, which is less than 17.6% of General Iron's VOM emission factor.

SIMS Rhode Island also uses the same hammermill shredder technology and operating procedures, and measured VOM emissions using USEPA Method 25A while processing 50% general scrap metal and 50% ELVs. However, SIMS Rhode Island reported an uncontrolled VOM emission factor of just 0.117 lb VOM/ton of metal shredded, which is less than 22.9% of General Iron's VOM emission factor.

The General Iron emission factor is almost 5.7 times greater than SIMS South Paulina's emission factor and 4.4 times greater than SIMS Rhode Island's emission factor. Given the similarities between these three facilities, the uncontrolled VOM emission factors should be directly comparable.

General Iron representatives submitted Freedom of Information Act (FOIA) requests to USEPA Region 1 and Region 5 asking for copies of the SIMS Rhode Island and South Paulina test protocols, site inspection reports, test reports, digital images, videos and any related correspondence between SIMS and its consultants and USEPA. Based on a review of the documents, RKA could only identify a single factor to account for this variation in measured emission factors; that being that General Iron used an emissions capture hood located over the front/infeed of the shredder with a very high emission capture efficiency, while SIMS Rhode Island and South Paulina used a temporary enclosure and induced draft fan located at the bottom of the shredders where overall capture efficiency was not evaluated. These temporary enclosures were intended to draw emissions downward through the hammermill section of the shredder and discharge them through a temporary stack where testing could be performed. It is clearly evident from our review of the USEPA Site Inspection Reports that the temporary enclosures failed to adequately capture VOM emissions from the front/infeed of the shredders.

USEPA Site Inspection Reports that were written by Agency observers on site during testing at both SIMS facilities and videos taken by the Agency observers clearly identify significant amounts of uncaptured emissions, including VOM emissions observed with a FLIR camera, emitted from the front/infeed of the shredders. These uncaptured emissions were not included, or otherwise accounted for, in the reported test results or reported VOM emission factors. In fact, the results of these FOIA requests did not produce any document in which the effectiveness of the temporary enclosures was quantified or an overall shredder VOM capture efficiency was determined.

The presence of significant amounts of uncaptured VOM emissions from the front/infeed of the shredder demonstrates, without question, that the temporary enclosures were not effective in capturing shredder emissions and therefore, the reported VOM emission factors underreport actual emissions.

The test protocols were approved, tests were performed, and test reports accepted without any attempt to evaluate the effectiveness of the temporary enclosures and the obvious potential impacts on reported emission factors. Even after the failed testing performed in September 2017 at the SIMS Rhode Island facility, USEPA allowed the same testing strategy to be used in September 2019 at the SIMS South Paulina facility, without requiring an evaluation of the effectiveness of the temporary enclosure to capture shredder emissions. Without this evaluation, is it simply not possible to determine what portion of total shredder VOM emissions are represented by the reported VOM emission factor.

It is likely that SIMS facility representatives, their testing consultant, and testing subcontractors were all aware of USEPA's FLIR images that confirmed the presence of uncaptured VOM emissions being emitted from the front/infeed of the shredder during the tests. The FLIR images are included with the Agency test reports. However, despite this knowledge, the SIMS test report failed to even acknowledge the presence of uncaptured VOM emissions from the front/infeed of the shredder.

The information provided herein demonstrates that the shredder VOM emission factor agreed to by SIMS and USEPA to represent the SIMS South Paulina facility is fundamentally flawed and significantly underestimates actual VOM emissions from the SIMS South Paulina shredder.

As described herein, a temporary enclosure at the bottom of a hammermill shredder is not capable of accurately measuring total shredder emissions. The most accurate method of capturing total shredder emissions is using an emissions capture hood located at the front/infeed of the shredder. This is the method utilized by General Iron. Due to logistical, safety and cost considerations, it may not be technically or economically feasible at all shredding facilities to temporarily install an emission capture hood above the front/infeed of the shredder for purposes of testing.

In the absence of reliable site-specific emission factors, USEPA requires that published emission factors or emission factors from a similar facility be used for purposes of permitting and compliance demonstration. There is publicly available VOM emission test data from other scrap metal shredders in the United States that have permanently installed emission capture systems that include a hood located at the front/infeed of the shredder. One of these facilities is General Iron. The reported VOM emission factors from these facilities are substantially more accurate than factors derived from use of a temporary enclosure located at the bottom of a shredder (such as SIMS Rhode Island and South Paulina), which failed to capture the most significant portion of VOM emissions that were observed escaping from the front/infeed of the shredder. Given the absence of a reliable site-specific VOM emission factor from SIMS Rhode Island or South Paulina, USEPA should require the use of more accurate VOM emission factors from a similar facility, such as General Iron, which has measured VOM emission factors from processing 80% general scrap metal and 20% ELVs (May 2018) as well as from processing 50% general scrap metal and 50% ELVs (November 2019).



Currently, the annual shredder throughput at SIMS South Paulina is limited to 344,000 tpy under an Administrative Consent Order with USEPA dated December 18, 2018 (ACO). The application of General Iron's uncontrolled shredder VOM emission factor to SIMS South Paulina's permitted annual shredder throughput of 344,000 tpy would increase estimated shredder VOM emissions from 21.76 tpy to over 88.05 tpy, which means that the SIMS South Paulina facility has been operating as a major source of VOM emissions without the required emission controls. This also means that SIMS South Paulina has been operating out of compliance with 35 IAC 218 Subpart TT, which requires a reduction of at least 81% in overall VOM emissions.

SIMS South Paulina has submitted a request to increase its throughput to 371,900 tpy using the flawed emission factor, which is currently pending with the Illinois EPA. When applying this increased throughput, even a minor increase in the VOM emission factor 0.117 lb VOM/ton to 0.130 lb VOM/ton (equivalent to the difference between 75% and 67% capture efficiency), would trigger VOM emission control requirements of 35 IAC 218 Subpart TT, requiring a reduction of at least 81% in overall VOM emissions. In fact, when applying the General Iron VOM emission factor to the requested SIMS South Paulina shredder throughput, actual VOM emissions would approach 95 tpy requiring the annual throughput be reduced to just 97,675 tpy to avoid triggering VOM emission control requirements under 35 IAC 218 Subpart TT. Given the deficiencies of the SIMS Rhode Island and South Paulina VOM emissions tests, the likelihood that SIMS South Paulina is operating out of compliance with Subpart TT is significant and should not be ignored.

We understand that SIMS has also relied on the flawed VOM emission factor (which is the same as the agreed upon VOM emission factor for South Paulina) to permit another one of its shredders in East Chicago, Indiana and may use the factor for other facilities as well. Currently, the permitted annual shredder throughput at the SIMS East Chicago facility is 330,000 tpy. When applying the General Iron VOM emission factor to SIMS East Chicago, the annual shredder throughput would need to be limited to just 75,425 tpy to avoid triggering the Best Available Control Technology (BACT) requirements of the Indiana rule at 326 IAC 8-1-6. Given the deficiencies of the SIMS South Paulina and Rhode Island VOM emissions tests, the likelihood that SIMS East Chicago will be operating out of compliance with 326 IAC 8-1-6 is significant and should not be ignored.

The use of inaccurate emission factors by one or more metal shredders also results in fundamental inequities in the regulation of shredder emissions. The failure to acknowledge and characterize uncaptured emissions in published emission factors from SIMS' shredders at Rhode Island and South Paulina is intentionally misleading to environmental regulators who rely on this information to determine regulatory applicability, emission control requirements and impacts on local air quality.

USEPA should reconsider its decision to approve a VOM emission factor from flawed emissions testing for use at SIMS South Paulina, SIMS East Chicago, or any other similar facilities. As a result of USEPA's decision, SIMS is continuing to operate its facilities on South Paulina in Chicago and East Chicago, Indiana without any VOM controls.

Additional details related to the above information are presented below.

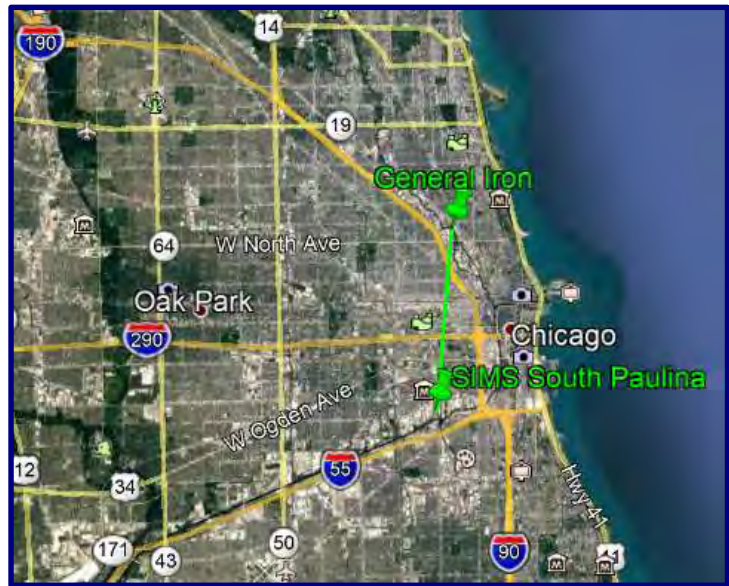
## Description of General Iron and SIMS Metal Shredders

The shredders at General Iron, SIMS Rhode Island, and SIMS South Paulina have the capacity to process approximately 500, 400 and 200 tons per hour, respectively. All three facilities have recently performed emissions testing while feeding approximately 50% by weight general scrap metal and 50% by weight ELVs.

The General Iron and SIMS South Paulina facilities are both located in Chicago less than five miles apart (see Figure 1) and process the same scrap metal stream generated in the Chicago region. Each facility also receives ELVs from the same region, and in many cases, from some of the same ELV suppliers.

All three metal shredders are hammermill shredders equipped with water injection to minimize the potential for deflagrations. Scrap metal entering the hammermill section of the shredder is violently and instantly torn into small pieces, significantly raising the temperature of the shredded metal. Water is injected into the high temperature zone and immediately flashes to steam lowering the temperature of the shredded metal. The rapid expansion of steam fills the void space in the hammermill, replacing oxygen in ambient air to minimize the potential for deflagrations. Shredded material is funneled downward through the hammermill section, greatly restricting downward flow of exhaust gases and steam, before being discharged from the bottom of the shredder.

**Figure 1 – Location of General Iron and SIMS South Paulina**



**Figure 2 – Typical Uncontrolled Exhaust from Front/Infeed of the Hammermill Shredder at SIMS South Paulina**



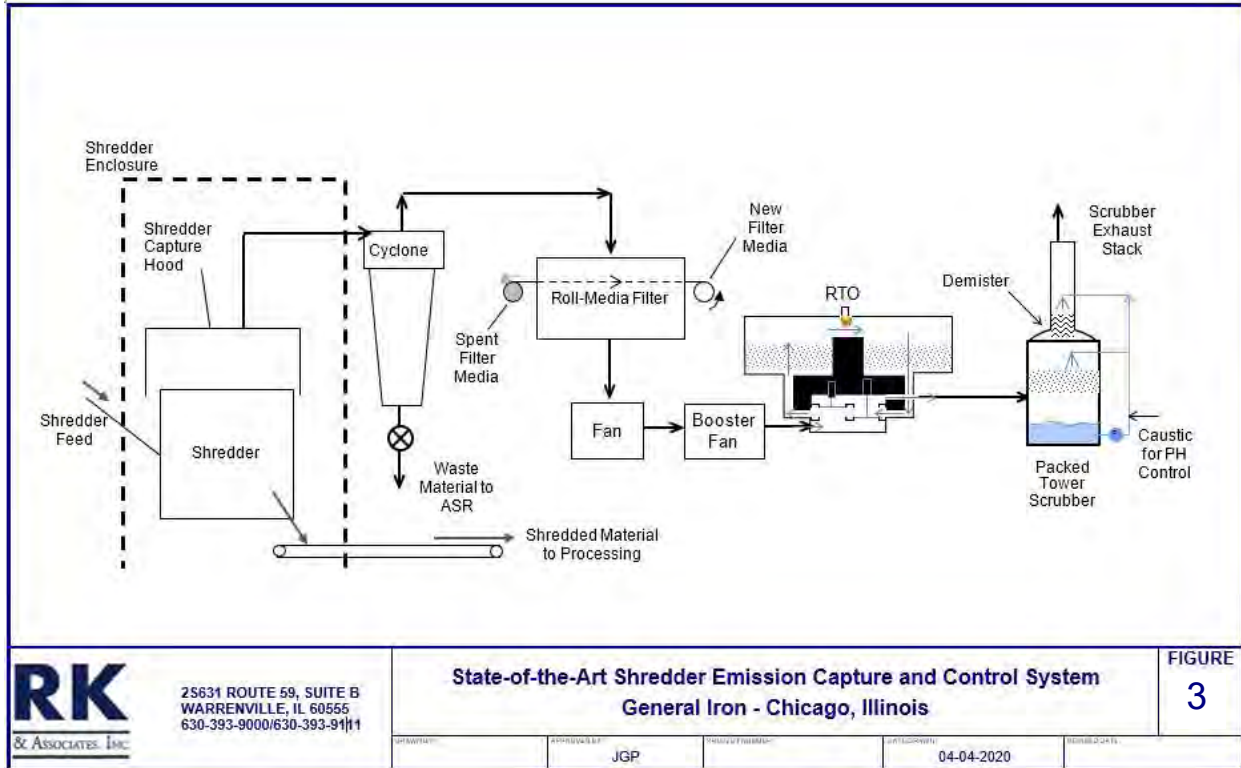
Paulina and SIMS Rhode Island. Figure 2 is a photograph of the steam plume discharged from the infeed opening of the SIMS South Paulina shredder.

**Based on the above, the most reliable way to capture shredder emissions is using a hood located over the front/infeed of the shredder equipped with a fan with enough capacity to capture the steam generated by the shredder. Due to safety and cost considerations, the temporary installation of this type of emissions capture system is typically not feasible.**

The front/infeed of a hammermill shredder is open to the atmosphere to allow scrap metal to enter the shredder. The size of the shredder infeed opening is much larger than the shredded metal discharge opening and is much closer to the point of steam generation. The combination of the larger size of the shredder infeed opening, the proximity of the shredder infeed opening to the point of steam generation, the rapid rate of expansion of water to steam, buoyancy of hot steam (hot air/steam rises), and the restriction to downward flow causes the steam (and shredder exhaust) to follow the path of least resistance discharging upward through the infeed opening to the atmosphere. This is evidenced by the steam plume observed being discharged from uncontrolled hammermill shredders, such as the shredders at SIMS South

**Metal Shredder Emissions Capture and Control System**

General Iron is the only shredder in Wisconsin, Illinois and Indiana and one of only a few shredders in the United States to utilize state-of-the-art VOM capture and control technology (such as the one illustrated in Figure 3).



In stark contrast to General Iron, the SIMS East Chicago and SIMS South Paulina shredders have no emissions capture or control equipment. As a result, the permitted VOM emissions from General Iron are significantly lower than the permitted VOM emissions from SIMS South Paulina, even though the capacity of the General Iron shredder is larger as shown in Table 1.

**Table 1 – Comparison of VOM Emissions at General Iron and SIMS South Paulina and East Chicago**

Facility	Shredder Capacity (tph)	Permitted Annual Shredder Throughput (tpy)	VOM Emission Factor (lb/ton)	VOM Control Efficiency (%)	VOM Emissions (tpy)
General Iron Chicago, IL	500	1,000,000	0.5119	99%	2.56
SIMS East Chicago, IN	112	330,000	0.1170	0%	19.31
SIMS South Paulina Chicago, IL	200	344,000	0.1170	0%	20.12

Even though the shredder at SIMS South Paulina is much smaller than the shredder at General Iron, VOM emissions from SIMS South Paulina are significantly larger due to the lack of VOM controls.

General Iron’s shredder is equipped with a shredder emissions capture hood located over the front/infeed of the shredder. An induced draft fan pulls approximately 60,000 acfm of ambient air into the hood from around the front/infeed of the shredder. The induced draft fan pulls air from the capture hood through a cyclone to remove relatively large material entrained in the air flow and then through a roll-media filter for control of PM and associated metals. A second induced draft fan located at the inlet of the RTO boosts the pressure of the exhaust gas forcing the air through a regenerative thermal oxidizer (RTO), which demonstrated 99% destruction of VOM during testing performed in November of 2019, and finally through a packed tower scrubber to control acid gases that may be generated in the RTO.

Based on the hammermill shredder design features described above, using a hood located above the front/infeed of the shredder is the most effective way to capture shredder emissions. The location of the hood, combined with the large volume of ambient air drawn into the hood, results in a very high emission capture efficiency. The capture efficiency of General Iron’s emission capture system, although not directly measured, was estimated to be greater than 90% based on observations of the shredder hood by IEPA’s stack testing expert and USEPA representatives present during recent emission testing.

At General Iron, the vast majority of shredder VOM, PM, metals, and HAPs are removed and destroyed by the emission capture and control system. Exhaust gases from uncontrolled shredders, like those at SIMS Rhode Island and SIMS South Paulina, contain significant quantities of VOM, PM, metal and HAP emissions.

Application of General Iron’s more accurate uncontrolled VOM emission factor to the permitted annual shredder throughput at SIMS South Paulina and SIMS East Chicago, Indiana facilities would result in **actual VOM emissions of up to 95 tpy**, as shown in Table 2.



**Table 2 – Potential Actual Uncontrolled VOM Emissions Using General Iron’s VOM Emission Factor**

Facility	Source of Shredder Annual Throughput Limit	Annual Shredder Throughput (tpy)	Uncontrolled VOM Emission Factor (lb/ton)	VOM Control Efficiency (%)	VOM Emissions (tpy)
SIMS South Paulina Chicago, Illinois	Current Limit pursuant to ACO	344,000	0.5119	0%	88.05
	Proposed FESOP Limit	371,900	0.5119	0%	95.19
SIMS East Chicago, Indiana	Operating Permit Limit	330,000	0.5119	0%	84.46

**Uncontrolled Shredder VOM Emission Factors**

All three facilities (General Iron, SIMS Rhode Island and SIMS South Paulina) conducted emissions testing while processing 50% by weight general scrap metal and 50% by weight ELVs. All three facilities require ELV suppliers to drain fluids prior to delivering ELVs. The test protocols and test reports for the SIMS facilities do not describe any further processing of ELVs prior to shredding, although the USEPA Site Inspection Reports from the SIMS Rhode Island testing described that gas tanks were removed from ELVs prior to shredding, flattened, and subsequently processed through the shredder. The report did not specify if the gas tanks were shredded during the VOM testing or at another time. Each of these facilities also used USEPA Method 25A to measure the concentration of Total Hydrocarbons (THC) in the exhaust stream. At all three facilities, THC was reported as VOM.

Given the similarities in shredder design, operating practices, waste stream characteristics and USEPA test methods used, VOM emission factors from all three facilities are expected to be reasonably consistent. This is especially true at the General Iron and SIMS South Paulina facilities because the shredder feed stream processed during recent emissions testing came from the same Chicago regional market.

During the SIMS Rhode Island VOM emission test, USEPA Inspection Reports identified that ELVs received had been drained of fluids and facility employees removed and flattened gas tanks from ELVs prior to shredding. The inspection reports did not specify if the flattened tanks were shredded during the VOM emission test or at another time. This practice was acknowledged in the SIMS East Chicago, Indiana operating permit issued by IDEM, which included the following condition [Condition D.1.1] to limit VOC emissions:

*The Permittee shall drain and remove (to the extent possible) VOC and VHAP containing fluids from vehicles, appliances, industrial machinery, and other metal scrap received by the Permittee prior to shredding; or the Permittee shall document that inspections have been performed to confirm the non-existence of VOC and VHAP containing fluids. Fluids*

*shall include, but are not limited to, gasoline, motor oil, antifreeze, transmission oil, brake oil, power steering fluid, hydraulic fluid, and differential fluid.*

This practice reduces the measured uncontrolled VOM emissions from the shredder even though it does not similarly reduce overall facility wide emissions because VOCs from the headspace of the gas tanks are still released on site.

To document compliance with the above requirement, Conditions D.1.7 (a)(2)&(3) of the IDEM operating permit requires the facility to maintain the following records.

*Records that VOC and VHAP containing fluids have been drained and removed (to the extent practicable) from vehicles, appliances, industrial machinery, and other scrap metal received by the Permittee prior to shredding; and*

*If the Permittee did not drain and remove VOC and VHAP containing fluids onsite, records of the inspections performed to confirm the non-existence of VOC and VHAP containing fluids in vehicles, appliances, industrial machinery, and other metal scrap received by the Permittee prior to shredding.*

Any facility relying on the invalid SIMS Rhode Island VOM emission factor should the above requirements incorporated into their permits.

General Iron's experience in the Chicago region is that gas tanks are not removed from ELVs prior be delivered to a scrap metal recycling facility. Because there is no evidence that ELV gas tanks were shredded during the SIMS Rhode Island VOC emissions tests; therefore, any facility that relies on the SIMS Rhode Island VOM emission factor should not be allowed to shred ELV gas tanks.

There are gross disparities in the uncontrolled shredder VOM emission factors from these facilities as shown in Table 3 below and as illustrated in Figure 4.

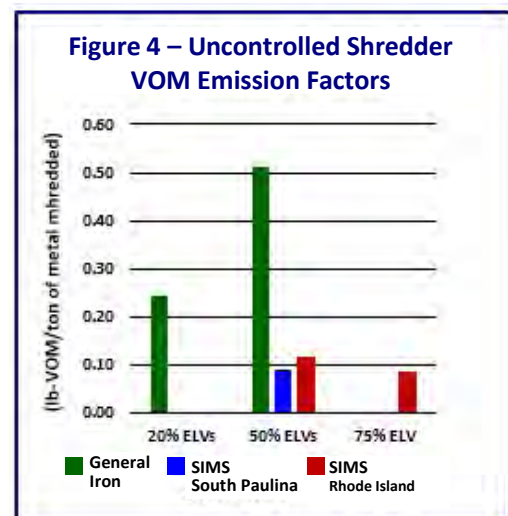
**Table 3 – Summary of Shredder VOM Emission Testing**

Parameter		General Iron Chicago, Illinois		SIMS South Paulina Chicago, Illinois	SIMS Johnston Rhode Island	
Shredder Technology		hammermill with water injection				
Date of VOM Testing		Jun. 2018	Nov. 2019	Sept. 2019	Sept. 2017	
Material Processed During VOM Emission Testing	General Scrap Metal (wt.%)	80%	50%	50%	50%	25%
	End of Life Vehicles (wt %)	20%	50%	50%	50%	75%
Shredder Feed Rate During Testing (tons/hr)		390	444	198	355	351
USEPA Test Method		25A (as propane) reported as VOM				
Shredder Emission Capture Device		Capture hood located over the top of the shredder		Temporary enclosure constructed around the shredded metal discharge at the bottom of the shredder		
Air Flow Through Capture Device		60,800	56,478	47,116	14,060	13,866
Estimated Shredder Emission Capture Efficiency		> 90%	> 90%	Not Evaluated or Reported <sup>(a)</sup>	Not Evaluated or Reported	Not Evaluated or Reported
Uncontrolled VOM Emission Factor (lb VOM/ton of metal shredded)		0.2430	0.5119	0.09 (17.6% of General Iron 11/19 test)	0.117 (22.9% of General Iron 11/19 test)	0.0893 <sup>(b)</sup>

- a. Capture efficiency for the temporary enclosure reported by Mostardi Platt in the facility emission testing report discussed below.
- b. Reported VOM emission factor for processing 75% ELVs is approximately 24% lower than the VOM emission factor for processing 50% ELVs. This is contrary to the anticipated trend of increasing VOM emission factors with increasing percent of ELVs processed.

The air flow rate through the temporary enclosure at the SIMS Rhode Island facility is significantly lower than the South Paulina facility even through the shredder throughput at the Rhode Island facility was almost twice the throughput at South Paulina. This further indicates a poor capture efficiency of the temporary enclosure at SIMS Rhode Island.

Like the SIMS Rhode Island test report, the SIMS South Paulina test report failed to acknowledge or attempt to quantify the presence of uncaptured emissions escaping the front/infeed of the shredder. In fact, the only reference to capture efficiency in the Mostardi Platt test report was identified in a footnote (\*\*\*) to the table appearing at the bottom of Page 1 of the report describing the *VOC Test Results*:





*\*\* Mostardi Platt estimated the capture efficiency for the September 20 test to be at least 98%. After USEPA identified capture efficiency concerns with a test run on 9/5/19, MMMI [SIMS] conducted a thorough review of the temporary enclosure (TE) installed for the emissions test and identified an opening along the foundation wall on the south side of the shredder. MMMI applied additional sheeting around that area, effectively sealing off the opening. MMMI also removed the screen on the duct work which MMMI identified as restricting the emissions flow rate by collecting debris on the screen mesh. In response, MMMI installed a container (pod) after the emissions sampling points, using water misters to contain debris within the pod. These corrective measures resulted in substantially improved capture efficiency compared with the 9/5/19 test run, as observed through the use of FLIR Systems camera.<sup>1</sup>*

In the first sentence of the above footnote, it states that Mostardi Platt estimated capture efficiency for the September 20 test to be at least 98%. However, the test protocol did not describe any capture efficiencies to be measured by Mostardi Platt and the test report did not include any field measurements related to capture efficiency of the temporary enclosure or overall capture efficiency of the shredder.

As described in the footnote, the referenced capture efficiency can only be referring to the capture efficiency of the temporary enclosure at the bottom of the shredder and not the overall capture efficiency of the shredder. The temporary enclosure, however, failed to capture the overwhelming majority of VOM emissions that escaped the front/infeed of the shredder, as evidenced by observations included in the USEPA Region 5 Site Inspection Report and accompanying FLIR videos. There is no documentation that these uncaptured emissions were accounted for in the reported capture efficiency or the reported VOM emission factor.

The SIMS South Paulina test report does not even identify that uncaptured VOM emissions were observed escaping from the front/infeed of the shredder during testing. Visual observations are not a reliable or accurate method of estimating uncaptured emissions of the magnitude described in the USEPA Site Inspection Report and shown in the accompanying FLIR videos. The reported emission factor grossly underestimates the uncontrolled VOM emissions making it impossible to reasonably evaluate local air quality impacts from VOM and other affected pollutants. Further, USEPA's acceptance of this flawed emission factor will undoubtedly result in its use by multiple other facilities that will likewise be underreporting actual VOM emissions.

**The SIMS Rhode Island and SIMS South Paulina test reports do not mention the presence of uncaptured VOM emissions from the front/infeed of the shredders and do not address the differences in emission factors between SIMS facilities and General Iron. The reason for the differences in these uncontrolled VOM emissions factors is that the SIMS Rhode Island and South Paulina tests did not identify and account for uncaptured VOM emissions from the front (infeed) of the shredder, which is where the overwhelming**

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<sup>1</sup> Metal Shredder Emission Testing Report; Metal Management Midwest, Inc., Metal Shredder Facility, 2500 S. Paulina Street Chicago, Illinois; Testing Date September 20, 2019; by Mostardi Platt; Page 2 of 145.

**majority of the emissions are released, even when a temporary enclosure is used at the bottom of the shredder.**

### **SIMS Rhode Island Shredder VOM Emissions Test**

RKA reviewed SIMS Rhode Island's emission test protocol, emission test report, and the associated USEPA Site Inspection Reports, which described the observations made by USEPA Region 1 inspectors that were present during testing performed in September 2017.

SIMS test strategy at their Rhode Island facility relied on the installation of a temporary enclosure around the shredder discharge conveyor at the bottom of the shredder. The enclosure was equipped with an induced draft fan in an attempt to draw shredder exhaust downward through the hammermill section of the shredder, through the temporary enclosure, and then discharge emissions to a temporary stack where emissions testing was performed.

The success of this testing strategy relies primarily on the ability of the fan to pull emissions downward through the hammermill section of the shredder while providing sufficient negative draft at the front/infeed of the shredder to minimize uncaptured emissions from escaping the front/infeed of the shredder.

Based on the design and operation of a hammermill shredder, an enclosure located at the bottom of a hammermill shredder is not able to create enough draft at the front/infeed of the shredder to prevent significant amounts of uncaptured emissions from escaping the front/infeed of the shredder. Observations documented in USEPA inspection reports confirm this statement.

The USEPA Site Inspection Reports demonstrate that the test clearly failed to capture a significant portion of shredder VOM, PM and metal emissions escaping from the front/infeed of the shredder.

*Mr. Rapp noted bluish gray smoke emanating from the shredder. He and Mr. Mohamoud estimated opacity of approximately 40% for many minutes and perhaps as much as 50% at times. They noted an opacity of approximately 20% continuously.<sup>2</sup>*

The protocol approved by USEPA called for the enclosure to be equipped with a 30,000 cfm fan; however, the actual capacity of the fan used was only 14,800 cfm. USEPA acknowledged this discrepancy but agreed to allow the testing to be performed. The following statement confirms that a smaller fan was not adequate:

*It appears as if the 15,000 scfm fan on the front side of the shredder was not sufficient to pull enough air to capture all of the exhaust coming off the shredder.<sup>3</sup>*

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<sup>2</sup> October 19, 2017 Inspection of Sims Metal Management, Johnston RI written by Ms. Christine Sansevero of USEPA Region 1 observations during the September 2017 shredder emission tests, page 7 of 10.

<sup>3</sup> October 19, 2017 Inspection of Sims Metal Management, Johnston RI written by Ms. Christine Sansevero of USEPA Region 1 Agency observations during the September 2017 shredder emission tests, page 5 of 10.

These observations clearly show that the Rhode Island testing strategy failed to adequately capture shredder emissions. The emission test report published by SIMS did not attempt to quantify the uncaptured emissions and failed to even acknowledge the copious amounts of uncaptured emissions escaping from the front/infeed of the shredder. The report also failed to acknowledge that the reported emission factor represents only a small portion of total shredder emissions that were captured by the temporary enclosure and do not represent total shredder emissions. Shredders using these emission factors will be significantly underreporting total actual emissions.

Despite the fact that the Rhode Island test was required by USEPA Region 1 as part of a Section 114 Information Request, to the best of our knowledge, USEPA Region 1 did not formally question or comment on the accuracy or adequacy of the SIMS Rhode Island test.

### **Flawed SIMS Rhode Island Shredder VOM Emission Test Being Used to Permit East Chicago, Indiana and South Paulina Facilities**

In addition to using the reported shredder VOM emission factor from the Rhode Island testing to permit SIMS Rhode Island, SIMS also used this emission factor to set permit limits for shredder throughput and VOM emissions for its shredder in East Chicago, Indiana. During the public notice period for the SIMS East Chicago air permit, RKA submitted detailed comments, dated August 2, 2019, to the Indiana Department of Environmental Management (IDEM) highlighting the problems with the Rhode Island test results.

In response to these comments, IDEM stated that because the SIMS Rhode Island testing was performed under a protocol approved by USEPA and the results of the test were not questioned by USEPA, they would be accepted and relied upon for permitting the SIMS East Chicago facility. In addition, IDEM noted that the East Chicago permit required that the shredder emission rates be revised, if necessary, based on the result of USEPA-required testing to be performed at the SIMS South Paulina facility and that IDEM would review the test protocol for the South Paulina test.

SIMS also used the Rhode Island VOM emission factor to define shredder VOM emissions and set shredder throughput limits in the initial January 2019 FESOP application for SIMS South Paulina submitted to IEPA. RKA submitted a copy of our earlier comments on the Rhode Island emission test to USEPA Region 5, and to IEPA on August 30, 2019. A copy of these comments is presented in Attachment B of this correspondence.

SIMS South Paulina submitted a Supplement to its initial FESOP application to IEPA on January 31, 2020, primarily for the purpose of incorporating an updated shredder VOM emission factor as required by the ACO. This Supplement included a copy of an e-mail from Ms. Nidhi O'Meara, an attorney with USEPA's Office of Regional Counsel for Region 5, to Mr. Mark LaRose, an attorney representing SIMS. In this email, Ms. O'Meara stated:

*“Region 5, EPA, has received and carefully reviewed the stack test report for the hammer mill metal shredder at the Paulina Street facility, dated October 18, 2019.*

*After extensive discussions regarding the stack test parameters and possible variability of these parameters (which would impact the VOM emission factor), based on the October 18, 2009 stack test results and the variability factors, it is reasonable to conclude and therefore EPA and MMMI agree that the emission factor for the MMMI shredder is 0.117 pounds of VOM per ton of shredded material. This emission factor is based off of shredding 50% end-of-life vehicles during the stack testing.”*

The above e-mail clearly references the South Paulina stack test, but does not identify what “variability factors” were discussed or how those factors were used to adjust the VOM emission factor of 0.09 lb/ton identified in the South Paulina stack test report to the agreed upon VOM emission factor of 0.117 lb/ton.

Based on the information presented in this document, theoretical adjustments to account for unquantified amounts of uncaptured VOM emissions are neither credible nor reliable and should not be used to determine compliance with applicable VOM control requirements.

In the Supplement to the South Paulina FESOP application, SIMS addresses the above referenced ACO requirement by stating:

*“Emissions testing for the hammermill shredder at the Paulina Street Facility was timely conducted on September 20, 2019 (the Stack Test) in accordance with Paragraph 33 of the ACO. On January 17, 2020, USEPA and MMMI [SIMS] came to an agreement that the hammermill shredder emission factor per the stack test be 0.117 pounds of Volatile Organic Material (VOM) per ton of shredded material (lb VOM/ton), as seen in Attachment C. MMMI has used this 0.117 lb VOM/ton emission factor and has revised the hammermill shredder VOM emission calculations accordingly. The revised calculations are included in Attachment C. Note that SIMS facility-wide potential-to-emit (PTE) VOM at the Paulina Street Facility remains less than 25 tons per year.”*

The Supplement, submitted to IEPA in support of its FESOP application (and also submitted to USEPA Region 5 pursuant to the ACO), also did not identify how the “agreed upon” VOM emission factor was derived from the South Paulina test results, nor did the Supplement include any portion of the South Paulina test report as supporting information.

The lack of transparency on the origin of the agreed upon VOM emission factor is concerning , particularly with respect to emission testing required by an ACO for the purpose of identifying a site-specific VOM emission factor. Given the significant disparities in the reported VOM emission factors from General Iron and SIMS South Paulina, IEPA should not accept the agreed upon VOM emission factor for SIMS South Paulina.

In fact, the agreed upon South Paulina VOM emission factor of 0.117 lb/ton (at 50% ELVs) is coincidentally identical to the shredder VOM emission factor reported from the SIMS Rhode Island facility. The ACO for SIMS South Paulina (Paragraph 36.a.) required that SIMS submit a FESOP application that “...*must request to use the VOM emission factor calculated as a result of Emissions Testing for the hammermill shredder at the Paulina Street facility.*”

As we have previously identified to USEPA, IEPA and IDEM, the Rhode Island emission testing results are highly suspect because of the gross amount of uncaptured (and unquantified) VOM emissions identified by USEPA Region 1 observers present during the test. The Rhode Island test report did not even acknowledge that these uncaptured emissions were present and no apparent adjustments to the measured VOM emission factor were made to account for uncaptured emissions.

As described herein, review of the Rhode Island shredder VOM test results point to deficiencies in the ability of the temporary enclosure at the bottom of the shredder to adequately capture total shredder VOM emissions. This same deficiency was also demonstrated during the South Paulina facility shredder emissions testing as evidenced by the unquantified amount of uncaptured VOM emissions documented by USEPA Region 5 observers present during testing.

The reported capture efficiency of the shredder emissions control system used at General Iron was determined by direct visual observation of the front/infeed of the shredder (where the overwhelming majority of emissions are released) by experienced IEPA and USEPA representatives who estimated the capture efficiency to be at least 90%; a level at which a visual observation may be used to reasonably estimate capture efficiency. This is especially true for a shredder equipped with VOM emission controls where a small amount of uncaptured emissions is not likely to trigger additional control or negatively impact compliance with applicable air quality standards.

Regardless of whether the agreed upon emission factor was derived from VOM emission testing at the SIMS South Paulina facility or the SIMS Rhode Island facility, the reported test results from both of these facilities failed to account for the significant portion of uncaptured shredder emissions observed during testing. Visual observations are not a reliable or accurate method of estimating uncaptured emissions of the magnitude described in the USEPA Site Inspection Report and shown in the accompanying FLIR videos. In the absence of emission controls, even a small error in assumed capture efficiency can trigger the regulatory requirement for VOM controls and cause exceedances of applicable air quality standards.

Because the emission testing at SIMS Rhode Island and SIMS South Paulina did not account for uncaptured VOM emissions, the reported emission factors do not represent total shredder VOM emissions and should be deemed invalid. The significant disparities in measured VOM emission factors between General Iron and SIMS South Paulina support this conclusion.

## **SIMS South Paulina Shredder Emissions Testing**

SIMS South Paulina was also required to conduct an emissions test of its South Paulina shredder pursuant to its USEPA ACO. SIMS relied on the same failed test strategy used at its Rhode Island facility to perform shredder VOM emissions testing at South Paulina. Not surprisingly, the VOM emission factor derived from the testing was astonishingly low (0.09 lb/ton) and, as discussed above, was not even reported to IEPA or directly used to supplement the FESOP application for that facility.

RKA received and reviewed the following documents via Freedom of Information Act (FOIA) requests made to USEPA Region 5 and IEPA. The documents are listed in chronological order.

- A. January 2019 Federally Enforceable State Operating Permit Application for SIMS Metal Management Midwest, Inc. South Paulina Facility submitted to the IEPA.
- B. May 5, 2019 Shredder Emission Testing Protocol prepared by Trinity Consultants on behalf of SIMS South Paulina submitted to USEPA Region 5. This document describes the proposed VOM, PM and Metal emissions testing of the shredder utilizing a temporary enclosure installed at the bottom of the shredder.
- C. October 2, 2019 Clean Air Act Inspection Report written by Kenneth Ruffatto of USEPA Region 5 documenting observations made during a site inspection performed on September 5, 2019, with digital images and videos (including FLIR videos) captured during the inspection.
- D. October 8, 2019 Clean Air Act Inspection Report written by Vicky Mei of USEPA Region 5 documenting observations made during a site inspection performed on September 19, 2019, with digital images and videos (including FLIR videos) captured during the inspection.
- E. October 8, 2019 Clean Air Act Inspection Report written by Vicky Mei of USEPA Region 5 documenting the observations made during a site inspection performed on September 20, 2019, to witness shredder emission testing, with digital images and videos (including FLIR videos) captured during the inspection.
- F. October 18, 2019 Metal Shredder Emissions Testing Report prepared by Mostardi Platt for testing performed on September 20, 2019.
- G. January 31, 2020 Supplement to the Federally Enforceable State Operating Permit for the SIMS South Paulina facility submitted to IEPA.

SIMS South Paulina constructed a temporary enclosure at the bottom of the shredder that essentially enclosed an under mill oscillating (UMO) conveyor that transfers shredded scrap metal to a downstream take away conveyor. An induced draft fan was used to draw approximately 45,000 acfm of air through the enclosure and exhaust it through a discharge stack. Testing was performed in exhaust ductwork



downstream of the fan. The failed objective of the enclosure and fan was to pull air down through the shredder so that VOM generated by the shredder would be captured for testing.

On August 30, 2019, RKA submitted comments highlighting the identified problems with the SIMS Rhode Island shredder emission test protocol to USEPA Region 5 (see Attachment B to this correspondence). These comments included a suggestion that the protocol for the then-pending South Paulina shredder emissions test be modified to include a procedure to identify uncaptured VOM emissions from the front/infeed of the shredder. However, the SIMS South Paulina test was performed in September 2019 without inclusion of procedures to identify or quantify uncaptured VOM emissions from the front/infeed of the shredder.

As described below, the South Paulina test was also unsuccessful due to the presence of an unquantified amount of uncontrolled VOM emissions from the front/infeed of the shredder. USEPA inspectors used a FLIR camera to observe the front/infeed of the shredder during the South Paulina shredder emissions test and noted that visible emissions and VOM emissions were observed during the test.

*“Visible emissions and emissions imaged via the FLIR camera were seen during all three runs.”<sup>4</sup>*

*During Run #2, significantly more emissions were uncaptured, as seen via FLIR camera, (see Videos #13-21 of Appendix A).”<sup>3</sup>*

*“Videos captured during Run #3 showed sporadic spikes in emissions imaged via the FLIR camera.”<sup>3</sup>*

These references in USEPA Site Inspection Reports to multiple FLIR images identifying uncaptured VOM emissions from the front/infeed of the shredder clearly indicate that the temporary enclosure was not successful in capturing VOM emissions from the front/infeed of the shredder. Emission factors derived from this test will significantly underreport actual VOM emissions.

Figures 5, 6, and 7 below are FLIR images from videos taken by a USEPA Region 5 observer on September 20, 2019, during Test Runs 1, 2 and 3 respectively at SIMS South Paulina. These images show uncaptured emissions from the front/infeed of the shredder which were not accounted for in the reported test results. Review of the USEPA Site Inspection Report show that a total of 34 videos were recorded during the emission test. The majority of these videos include FLIR imagery that identify uncaptured emissions escaping from the front/infeed of the shredder during testing.

Figure 5 is an image from 1:54 (minutes and seconds into the video) of video MOV\_2568 taken during Test Run 1. The video was recorded from a location just south of the auto shredder residue discharge pile viewing in a northwesterly direction toward the shredder. The image shows a large plume of uncaptured emissions discharged from the front/infeed of the shredder.

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<sup>4</sup> September 20, 2019 Inspection of MMMI South Paulina written by Ms Vicky Mei of USEPA Region 5 documenting Agency observations during the September 2019 shredder emission tests, page 3 of 7.

**Figure 5 – Uncaptured Emissions from Front/infeed of Shredder During Run 1**

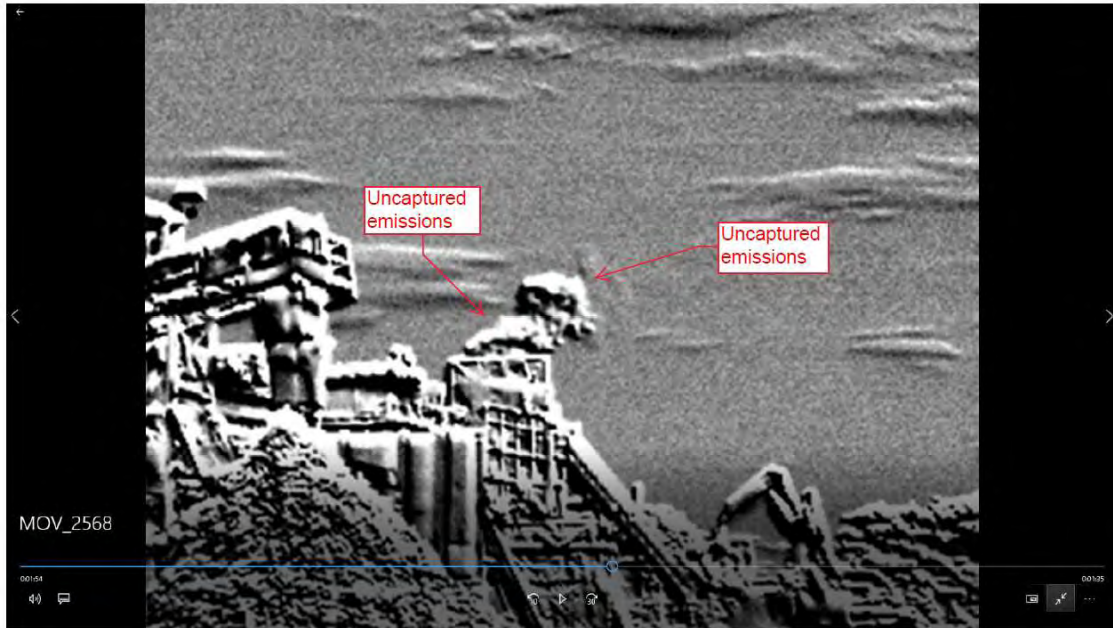


Figure 6 is an image from 0:35 of video MOV\_2572 taken during Test Run 2. The video was recorded from a location southwest of the shredder viewing in a northeasterly direction toward the front/infeed of the shredder. The image shows a large plume of uncaptured emissions discharged from the front/infeed of the shredder.

**Figure 6 – Uncaptured Emissions from Front/infeed of Shredder During Run 2**

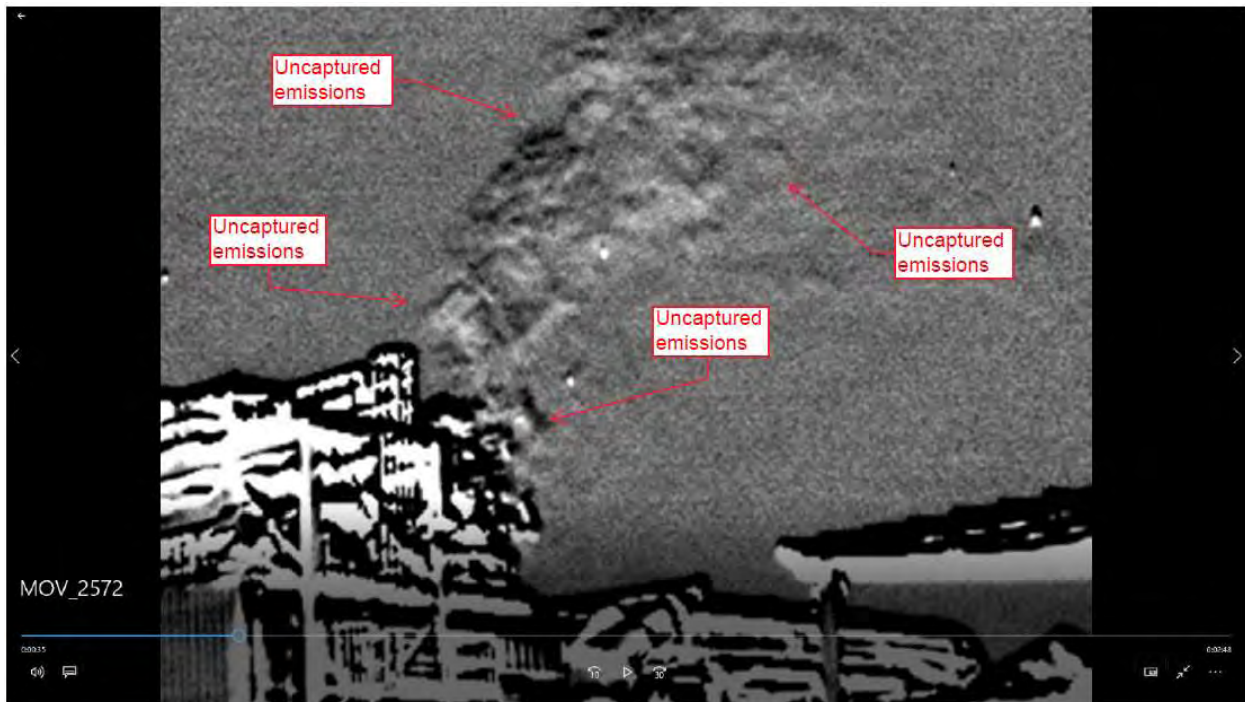
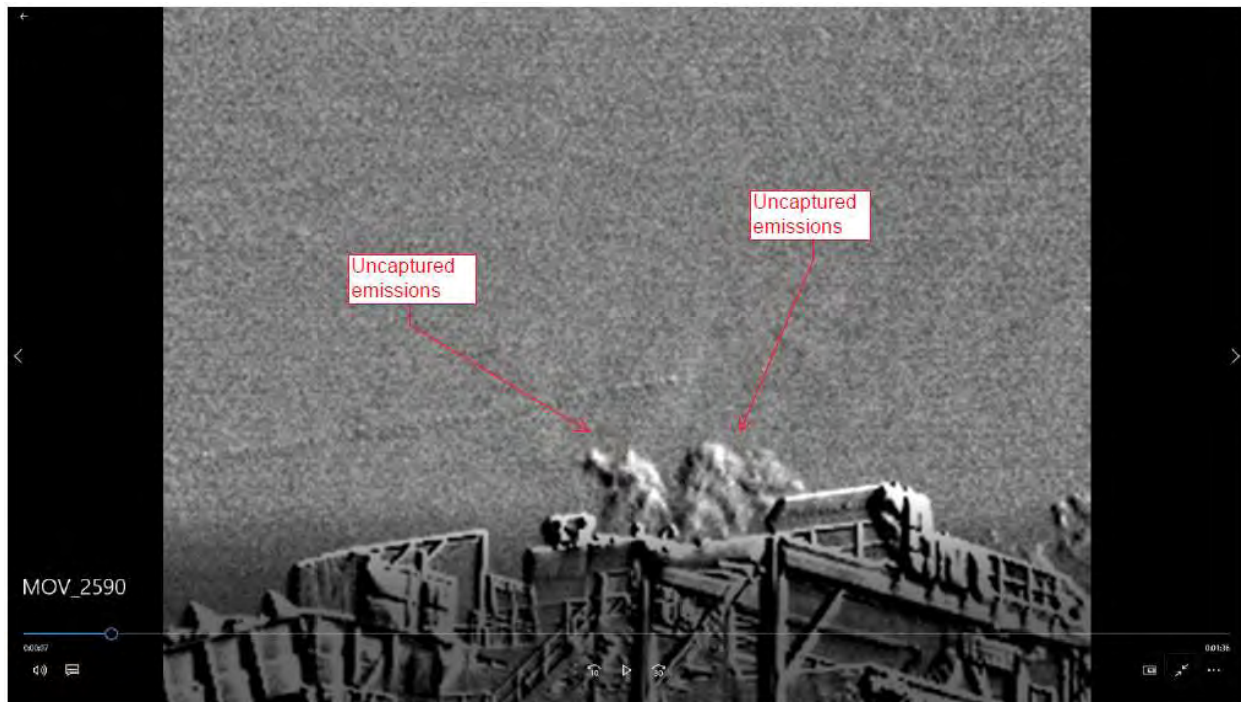




Figure 7 is an image from 0:07 of video MOV\_2590 taken during Test Run 3. The video was recorded from a location northwest of the shredder viewing in a southeasterly direction toward the front/infeed of the shredder. The image shows a large plume of uncaptured emissions discharged from the front/infeed of the shredder.

The FLIR images from the September 20, 2019 emissions testing show numerous examples of similar plumes of uncaptured emissions escaping the front/infeed of the shredder throughout the testing periods, clearly demonstrating that a temporary enclosure located at the bottom of the shredder is not capable of adequately capturing VOM emissions. The Mostardi Platt test report identified a capture efficiency of 98% but there was no documentation on how this value was determined. Based on our review of the FLIR videos, the referenced capture efficiency does not refer to total shredder emissions but only the small portion of total VOM measured from the UMO conveyor enclosure. Without including test methods and procedures to evaluate overall shredder emissions capture efficiency as part of a test protocol, the resulting VOM emission factors are unreliable and significantly underestimate actual shredder VOM emissions.

**Figure 7 – Uncaptured Emissions from Front/infeed of Shredder During Run 3**



Based on the proposed South Paulina annual shredder throughput, even a small increase from the identified South Paulina VOM emission factor would result in an increase in potential VOM emissions that would trigger the control requirements of 35 IAC 218 Subpart TT. **Using General Iron's more accurate uncontrolled VOM emission factor and SIMS South Paulina's requested annual shredder throughput, actual VOM emissions from SIMS South Paulina will approach 95 tpy.**

Detailed comments on the SIMS South Paulina test report are presented in Attachment A to this correspondence.

## **Conclusions**

The information provided herein supports the following conclusions regarding VOM emissions testing at General Iron, SIMS Rhode Island, and SIMS South Paulina:

- All three facilities use the same hammermill shredder technology with water injection.
- Hammermill shredders are designed to exhaust steam and emissions to the atmosphere through the front/infeed of the shredder.
- All three facilities conducted testing while processing the same percentage of general scrap metal and ELVs and the materials processed by General Iron and SIMS South Paulina were essentially the same.
- All three facilities used the same USEPA Test Methods to measure VOM concentration and exhaust gas flow rates.
- General Iron is the only facility in Wisconsin, Illinois or Indiana and one of only a few facilities in the United States that uses a state-of-the-art shredder emissions capture and control system.
- SIMS Rhode Island and SIMS South Paulina are not equipped with emissions capture or control systems.
- The preferred method to capture emissions from a hammermill shredder is to use a capture hood located over the front/infeed of the shredder. General Iron is the only one of these three facilities that used a capture hood located over the front/infeed of the shredder to measure shredder emissions.
- Information in USEPA Site Inspection Reports from the SIMS Rhode Island and SIMS South Paulina VOM emissions testing events in September 2017 and September 2019, respectively, clearly demonstrate that the use of a temporary enclosure located at the bottom of a hammermill shredder was not adequate to prevent significant amounts of uncaptured VOM emissions from escaping the front/infeed of the shredder.
- There was no attempt to identify or quantify uncaptured VOM emissions escaping the front/infeed of the shredder during recent emissions testing at SIMS Rhode Island or SIMS South Paulina and the resulting VOM emission factors only represent a small unquantified portion of total shredder VOM emissions.
- Given the similarities between these three facilities, the uncontrolled VOM emission factors should be reasonably consistent; however, this was not the case. The General Iron uncontrolled

VOM emission factor was 4.4 times greater than the reported SIMS Rhode Island emission factor and 5.7 times greater than the reported SIMS South Paulina emission factor.

- Given the similarities between these three facilities, the only apparent cause of the significant disparities in VOM emission factors is that the temporary enclosures used by SIMS Rhode Island and SIMS South Paulina did not adequately capture shredder VOM emissions.
- The use of uncontrolled VOM emission factors from SIMS Rhode Island and SIMS South Paulina significantly underestimate shredder emissions.
- Facilities that rely on VOM emission factors from testing at SIMS Rhode Island or SIMS South Paulina may not be in compliance with applicable requirements for control of VOM emissions.
- By relying on the flawed emission factor, the SIMS South Paulina facility is operating out of compliance with Illinois rule 35 IAC 218, Subpart TT, which requires 81% control of VOM emissions.
- By relying on the flawed emission factor, the SIMS East Chicago facility will be operating out of compliance with Indiana rule 326 IAC 8-1-6, which requires a Best Available Control Technology (BACT) analysis for the reduction of VOM emissions.
- If the actual VOM emission factor for SIMS South Paulina is just 11.5% higher than reported, actual annual VOM emissions pursuant to its FESOP application will trigger the requirement to control 81% of VOM emissions pursuant to 35 IAC 218 Subpart TT.
- If the more accurate General Iron VOM emission factor were applied to the SIMS South Paulina facility, the permitted shredder throughput would need to be drastically reduced, to just 97,675 tons per year (tpy) to avoid the requirement to install VOM emissions controls.
- Using General Iron's more accurate VOM emission factor, the actual VOM emissions from the SIMS South Paulina and SIMS East Chicago Indiana facilities will approach **95 and 85 tpy, respectively**.
- The use of VOM, metals, and HAP emission factors that do not account for gross amounts of uncaptured emissions makes it impossible to accurately assess local air quality impacts and may lead to exceedance of applicable air quality standards at SIMS South Paulina, SIMS East Chicago, and any other shredder that uses these factors.
- The reported VOM emission factors from the recent SIMS Rhode Island and SIMS South Paulina testing should not be approved by USEPA or state regulatory agencies for use in permitting or compliance demonstration at other hammermill shredding facilities.
- In the absence of credible site-specific emission factors, USEPA requires the use of other published emission factors, preferably from credible testing performed at a similar facility operated under similar conditions, such as the emission factor from General Iron.

- SIMS South Paulina should be required to use the November 2019 uncontrolled VOM emission factor demonstrated at General Iron (while feeding 50% ELVs) unless testing at South Paulina is repeated and includes methods and procedures to satisfactorily characterize uncaptured VOM emissions from the front/infeed of the shredder.
- The failure to acknowledge uncaptured VOM emissions from the front/infeed of the shredder in the test reports from SIMS Rhode Island and SIMS South Paulina is intentionally misleading to regulatory personnel and results in fundamental inequities in the regulation of hammermill shredders emissions and resulting air quality impacts.



**Evaluation of Shredder VOM Emissions Testing Results -  
SIMS South Paulina, Chicago, Illinois and  
SIMS Johnston, Rhode Island**

**May 6, 2020**

**ATTACHMENT A**

**RKA Detailed Comments on USEPA Site Inspection Reports from  
Shredder VOM Emissions Testing  
SIMS South Paulina – Chicago, Illinois  
September 20, 2019**

## ATTACHMENT A

### RKA Detailed Comments on USEPA Site Inspection Reports from Shredder VOM Emissions Testing at SIMS South Paulina – Chicago, Illinois September 20, 2019

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The following comments are provided regarding the following USEPA Site Inspection Reports written by Vicky Mei of USEPA Region 5 documenting observed conditions from emissions testing performed on September 20, 2019 at SIMS South Paulina. The inspection report also includes numerous videos and photographs taken during testing.

#### **October 8, 2019 Clean Air Act Inspection Report written by Vicky Mei of USEPA Region 5 documenting the results of a site inspection performed on September 20, 2019, to witness shredder emission testing.**

This above Site Inspection Report identifies 4 digital photos, and 34 FLIR videos.

Pg 3 of 7      **Tour Information – Data Collected and Observations:**

*“Visible emissions and emissions imaged via the FLIR camera were seen during all three runs.”*

It is assumed that FLIR images identify VOM.

It is also assumed that the FLIR images refer to the top [front/infeed] of the shredder, although it is not clearly stated in the comment. The titles of a number of the FLIR videos do indicate VOM emissions were seen at the “*top of mill.*”

The above statement in the USEPA Inspection Report indicates that the UMO conveyor enclosure **was not effective at capturing VOM emissions generated by the shredder.**

This also indicates that the reported 98% capture efficiency identified in the Mostardi Platt Test Report could only have been the local capture efficiency of the UMO conveyor enclosure and **not** the overall capture efficiency of VOM generated by the shredder.

*“A significant spike in THC concentration occurred near the end of Run #1, as seen in Video 12 (see Appendix A).”*

This statement does not indicate what caused the observed spike in THC concentration. These spikes at the end of Run #1 and then the presence of significantly more uncaptured emissions at the beginning of Run #2 (visible from viewing videos) indicate that SIMS may have fed higher VOM-containing material (i.e. higher percentage of ELVs) between test runs.

THC may refer to the concentration of THC measured in the UMO conveyor exhaust duct, but Video 12 is titled “*End of sorter chute; emissions seen; during near the end of Run #1 and may be during the 1,000+ ppm THC spike.*”

## ATTACHMENT A

### RKA Detailed Comments on USEPA Site Inspection Reports from Shredder VOM Emissions Testing at SIMS South Paulina – Chicago, Illinois September 20, 2019

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The above statement in the USEPA Inspection Report indicates that the UMO conveyor enclosure **was not effective at capturing VOM emissions generated by the shredder.**

The statement also indicates that the reported 98% capture efficiency identified in the Mostardi Platt Test Report could only have been the local capture efficiency of the UMO conveyor enclosure and **not** the overall capture efficiency of VOM generated by the shredder.

There were 34 FLIR videos identified in the inspection report.

*“During Run #2, significantly more emissions were uncaptured, as seen via FLIR camera, (see Videos #13-21 of Appendix A).”*

With the exception of Video #16, the titles of Videos 13 – 21 all include the words “Top of mill,” and the words “significant amounts of emissions seen” or “emissions seen.”

This statement in the USEPA Inspection Report indicates that the UMO conveyor enclosure **was not effective at capturing VOM emissions generated by the shredder.**

This also indicates that the reported 98% capture efficiency identified in the Mostardi Platt Test Report could only have been the local capture efficiency of the UMO conveyor enclosure and **not** the overall capture efficiency of VOM generated by the shredder.

*“Videos captured during Run #3 showed sporadic spikes in emissions imaged via the FLIR camera.”*

The title of Videos #33 and #34 both include the words “emissions seen.”

This clearly indicates that the UMO conveyor enclosure **was not successful at capturing VOM emissions generated by the shredder.**

This also indicates that the reported 98% capture efficiency identified in the Mostardi Platt Test Report could only have been the local capture efficiency of the UMO conveyor enclosure and **not** the overall capture efficiency of VOM generated by the shredder.



**Evaluation of Shredder VOM Emissions Testing Results -  
SIMS South Paulina, Chicago, Illinois and  
SIMS Johnston, Rhode Island**

**May 6, 2020**

**ATTACHMENT B**

**RKA Comments to USEPA Region 5  
Proposed Metal Shredder Emissions Testing  
Scheduled for the Week of September 2, 2019  
Sims Metal Management Midwest – 2500 S Paulina – Chicago, Illinois  
IEPA ID No.: 03100FFO**





August 30, 2019

Mr. Nathan Frank  
Chief Air Enforcement and Compliance Assurance Section (IL-IN)  
U.S. Environmental Protection Agency Region 5  
77 West Jackson Boulevard  
Chicago, Illinois 60604-3507

e-mailed to  
[nathan.frank@epa.gov](mailto:nathan.frank@epa.gov)

**Comments on Proposed Metal Shredder Emission Testing  
Scheduled for the Week of September 2, 2019  
Sims Metal Management Midwest – 2500 S Paulina – Chicago, Illinois  
IEPA ID No.: 03100FFO**

Dear Mr. Frank:

The following comments were included in an August 2, 2019, letter sent to Ms. Kendra Sutherland of the Indiana Department of Environmental Management (IDEM) in response to the Notice of 30-Day Period for Public Comment on the Preliminary Findings Regarding a New Source Review and Minor Source Operating Permit (MSOP) for Sims Metal Management (SMM) in East Chicago (Lake County), Indiana.

The draft IDEM MSOP and accompanying Technical Support Document (TSD) state that demonstration of compliance with permitted VOC emission limits at the East Chicago facility will rely on metal shredder VOC emission test data from a similar SMM metal shredder at its South Paulina facility in Chicago, Illinois. The TSD identifies that the VOC emissions factor used to limit PTE below the level at which BACT and TBACT requirements would apply, prior to testing at the South Paulina facility, was taken from shredder VOC emissions testing performed at the SMM Johnston, Rhode Island facility in September 2017. Neither the East Chicago, Rhode Island, or South Paulina shredders are equipped with volatile organic compound (VOC) control devices. Metal shredder VOC emission control measures include installation of regenerative thermal oxidizers or similar VOC control technology and/or limiting the quantity and quality of miscellaneous scrap metal and end of life vehicles (ELVs) processed.

As you may be aware, SMM's South Paulina facility is constructing a temporary total enclosure for the purpose of measuring shredder emissions as required by Paragraph 33 of Administrative Consent Order EPA-5-18-113(a)-IL-09. It is our understanding that the emission testing of the metal shredder at South Paulina will be performed during the first week in September 2019, and that a protocol for testing was to be submitted to USEPA no later than 60 days prior to testing.

## **A. Temporary Total Enclosure Criteria Must be Met**

In the absence of VOC control technology, the SMM's South Paulina and East Chicago shredders (and probably others) will rely on VOC emission factors measured by use of a temporary total enclosure. The performance of a temporary total enclosure can significantly impact the accuracy of a measured VOC emission factor. The application of a temporary total enclosure for a metal shredder does not allow for measurement of the actual percent of capture achieved, but only whether or not the enclosure meets specified design and operating criteria. Compliance with these criteria assumes that the enclosure achieves 100% capture of VOC emissions. Failure to adequately and accurately document compliance with these design and operating criteria will result in an unreliable VOC emission factor that may significantly under represent actual VOC emissions.

The potential deficiencies in the application of a temporary total enclosure to a large metal shredder are highlighted in USEPA Site Inspections Reports from a September 2017 shredder emission test at another SMM facility in Johnston Rhode Island (see Attachments A and B). Attachment C to this correspondence presents photos and sketches of the temporary enclosure constructed at the Johnston Rhode Island facility that were included in the Clean Air test report.

The enclosure appears to have been only a partial enclosure constructed over the discharge of the shredder. The information in Attachment C indicates that there was no enclosure provided to capture emissions from the top of the shredder. The attached USEPA Site Inspection Reports state that significant amounts of bluish smoke and opacity were observed exiting from the top of the shredder indicating that the partial enclosure failed to capture a significant amount of shredder emissions. This may have been due to the facility's installation of a 15,000 cfm enclosure exhaust fan, which was only 50% of the capacity (30,000 cfm) initially proposed to the Agency. The Rhode Island shredder testing should have been considered to be a failure due to the presence of significant uncaptured emissions at the top of the shredder. In addition, the test report, a publicly available document, does not specifically identify that the reported VOC emission factor does not represent total shredder emissions. The Rhode Island emission factor has been cited as justification for estimated VOC emissions presented in a permit application for the SMM East Chicago Indiana shredder (and possibly others).

If the temporary enclosure proposed for the South Paulina emission test is similar to the enclosure provided in Rhode Island and does not provide for adequate capture of emissions from the top of the shredder, it is likely to result in unreliable emission data. A significant portion of the water injected into a shredder is flashed to steam due to high temperatures inside the shredder. The rapid rate of expansion of water to steam indicates that adequate capture of emissions at the top of the shredder cannot be achieved without the use of a collection hood over the top of the shredder.

Based on USEPA Site Inspection Reports in Attachments A and B, the proposed testing at the South Paulina facility must clearly demonstrate that emissions from the top of the shredder are adequately captured throughout the duration of the sample collection periods. Failure to provide this demonstration will render the test results meaningless.

## **B. Raw Materials Must Be a Representative Mix**

In order for an emission factor to be applicable to operations at similar facilities, or even future operations at the same facility at which the factor was developed, the equipment operating conditions and raw materials processed must be consistent with those from the cited emission test. The SMM Rhode Island test report did not identify the metrics used by SMM to characterize the miscellaneous scrap metal and condition of ELVs processed during the test, without which, severely limits the applicability of the measured VOC emission factor to other facilities. The application of the SMM Rhode Island VOM emission factor to other facilities, especially in the absence of any other required testing at those other facilities, should not be considered representative without adequate characterization of miscellaneous scrap and condition of ELVs processed.

In the case of scrap metal shredders, the quality of the miscellaneous scrap and the condition of the ELVs processed have the biggest impact on VOC emissions. It is well understood by the metal shredding industry that shredder VOC emission rates are heavily influenced by the number and rate of vehicles shredded and the amount of volatile and VHAP fluids remaining in the vehicles when they are shredded. This factor becomes even more important when a shredder is not equipped with a high-efficiency VOC control device.

Therefore, it is imperative that the test documentation demonstrate that that the mix of the scrap processed during an emission test is representative of the mix of scrap typically received and processed. Gas tanks should not be removed from ELVs prior to shredding (it is our experience that in the Chicago market gas tanks are typically not removed from vehicles prior delivery to a recycling facility). The materials shredded during the emissions test should not be “cherry picked” clean material or stripped out appliances not containing fluids or VOC-containing material (i.e. greases, oils and etc.). At the conclusion of the testing, an authorized facility representative should verify that there were no special steps taken to sort or prepare the materials shredded during the emission test that are not consistent with normal operating practices. This is particularly important for the industry because other shredding facilities will cite the South Paulina test results in emission calculations used for compliance demonstrations and permitting.

## **C. USEPA Observations of the SMM Rhode Island Shredder Emission Testing**

To highlight the above issues, the following comments are provided in Site Inspection Reports prepared by USEPA Region I representatives when witnessing the 2017 evaluation of a temporary total enclosure and subsequent VOC emission test of the SMM metal shredder in Johnston, Rhode Island. The comments presented below identify USEPA observations that likely had a significant impact on the accuracy of the reported VOC emission factor relied upon by IDEM. These observations and limitations were not included in SMM’s test report and thereby were not likely considered by IDEM in the preparation and issuance of the draft MSOP and Technical Support Document for the SMM East Chicago facility.

## USEPA Inspection Reports from the SMM Rhode Island Shredder Emission Testing

- **October 19, 2017 inspection report written by Ms. Christine Sansevero, a USEPA Region I Senior Enforcement Coordinator in the Air Technical Unit (Attachment A).**

### Preparation of Vehicles Prior to Shredding

- + On Page 4 of 10 it states that SMM confirmed that auto suppliers do the depolluting of the vehicles and that SMM does a spot check. The term ‘depolluting’ is not defined. Does this term mean that fluids are removed from vehicles or does it mean the engine, transmissions, gas tanks, and other fluid reservoirs are removed prior shredding?

On page 6 of 10 of Ms. Sansevero’s report, she stated that trucks arriving during testing to deliver autos and light iron were described by SMM as *normal shipments* and that Mr. Rapp of USEPA observed that delivered autos were either crushed cubes or flattened and that “*Some were just chassis or shells without engines.*” There is no data in the test report that identifies the condition of the autos prior to shredding.

On Page 8 of 10, during Runs 2 and 3 conducted on September 18, 2017, Ms. Sansevero wrote that “*Mr. Osbahr (from USEPA) noted that SMM was removing the gas tanks from the autos and then driving over the gas tanks to flatten them. Ms. Sansevero asked about the removal of the gas tanks. During a close out conference, Ms. Sansevero stated that when asked about the removal of the gas tanks, SMM representatives explained that removing the air from the tanks helps minimize what they call “incidents” or fires in the shredder. They further explained that the tanks are shredded after they have been flattened.*”

Neither the SMM Rhode Island test report or the USEPA inspection reports describe how vehicles were depolluted, or what spot checks were performed on the vehicles stockpiled for processing during the emission tests. The test report also does not identify how many of the vehicles shredded during emission testing had engines, transmissions and fluid reservoirs removed or when the removed gas tanks were shredded (during the test or after).

It is not standard practice in the Chicago and NW Indiana markets to remove gas tanks before shredding vehicles. During the SMM South Paulina emission testing, the gas tanks should be left in place and shredded with the vehicles to be representative of normal operating practices.

### Performance of the Temporary Enclosure

- + On Page 5 of 10, the report states that during Test Run 1 on September 15, 2017, *“Mr. Rapp and Ms. Sansevero observed a great deal of visible grayish smoke at the entrance to the shredder. It was not captured by the rubber curtains and seemed as if it was being pushed out of the partial enclosure. It appears as if the 15,000 scfm fan on the front side of the shredder was not sufficient to pull enough air to capture all of the exhaust coming off the shredder.”*

With respect to the above statement, Ms. Sansevero added the following footnote: *“During discussion regarding the testing order, SMM requested that it be allowed to proceed with testing without a Method 204 enclosure. SMM was concerned that it would be difficult, expensive, and create some safety challenges if it were to construct a Method 204 enclosure around the shredder. After much debate, EPA agreed to SMM request to construct a partial enclosure. SMM agreed to meet the face velocity requirements of Method 204. SMM had originally indicated that the fan used during the testing would be a 30,000 scfm fan. However, the test protocol, described a 15,000 scfm. EPA inquired about this change. SMM responded that the 15,000 scfm fan would be sufficient for maintaining a face velocity of 200 feet per minute [sic].”*

On Page 7 of 10, Ms. Sansevero stated that during Run 2 (also on September 15, 2017), *“Mr. Rapp noted bluish gray smoke emanating from the shredder. He and Mr. Mohamoud (also from USEPA) estimated opacity of approximately 40% for many minutes and perhaps as much as 50% at times. They noted an opacity of approximately 20% continuously.”*

Opacity, (i.e., emissions observed escaping the capture system) would also include VOCs, which were not accounted for in the reported test results.

The SMM Rhode Island test report describes that a temporary enclosure (TE) was used as a means of quantifying emissions from the shredder system. The test report (on Page 4), described the TE as follows:

*“Rigid walls could not be used because the structure had to allow for a possible energy release. The TE was constructed consistent with the Test Protocol. Consistent with the Test Protocol and equation 204-3 from USEPA Method 204, CleanAir estimated the facial velocity of the TE prior to testing by measuring gaps between the rubber sheets on the north, west, and south sides of the TE. Clean Air also measured gaps between the TE and the UMO on the north, east, and south sides, as well as between the TE and the outfeed conveyor on the west side of the TE. CleanAir’s diagrams are available in Appendix J. CleanAir then divided the maximum blower rating of 15,000 scfm by the total natural draft openings (NDOs). This resulted in a calculated facial velocity greater than 200 fpm. Prior to*

*beginning the tests, CleanAir used a Shortridge analyzer and hand-held smoke generator to measure flow rates and direction of flow at accessible locations.”*

*“The pressure drop across the TE was monitored and recorded on the TO-15 data sheets during each test run. The sample line used for the pressure drop measurements became clogged during Run 3. This was not discovered until the start of Run 5; therefore, the pressure drops recorded during Runs 3 and 4 yielded non representative and low biased readings. There was an extended delay during Run 5 while the pressure drop sample line was cleared. The average pressure drop reading presented in Table 1-1 only includes Runs 1, 2, 5, and 6. The pressure drop across the TE was found to be >0.007” H<sub>2</sub>O, the minimum required to meet EPA Method 204 criteria.”*

The observation of continuous bluish gray smoke emanating from the shredder at an opacity of 20% or greater, and not being captured by the TE, are certainly not consistent with the statements in the test report that seem to indicate that the TE met Method 204 requirements. In fact, the test report does not provide results of any velocity tests performed across the Natural Draft Openings (NDO) or the TE.

Photos and sketches included in the test report show that the temporary enclosure was only constructed to enclose the discharge of the shredder. The information in Attachment C indicates that there was no enclosure provided to capture emissions from the top of the shredder. However; as described by USEPA observers, this enclosure failed to capture a significant portion of shredder emissions that were observed exiting the top of the shredder. This may have been due to the facility’s installation of an enclosure exhaust fan with a capacity of only 15,000 cfm, which is just half of the fan capacity initially proposed by the facility.

**It is apparent from USEPA’s written site inspection reports that the published SMM Rhode Island shredder VOC emission factor does not represent 100% of VOC emissions generated from the shredder, and in fact, underestimates the actual VOC emissions.**

- **December 6, 2017, Stack Emission Testing Observations written by Mr. William Osbahr, Stack Testing Coordinator (EIA), USEPA (Attachment B).**

Performance of the Temporary Enclosure

- + On Pages 2 and 3 of his report, Mr. Osbahr identifies multiple deficiencies of the TE testing and documentation. These deficiencies included NDO dimensions

that were not accurately measured and the failure to have the proper instrument on site to make face velocity measurements through the NDOs.

On Page 3 of the report, Mr. Osbahr stated that Mr. Rapp, Ms. Sansevero, and Mr. Mohamoud observed opacity coming from the east end NDO.

**The above observations also indicate that the reported SMM Rhode Island shredder VOC emission rates were not representative of total VOC emissions generated from the shredder.**

Based on the above, we respectfully request that the following items be verified during the testing and that documentation be included in the test report for the SMM South Paulina facility.

- Documentation that the mix of scrap processed during the test accurately represents the scrap processed during normal operation, particularly with respect to ELVs and appliances as described herein.
- The test report should include detailed drawings of the temporary total enclosure identifying the location and dimensions of each natural draft opening and a detailed description of how certification of compliance with applicable criteria with USEPA Method 204 were performed during the VOC emission testing.
- The test report must include documentation that VOC and particulate emissions from the top of the shredder are adequately captured by the temporary enclosure so that test results will reflect total shredder VOC emission rates.

If you have any questions please don't hesitate to call me at 630-393-9000 or e-mail me at [jpinion@rka-inc.com](mailto:jpinion@rka-inc.com).

Yours very truly,  
**RK & Associates**



John G. Pinion  
Principal Engineer

cc: Kevin Mattison – IEPA – Des Planes, Illinois – via email





**Comments on  
Proposed Metal Shredder Emission Testing  
Sims Metal Management Midwest  
2500 S Paulina – Chicago, Illinois**

**August 30, 2019**

**ATTACHMENT A**

**USEPA Region I Inspection Report  
Sims Metal Management, Johnston RI  
Written by Christine Sansevero,  
Senior Enforcement Coordinator, Air Technical Unit,  
Dated October 19, 2017**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**  
**Region I - EPA New England**

Drafted Date: 09/22/2017  
Finalized Date: 10/19/2017

**SUBJECT:** Inspection of Sims Metal Management, Johnston RI  
**FROM:** Christine Sansevero, Senior Enforcement Coordinator, Air Technical Unit *CMS 10/19/17*  
**THRU:** Steve Rapp, Unit Chief, Air Technical Unit *SAR 10/19/17*  
**TO:** File

I Facility Information

- A. Facility Name: Sims Metal Management
- B. Facility Location: 15 Green Earth Avenue, Johnston, RI
- C. Facility Mailing Address: Same
- D. Facility Contact: Scott Jacobs, Regional Safety Director
- E. ICIS Air: #4400740070

II Background Information

- A. Date of inspection: September 2017 (6<sup>th</sup>, 15<sup>th</sup>, 18<sup>th</sup>, 20<sup>th</sup>)
- B. US EPA Representative(s): Multiple Day Inspection (see summary chart below)
- C. RIDEM Representative(s): None
- D. Federally Enforceable Regulations:  
Rhode Island Air Pollution Control Regulations as applicable including  
Regulation 9, Air Pollution Permitting

III Purpose of Inspection

The purpose of the visit was to observe potential to emit testing that EPA ordered SMM to conduct. SMM operates a 7000 hp metal shredder to recover metal from scrap light iron and automobiles. EPA is requiring SMM to test emissions from this shredder to quantify emissions of VOC and other pollutants.

IV. Facility Description

A. Facility History:

Sims Metal Management (SMM) owns and operates a 9.5-acre metal processing facility on a Green Earth Avenue in Johnston, Rhode Island that collects and processes ferrous and non-ferrous scrap metals. The facility started construction in October 2012 and went into operation in October 2013. SMM employs 23 people and owns five trucks and several hundred roll offs.

EPA first visited the site on September 5, 2014 to conduct an inspection. At that time, the top of the shredder was open to the air and partial segments of sheet metal existed on only two sides. The shredder was running that day, and the inspectors observed significant opacity and physical pieces of shredded material emanating from the shredder (see photos in the file). EPA issued a 114 testing order to SMM for its Johnston and North Haven locations in April 2015. In September and October 2015, EPA received several complaints about visible emissions coming from SMM's shredder in Johnston. EPA again visited the site in Johnston on October 14, 2016 to conduct an inspection. SMM had added sheet metal segments to surround three sides of the shredder as well as the top. (See photos in file). There is a large gap between the sheet metal on sides and the sheet metal on the top. SMM also has added rubber curtains on the inlet and outlet of the shredder. The curtains do not come all the way to the sheet metal. There is gap between them and the sheet metal. This configuration constitutes a partial enclosure around the shredder.

#### B. Number of Employees and Working Hours

The facility operates one shift a day, five days per week, 52 weeks per year. This shift is typically 12 hours per day from 6 am to 6 pm.

#### C. Process Description

SMM collects ferrous and non-ferrous metals from various different sources such as municipalities, manufacturers, small business and the public. Processing of the scrap materials begins with the loading and conveying of the feed materials into an electrically operated 7,000 horsepower (HP) shredder<sup>1</sup>. The shredded material is then conveyed through various separating mechanisms. Magnetic separators are used to separate the shredded metals. Recovered scrap metals are sold to end-users, such as manufacturers, mills, foundries, secondary smelters, and metal brokers. There is a non-magnetic metal fraction from the waste material ("fluff") which is generally transported to SMM's facility in North Haven, Connecticut for further processing.

#### V. Stack Testing Site Visit

The EPA team visited the site on September 6, September 15, September 18, and September 20. The following table summarize the purpose of the visits as well as the EPA attendees:

---

<sup>1</sup> The prior shredder, which had a 9,000 HP electric motor, failed in April 2017 and was replaced by the current 7,000 HP shredder in May 2017.

Date	Purpose	EPA Attendees
September 6, 2017	Pre-Test Meeting	Christine Sansevero Abdi Mohamoud Bill Osbahr Steve Rapp Tom Olivier
September 15, 2017	Stack Testing – Day 1 (Runs 1 and 2)	Christine Sansevero Abdi Mohamoud Bill Osbahr Steve Rapp Tom Olivier
September 18, 2017	Stack Testing – Day 2 (Runs 3 and 4)	Christine Sansevero Abdi Mohamoud Bill Osbahr
September 20, 2017	Stack Testing – Day 3 (Runs 5 and 6)	Abdi Mohamoud Bill Osbahr

### September 6 – Pre-Test Meeting

The following people from the SMM team attended the pre-test meeting:

Scott Jacobs	SMM	Regional Safety Director
John Sartori	SMM	General Manager
Mr. Brian Sackett	SMM	National Shredder Director
Craig Cunningham	SMM	
Rich Trzupek	Trinity Consultants	
Kristine Davies	Trinity Consultants	
Jon Schaefer	Robinson & Cole	

EPA and SMM officials met in the conference room to discuss the stack testing that was to take place on September 15, 18 and 20. Mr. Trzupek explained that the natural draft opening was achieving a flow of 250 ft/min prior to the modifications the stack test consultant made to the partial enclosure around the shredder. The stack test team had not yet performed flow testing with fan, but they would do so the day before the testing along with cyclonics.

The 10 HP fan is a variable drive fan and you can see the amperage on the cubical. SMM will use a hot wire anemometer and record the amperage every 10 minutes during the test. Mr. Trzupek explained that they can measure pressure drop (“delta P”) when the shredder was off. At Mr. Osbahr’s request, Mr. Trzupek agreed to install a ¼ inch line to measure delta P from inside the enclosure to ambient. This would allow for measurement of delta P when the shredder was on.

The group then walked over to the shredder to observe the partial enclosure, fan, and sample locations. Mr. Osbahr noted that the sample ports need to be in the same plane. SMM agreed to move one of the sample ports prior to testing. Mr. Trzupek confirmed that the day before the testing there would be smoke tubes, delta P measurement and

cyclonics measurement. Mr. Rapp took a number of photos of the sampling location and surroundings.

The group returned to the conference room for further discussion. Mr. Trzupsek confirmed that he would fill out the table that EPA provided to help organize the results of the stack testing. He also explained that the stack test consultant, Clean Air, would be using the lab "Enthalpy" to analyze PM, Metals, and TO-15 results.

Mr. Rapp asked some questions about how the shredded materials would be stockpiled for testing. Mr. Schaefer explained that it is SMM's typical procedure to use its certified truck scale to weigh loads of light iron and autos as they arrive on site. SMM would continue this procedure for the stack testing and set aside sufficient light iron and autos to conduct the stack testing. Mr. Schaefer explained that the piles are segregated for light iron and autos and he explained that SMM planned to have 315 tons of light iron and 315 tons of autos for each one hour run. SMM would also have approximately 10 tons light iron and 10 tons of autos in reserve in the event that more light iron or autos were needed. Mr. Schaefer explained that the loader had the ability to weigh light iron and autos in the field. Mr. Rapp and Mr. Osbahr requested that SMM prepare a written summary of how it would prepare the piles and document their associated weights. In particular, EPA asked SMM to explain how it would ensure that sufficient material would be available for testing as well as how it would account for any excess material after each test run was completed. Mr. Shafer agreed to provide a written summary.

SMM confirmed that its suppliers do the depolluting of the vehicles and SMM does a spot check.

Mr. Osbahr inquired about the leak checks that were required by Method 5 and Method 29. Mr. Trzupsek confirmed that a leak check would be performed at the end of each run. Mr. Osbahr explained that if they don't pass the leak check at the end of the run, they may need to redo that run.

Mr. Osbahr indicated that he would need to be on the stack test platform and at the stack test trailer during testing. Mr. Rapp asked if there would be a place on-site where some members of the EPA team could safely observe the testing. Mr. Jacobs indicated that the inspector shed would be a possible location. SMM would confirm and get back to the EPA team.

### **September 15 – Stack testing – Day 1**

#### Arrival

The EPA team arrived on site at approximately 7:45 am. Mr. Osbahr and Mr. Bobbs came separately and were already on site when the rest of the EPA team arrived. After checking-in at the main building, the team was escorted to the shredder. Mr. Osbahr explained that each run would take place over 60 minutes. The stack test team, Clean Air Engineering, would conduct a port change at 30 minutes to allow for sampling along a horizontal as well as a vertical traverse (as required by Method 1). The stack



test team would also conduct a leak check at the 30-minute mark. Mr. Osbahr also explained that the first stack test run would be 50% autos / 50% light iron. The second run would be 75% autos / 25% light iron.

The following individuals were part of Clean Air Engineering's Stack Test Team:

Colleen Merringer	Sample Train Technician
Christian Young	Sample Train Technician
Bill Ansell	Project Lead
Eric Doak	Sample Recovery Technician

#### Day 1 - Run 1

Ms. Sansevero and Mr. Rapp were then escorted to the inspector shed by Mr. Sackett and Ms. Davies. Mr. Olivier and Mr. Mohamoud stayed back in the maintenance building behind the shredder, but were able to observe the testing from the front side of the shredder. Ms. Sansevero set up the video camera (a Sony Handy Cam #S98971) to record the runs. From the inspector shed, the EPA inspectors had a clear view of the conveyor belt. The EPA inspectors could also see the two cranes with grappling hooks. One was located on the side of the conveyor where autos were stockpiled and the other was located on the side of the conveyor where light iron was stockpiled. The EPA inspectors could see the crane that was moving the light iron onto the conveyor more clearly than they could see the one that was moving the autos.

According to Mr. Sackett, the conveyor had been pre-loaded with light iron and autos from the pre-weighed piles. Ms. Sansevero took two sample videos just to check to see if the camera was working. The shredder started at 9:01 am and Ms. Sansevero started filming. Mr. Rapp began to tally the number of grapples of autos and light iron in his field book. About five minutes later, Mr. Rapp and Ms. Sansevero observed a great deal of visible grayish smoke at the entrance to the shredder. It was not captured by the rubber curtains and seemed as if it was being pushed out of the partial enclosure. It appeared as if the 15,000 scfm fan on the front side of the shredder was not sufficient to pull enough air to capture all of the exhaust coming off the shredder<sup>2</sup>.

Ms. Davies was informed by Mr. Trzupsek via text message that the stack test sampling began at 9:14 am. The stack test team needed to conduct moisture sampling before it could begin the stack test run. Moisture sampling cannot take place until the shredder reaches normal operating conditions, hence the 13-minute delay. The shredder and the

<sup>2</sup> During the discussion regarding the testing order, SMM requested that it be allowed to proceed with testing without a Method 204 enclosure. SMM was concerned that it would be difficult, expensive, and create some safety challenges if it were to construct a Method 204 enclosure around the shredder. After much debate, EPA agreed to SMM's request to construct a partial enclosure. SMM agreed to meet the face velocity requirements of Method 204. SMM had originally indicated the fan used during the testing would be a 30,000 scfm fan. However, the test protocol, described a 15,000 scfm. EPA inquired about this change. SMM responded that the 15,000 scfm fan would be sufficient for maintaining a face velocity of 200 feet per second.

sampling stopped at 9:44 am. The stack test team had completed the first half of Run 1. The shredder started again at 10:01 am. Sampling started at 10:04 am. SMM had to add the pre-weighed extra piles of both light iron and autos to the pile to ensure that there would be enough material to complete the second half of the run. The shredder and the sampling stopped at 10:34 am. The stack test team had completed the first half of Run 2.

Trucks arrived during the testing delivering autos and light iron. Mr. Sackett indicated these were just normal shipments. Mr. Rapp noted that the autos were either crushed cubes or flattened. Some were just chassis or shells without engines.

At the end of the run, Ms. Sansevero inquired about the remaining material on the conveyor belt. She explained that material would need to be weighed along with the left over light iron and autos to determine the total input to the shredder during the run. SMM then ran the conveyor backwards and the material was removed from the conveyor and weighed along with the other pre-weighed material that had not be processed. Mr. Sackett indicated that the loader scale would be used to weigh the unprocessed material.

After the first run was complete, the EPA team and the SMM team came together for a brief discussion at the shredder, near the sampling locations. Mr. Osbahr explained that it was likely they would only need to conduct the moisture testing once, on the first run. He also explained that on subsequent runs, the shredder would run for 3 minutes prior to the start of sampling. Ms. Sansevero explained that it would be important to have accurate total weights of material shredded. Ms. Sansevero went over the need to account for the various piles (starting piles, supplemental piles, material on the conveyor, and left over piles, etc.) with Mr. Schaefer. Mr. Schaefer indicated that SMM would weigh all of this material and provide the weights to EPA.

#### Day 1 – Run 2

The second run was ready to begin around noon. Ms. Sansevero, Mr. Rapp, Mr. Olivier, Mr. Mohamoud, and Mr. Bobbs all returned to the inspector shed to observe the second run. Mr. Schaefer, Mr. Sackett, and Ms. Davies were also present. Mr. Bobbs brought the Forward Looking Infrared (FLIR) camera to take FLIR video from this vantage point.

The shredder started at 12:18 pm. Ms. Sansevero began filming with the video camera. Mr. Bobbs began filming with the FLIR camera and was able to see the presence of hydrocarbons. Mr. Bobbs showed several representatives from SMM his screen on the FLIR camera.

Sampling began at 12:21 pm. The shredder and sampling stopped at 12:51 pm. Ms. Sansevero stopped the camera and checked its settings. She noticed the date and time were not correct. The time was correct but was set for PM instead of AM. She adjusted the camera to the proper date and time. Ms. Sansevero began filming with the video camera. The shredder started for the second half of Run 2 at 1:03 pm. Sampling began at 1:06 pm. The shredder and the sampling stopped at 1:36pm.

Mr. Rapp noted bluish grey smoke emanating from the shredder. He and Mr. Mohamoud estimated opacity of approximately 40% for many minutes and perhaps as much as 50% at times. They noted an opacity of approximately 20% continuously.

The following table summarizes the sampling times for both runs:

Date	Type of Run (Autos/Light Iron)	Run #	Start of Video / Start of Shredder	Start of Sampling	Stop of Shredder / Stop of Sampling	Stop of Video
9/15/17	50/50	Run-1 1 <sup>st</sup> half	9:01 am*	9:14 am	9:44 am	9:51 am
9/15/17	50/50	Run-1 2 <sup>nd</sup> half	10:01 am*	10:04 am	10:34 am	10:36 am
9/15/17	75/25	Run-2 1 <sup>st</sup> half	12:18 pm*	12:21 pm	12:51 pm	12:52 pm
9/15/17	75/25	Run-2 2 <sup>nd</sup> half	1:03 pm	1:06 pm	1:36 pm	1:36 pm

\*note the time stamp on the camera was not set properly for these runs. The time was 12 hours off.

The following table summarizes the number of grapples of autos and light iron that Mr. Rapp noted in his field book for both runs:

Date	Type of Run (Autos/Light Iron)	Run #	# Grapples of Autos	# Grapples of Light Iron
9/15/17	50/50	Run-1	179	200
9/15/17	75/25	Run-2	190	94

Throughout the day, Mr. Rapp took a number of photos of the site including the left over piles of light iron and autos.

### September 18 – Stack testing – Day 2

#### Arrival

Ms. Sansevero and Mr. Mohamoud arrived on site at approximately 7:30 am. Mr. Osbahr arrived shortly thereafter. The EPA team checked in at the main building. Ms. Sansevero inquired about the weights from the first day of stack testing. Mr. Schaefer provided a summary sheet with all the weights as well as copies of the weight tickets. He explained that he planned to send an email with a description of the packet as well as electronic copies the packet. The SMM representatives then escorted the EPA team to the shredder.

#### Day 2 - Run 3 and Run 4



Ms. Sansevero set up the video camera again to record each of the stack test runs. Note that on the second half of Run 3, the camera battery failed. Ms. Sansevero also noted the number of grapples of autos and light iron for each run.

The following table summarizes the sampling times for both runs:

Date	Type of Run (Autos/Light Iron)	Run #	Start of Video / Start of Shredder	Start of Sampling	Stop of Shredder / Stop of Sampling	Stop of Video
9/18/17	50/50	Run-3 1 <sup>st</sup> half	8:36 am	8:39 am	9:09 am	9:11 am
9/18/17	50/50	Run-3 2 <sup>nd</sup> half	9:18 am	9:23 am	9:53 am	9:53 am**
9/18/17	75/25	Run-4 1 <sup>st</sup> half	11:12 am	11:14 am	11:44 am	11:45 am
9/18/17	75/25	Run-4 2 <sup>nd</sup> half	12:01 pm	12:03 pm	12:33 pm	12:33 pm

\*\*note, the battery on the video camera failed at some point during the run.

The following table summarizes the number of grapples of autos and light iron that Ms. Sansevero noted in her field book for both runs:

Date	Type of Run (Autos/Light Iron)	Run #	# Grapples of Autos	# Grapples of Light Iron
9/18/17	50/50	Run-3 1 <sup>st</sup> half	81	97
9/18/17	50/50	Run-3 2 <sup>nd</sup> half	67	120
<i>Total:</i>			<i>148</i>	<i>217</i>
9/18/17	75/25	Run-4 1 <sup>st</sup> half	111	36
9/18/17	75/25	Run-4 2 <sup>nd</sup> half	86	72
<i>Total:</i>			<i>197</i>	<i>108</i>

Ms. Sansevero also took a number of photos of the left over light iron and auto piles.

Mr. Osbahr noted that SMM was removing the gas tanks from the autos and then driving over the gas tanks to flatten them.

After the stack testing was complete, the group returned to the main building for a brief close out conference.

Ms. Sansevero asked about the removal of the gas tanks. SMM representatives explained that removing the air from the tanks helps minimize what they call

“incidents” or fires in the shredder. They further explained that the tanks are shredded after they have been flattened.

Mr. Osbahr reported that the glass sample line broke when it was removed during the second half of Run 4. He noted that there were quite a few hairs/fibers on the nozzle and that anything that breaks the plane of the nozzle is PM. If PM is on the nozzle it is not being measured, biasing PM and metals results low. Mr. Osbahr showed the group the photo he took of the nozzle. The SMM representatives indicated that the cyclone would normally pull the PM from the shredder but that the partial enclosure that was constructed for the testing modifies the effect of the cyclone.

**September 20 – Stack testing – Day 3**

Mr. Mohamoud and Mr. Osbahr were on-site for the stack testing. Mr. Mohamoud used the Sony Handy Cam #S98971 to record Run 5, and a Cannon Power Shot #S98752 to record Run 6. Mr. Mohamoud also took some still photos of the left over piles of autos and light iron.

Mr. Mohamoud was not able to record the full length of each run. The following table summarizes Mr. Mohamoud’s video log:

<b>Date</b>	<b>Type of Run (Autos/ Light Iron)</b>	<b>Run #</b>	<b>Start of Video</b>	<b>Stop of Video</b>
9/20/17	50/50	Run-5 1 <sup>st</sup> half	11:07 am	11:34 am
9/20/17	50/50	Run-5 2 <sup>nd</sup> half	11:47 am	12:21 pm
9/20/17	75/25	Run-6 1 <sup>st</sup> half	1:44 pm	2:15 pm
9/20/17	75/25	Run-6 2 <sup>nd</sup> half	2:56 pm	3:34 pm

Mr. Osbahr recorded the start and stop times of the sampling:

<b>Date</b>	<b>Type of Run (Autos/ Light Iron)</b>	<b>Run #</b>	<b>Start of Sampling</b>	<b>Stop of Sampling</b>
9/20/17	50/50	Run-5 1 <sup>st</sup> half	11:10 am	11:34 am
9/20/17	50/50	Run-5 2 <sup>nd</sup> half	11:50 am	12:20 pm
9/20/17	75/25	Run-6 1 <sup>st</sup> half	1:44 pm	2:15 pm
9/20/17	75/25	Run-6 2 <sup>nd</sup> half	3:03 pm	3:33 pm

The following table summarizes the number of grapples of autos and light iron that Ms. Mohamoud noted in his field book:

<b>Date</b>	<b>Type of Run (Autos/Light Iron)</b>	<b>Run #</b>	<b># Grapples of Autos</b>	<b># Grapples of Light Iron</b>
9/20/17	50/50	Run-5 1 <sup>st</sup> half	86	68
9/20/17	50/50	Run-5 2 <sup>nd</sup> half	100	86
<i>Total:</i>			<i>186</i>	<i>154</i>
9/20/17	75/25	Run-6 1 <sup>st</sup> half	107	96
9/20/17	75/25	Run-6 2 <sup>nd</sup> half	57	23
<i>Total:</i>			<i>164</i>	<i>119</i>

Mr. Osbahr called Ms. Sansevero after the testing on Day 3 was complete. He reported that Run 6 had failed the leak check. This would adversely affect the PM and metals data from that run. The hydrocarbon data appeared to be acceptable, but the PM and metals data were not. Given this, Ms. Sansevero, Mr. Rapp and Mr. Osbahr decided it was not necessary for SMM to conduct another run. However, the PM and metals data for Day 3, Run 6 (75% autos / 25% light iron), would not be averaged with the results from the other runs.

**Comments on  
Proposed Metal Shredder Emission Testing  
Sims Metal Management Midwest  
2500 S Paulina – Chicago, Illinois**

**August 30, 2019**

**ATTACHMENT B**

**USEPA Region I Inspection Report  
Sims Metal Management, Johnston RI  
Written by William Osbahr  
Stack Testing Coordinator (EIA)  
Dated December 6, 2017**

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
New England Regional Laboratory  
Office of Environmental Measurement and Evaluation  
11 Technology Drive, North Chelmsford, MA 01863**

**Report Memorandum**

**Date:** 12/6/17  
**Subject:** Stack Emission Testing Observations – SMM  
**From:** *William Osbahr*  
 William Osbahr, Stack Testing Coordinator (EIA)  
**Through:** Jerry Keefe, Team Leader (EIA) *Jerry Keefe*  
**To:** Christine Sansevero, Senior Enforcement Coordinator Inspector (OES)

**Facility Information**

- A. Facility Name: Sims Metal Management
- B. Facility Location: 15-17 Green Earth Drive Johnston, RI 02919
- C. Facility Contact: Joseph Caruso, Operations Manager
- D. ICIS-Air #: RI0000004400740070

**Background Information**

- A. Date of inspection: 9/6/17, 9/15/17, 9/18/17, 9/20/17
- B. US EPA Representative(s): William Osbahr, Abdi Mohamoud, (9/6, 9/15, 9/18, 9/20), Christine Sansevero (9/6, 9/15, 9/18) Nicholas Bobbs (9/6, 9/15), Steve Rapp (9/6, 9/15), Tom Olivier (9/6, 9/15)
- C. Federally Enforceable Requirements Investigated:  
 - Rhode Island Regulation 9

**Attendees**

Scott Jacobs	SMM	Regional Safety Director
John Sartori	SMM	General Manager
Brian Sackett	SMM	National Shredder Director
Rich Trzupke	Trinity Consultants	
Kristine Davies	Trinity Consultants	
Jon Schaefer	Robinson & Cole	
William Ansell	CAE	Stack Test Lead
Eric Doak	CAE	Sample Recovery Tech
Colleen Merringer	CAE	Sample Train Tech
Christian Young	CAE	Sample Train Tech

*Conan W/O  
12/6/17  
EIA*      *JK  
12/6/17  
EIA*

## **Test Observation Notes**

The purpose of the visit was to observe potential to emit testing that EPA ordered to conduct. SMM operates a 7000 hp metal shredder to recover metal from scrap light iron and automobiles. EPA is requiring SMM to test emissions from this shredder to quantify emissions of VOC and other pollutants.

During the September 6, 2017 pre-test visit, Rich Trzupsek agreed to supply the following for the emissions test:

1. A sketch of the enclosure and its Natural Draft Openings (NDOs) with dimensions;
2. A table including NDO to Enclosure Area Ratio (NEAR) calculation;
3. Hot wire anemometer monitoring data for all NDOs or assorted openings in the enclosure;
4. Enclosure fan amperage recording data;
5. Cyclonic flows; and
6. Change in Pressure (Delta P) monitoring of the enclosure pressure vs ambient pressure.

### **Sketch and Dimensions of the Enclosure**

On September 14, 2017, Mr. Osbahr was informed by Mr. Bill Ansell, Clean Air Engineering (CAE) project manager that a full sketch of the enclosure had not been completed. He informed Mr. Osbahr that several enclosure and NDO dimensions were still not accurately measured and NEAR calculations were not fully and properly confirmed. For example, Mr. Ansell stated that for an entry slot on the east side of the enclosure he only was "informed by SMM" that the approximate dimensions were 7' by 2'. Accordingly, he used these approximate dimensions in his "draft" calculation spreadsheet. Mr. Osbahr stated that SMM and/or CAE would need to provide a full sketch after proper measurements were documented.<sup>1</sup>

### **No Hot Wire Anemometer**

Also, on September 14, 2017, Mr Osbahr was informed by Mr. Trzupsek and Mr. Ansell that no Hot Wire Anemometer (HWA) was onsite for the emissions test. Mr. Ansell stated that CAE had not planned to actually measure face velocity at the NDO locations for this test effort. Mr. Osbahr informed both Mr. Ansell and Mr. Trzupsek that this had been discussed during the pre-test visit and that EPA, SMM, and Trinity had agreed to this approach. In addition, Mr. Osbahr reminded Mr. Ansell and Mr. Trzupsek that the need for a HWA at this event was again discussed when the three had spoken on the phone after the pre-test meeting.

Mr. Ansell stated that he would use a Shortridge analyzer to measure the Delta P of the enclosure. He stated that he could use it as a velocity measurement device at some of the enclosure locations. Mr. Osbahr explained that while the Shortridge has the capability to measure velocities, it does not measure SMM's NDO faces as well as a HWA would. Mr. Osbahr stated that it would not be as effective or versatile as an HWA for enclosure review. A HWA has an articulating and telescoping head, which is needed for measuring such a large enclosure. In addition, Mr. Osbahr stated that the Shortridge would not be able to measure face velocities of the NDO on the east side of the enclosure. That location was inaccessible. Due to the large size of this NDO, it is critical to verify velocity and direction of flow. The Shortridge would not be an effective tool for this analysis.

---

<sup>1</sup> Note that to date, EPA does not have a copy of this sketch with enclosure measurements.



Mr. Osbahr noted that the east side NDO would not be able to be viewed directly during the emissions test from the test platform and trailer area. Mr. Osbahr was informed that the east end NDO was approximately 2' by 7'. Mr. Osbahr noted that this critical NDO could not be evaluated with an air flow velocity device or visually from the test platform during the actual test. Without properly demonstrating velocities, there would be the potential for the East end NDO emissions to go undetected.

On September 14, 2017 Mr. Ansell performed a few face velocity measurements on cracks in the enclosure curtains. The Shortridge read 220-460 fpm. These measurements were only on the west and south west corner of the enclosure flaps which were easily accessible. Shortridge velocity readings were taken at the bottom of the west end of the enclosure in the area where SMM had extended their flap covers down a few inches lower since tightening up the enclosure. Shortridge readings were taken at a few of the vertical cracks that exist between the gaps of the hanging enclosure flaps. Full access to other locations was not available. The Shortridge analyzer used by Mr. Ansell was not versatile enough to access other gap locations. This resulted in a very limited enclosure verification prior to the emissions test. This is contrary to what had been proposed by SMM and Trinity during the September 6, 2017, pre-test meeting, as well at the subsequent conference call.

On the first day of testing, Mr. Rapp, Ms. Sansevero, and Mr. Mohamoud were on site to observe the testing. They observed the testing from the operator's shed on the conveyor side of the shredder building. From there, they were able to see opacity coming from the East end NDO. Mr. Bobbs was able to take FLIR video as well. However, EPA is not able to quantify these emissions.

#### **Broken Glass Nozzles for Method 5/29 Sample Train**

On September 15, 2017, at 12:55, during Run #2, stack technician Mr. Christian Young removed the sample probe after the first half of the 60-minute sample run. He completed a leak check to verify integrity of the sample train. At that point, it passed leak check requirements under the standard and was witnessed by Mr. Osbahr. When moving the probe to the other sample port, Mr. Young accidentally hit the glass nozzle tip into the stack flange and it shattered. Mr. Osbahr allowed the stack test team to immediately replace the broken nozzle with one of the same size (Nozzle diameter was .200 in diameter). After passing a pre run leak check, testing resumed. The sample train passed the post run leak check. The lack of recovery of the nozzle from the first half of the run could bias the PM and Metals result lower.

After the run was completed, Mr. Osbahr observed that the second .200 in dia nozzle had chips and nicks in it. Mr. Osbahr required CAE to change out this nozzle. CAE consequently needed to switch to a .210 in diameter series nozzle set. Isokinetics were not adversely effected as demonstrated later in the test series.

On September 18, 2017, at the end of Run #4, CAE technicians removed the Method 5/29 sample train and again plunged the glass nozzle into the outside flange breaking the nozzle. Mr. Osbahr allowed the leak check to be performed from the glass liner back through the impingers. The remaining sample train passed the leak check requirements. Again, in this instance, the effect of such event could bias the Metals and PM emissions collection lower due to lost sample matter not recovered in the nozzle.



On September 20, 2017, during Run #6, CAE failed the final leak check for the Method 5/29 sample train. This called in to question the metals and PM data that were collected during that run. However, the T015 and Method 25A data from Run #6 were acceptable. Mr. Osbahr contacted Ms. Sansevero and Mr. Rapp by cell phone. They agreed that, given the leak check failure, EPA would reject the run for Metals and PM and it would not be included in the 3 run average. Mr. Osbahr informed SMM, Trinity, and CAE representatives of this decision.

**Air Bag Canister Combusting on the Ground**

On September 15, Mr. Osbahr witnessed SMM employee use a water cannon to extinguish a burning air bag canister on the ground near the final shredded metal stock area.

**Enclosure Exhaust Stack Plume**

Throughout the 3 days of testing Mr. Osbahr notice frequent high steam and particulate laden streams emanating from the stack exhaust. Mr. Osbahr took photographic videos camera of emissions emanating from the enclosure during assorted runs. Mr. Bobbs took FLIR videos. Both sets of videos and all photos will be retained on the EPA Q Drive under Air Enforcement Secure Photo/Video File section.

**Enclosure Exhaust Outlet Screen Status**

On the afternoon of September 18, 2017, Mr. Osbahr was informed by CAE technicians that an exhaust screen at the outlet of the enclosure blower motor had been removed by SMM prior to that day's testing. Mr. Osbahr questioned Mr. Joseph Caruso, operating manager regarding the screen removal. Mr. Caruso stated that Trinity or CAE had informed SMM that flows had dropped down after a period of time on September 15, 2017. SMM made a decision on September 16, 2017, over the weekend, to remove the screen. This would avoid any flow restriction due to a clogged screen. Mr. Osbahr reviewed draft CAE data for flow runs and saw that the flow had dropped off from the pretest flow rates as listed below. Flow rates likely dropped off as a result of PM collecting on the screen, which would cause a restriction. Note that fan amperage was recorded throughout the 3 days of testing and amperage was reasonably steady. See approximate flow in table below:

Date	Run	Flow Rate (ACFM) <sup>2</sup>
9/14/17	Prelim	13.7
9/15/17	1	13.3
9/15/17	2	11.75
9/16/17	*****	Exhaust screen taken out on Saturday 9/16/17
9/18/17	4	14.1
9/18/17	4	14.8

**Delta Pressure issues in enclosure**

On September 15, 2017, at the start of the test, Mr. Osbahr informed Mr. Trzupek and the CAE crew of Mr. Ansell, Mr. Young and Ms. Colleen Merringer that throughout the test they should pay close

<sup>2</sup> Draft data for reference only.

attention to the enclosure Delta P. Mr. Osbahr explained that any changes in Delta P in the enclosure could be an indication of lost capture efficiency, ineffective enclosure operations, fan problems or possible pressure monitoring issues.

On September 20, 2017, at 9:03 am, just five minutes into the start of Run #5, Mr. Osbahr noted an extremely low Delta P reading from the Shortridge analyzer. Readings were fluctuating from low to positive Delta P. Mr. Osbahr immediately requested CAE halt the run and determine if there were issues with the enclosure or the monitor. SMM and CAE performed diagnosis on the pressure line leading from the enclosure. That line appeared to be clogged inside the enclosure. A repair was made to the line. The clogged portion of the ¼ line was cut out of the system. As a precaution, a Nalgene bottle shroud with multiple ¼ in holes in it was installed over the Delta P sample inlet location. It was installed to protect the inlet from future particulate matter contamination and possible condensate clogging due to the constant presence of steam. Test run #5 resumed at 11:10 am. Note, that the total time for Run #5 consists of the first 5 minutes from 8:58 am through 9:03 am (prior to the Delta P issue) plus the run times from 11:10 through 3:33 pm.

As Run #5 continued, Mr. Osbahr noted fluctuations in the Delta P. Testing occurred during a strong rainy northeast wind, due to the effects of Tropical storm Jose off the coast of RI. Mr. Osbahr noted that wind fluctuations caused the flexible enclosure panels to waft in and out. Such conditions cause an increase area of NDO's that exist at the bottom of the flaps as well as gaps between the flaps. Increase in NDO gaps cause a decrease in Delta P and can reduce overall capture efficiency for the NDO. This can result in an increase in emissions from all NDO locations of the enclosure.

### **PM/Metals Sampling Observations**

At the end of the first run, before performing train leak checks, Mr. Young removed particulate matter from the external PM/Metals sample nozzle tip area. He did so immediately after he removed the sample from the port, before allowing proper discussion with EPA on the matter. There was a substantial amount of fabric fibers and other particulate matter that had accumulated at the nozzle tip during the sampling run. He did not recover this portion of the sample for analysis. It is unclear as to whether the material removed from the nozzle should be included in the sample catch analysis. Some of the external catch could be clogged outside the nozzle break plane, while some of the clog could have been inside the nozzle break plane. It was not possible to determine with accuracy how much PM/Metals were contained in the clog discarded by CAE. It is also not possible to determine how much more PM/Metals would have reached the sample catch if the nozzle had not been covered with the discarded fibrous material during the run. The accumulation of fibrous material could serve as an external filter at the nozzle entrance point. This might impede the ability of some PM/Metals to be captured and included in the overall emissions calculation. This fibrous material is characteristic of this high PM sample stream. The duct for the enclosure was an extremely moist and high PM laden stream. The screen exhaust screen clogging issue mentioned in this document are further evidence of the extreme amount of PM seen during the enclosure operations.

For all subsequent runs, to keep consistency, Mr. Osbahr allowed the removal of the external clog of material in each run. It should be noted that this could result in a lower bias in the overall PM/Metals

emissions results for the test period. Mr. Osbahr discussed the impact that the discarded clog of PM/Metals might have on emissions estimates at the closing interview with SMM and Trinity. Mr. Trzupek stated that the PM/Metals results could likely have been much higher in the captured stream due to the enclosure capturing and conveying PM/Metals that would normally have left the shredder area and settled on the ground of the SMM property. Mr. Osbahr stated that the discarding of the sample clog could result in a low PM/Metals bias.

It is also important to note that SMM has no particulate controls for this captured stream. SMM does not have a scrubber, cyclone, filter baghouse or any other sort of PM control on the duct leaving the enclosure. This was an atypically wet, steam laden, particulate laden sample stream that had no prior emissions measurements performed.

At the start of PM/Metals testing, Mr. Osbahr informed the complete crew of CAE that they should watch any gradual or immediate changes in their vacuum pressures of the sampling train to be aware of plugging in the sample lines or even the flow pitot tubes. Vacuum readings during the test runs did not indicate sample line restrictions that would be cause for stopping any of the sampling runs. However, that does not quantify or diminish in any way the effect of the discarded clog that existed at the end of each run.

#### **Flow Measurement**

As mentioned in this document, the SMM sample stream is extremely wet and steam laden. During the sample runs Mr. Osbahr recommended that CAE use compressed air to blow out the pitot tubes frequently during the run to keep the pitot lines clear and allow for accurate readings. SMM ran a compressed air line up to the stack platform. Ms. Merringer was able to continually blow out the pitot lines with compressed air. Throughout the test, no pitot leak checks failed during QA checks at the end of the runs.

**Comments on  
Proposed Metal Shredder Emission Testing  
Sims Metal Management Midwest  
2500 S Paulina – Chicago, Illinois**

**August 30, 2019**

**ATTACHMENT C**

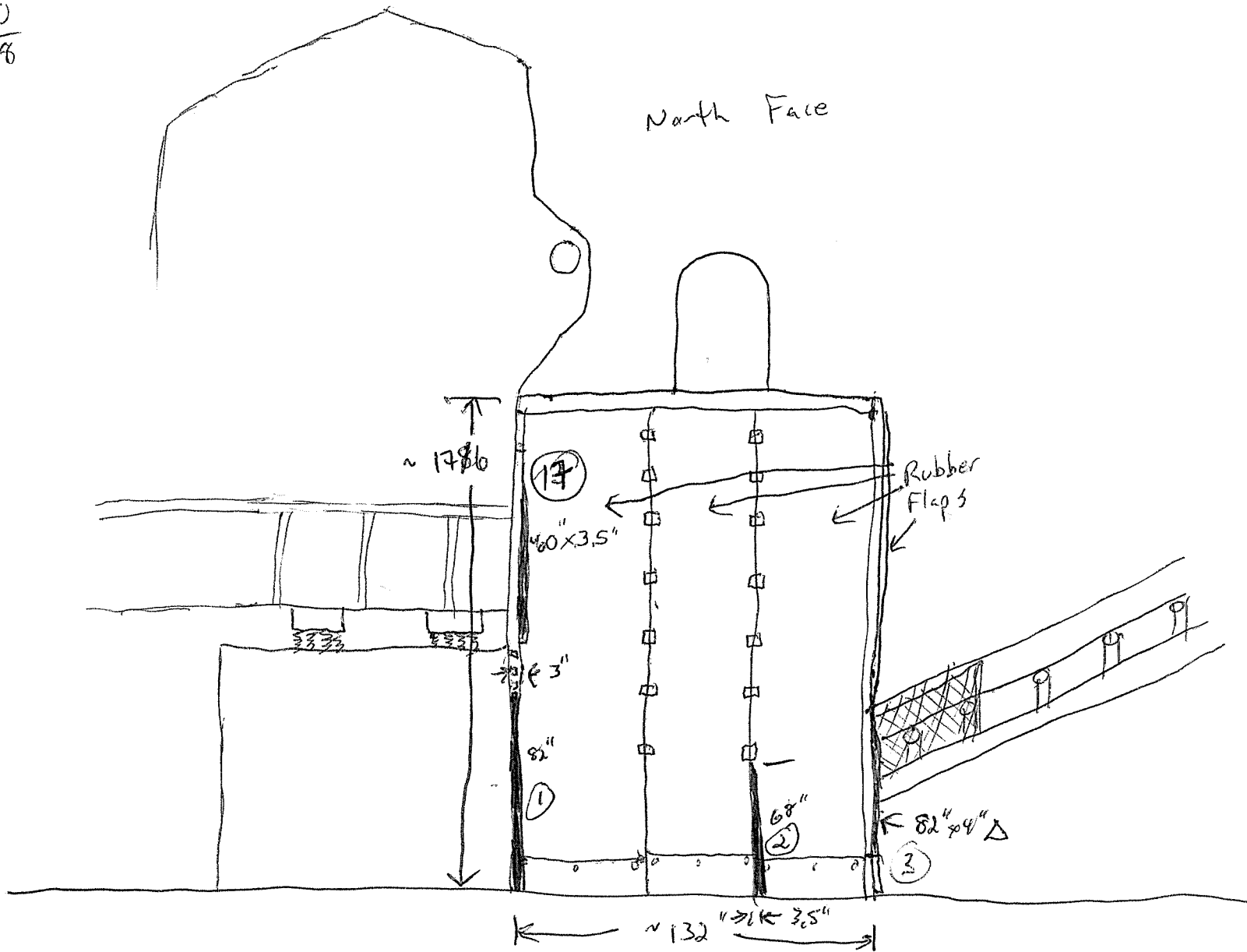
**Appendix J – Enclosure Drawings and Pictures  
from the  
CleanAir Report on Metal Shredder Emission Testing  
SMM New England Corporation  
December 4, 2018**

## APPENDIX J: ENCLOSURE DRAWINGS AND PICTURES

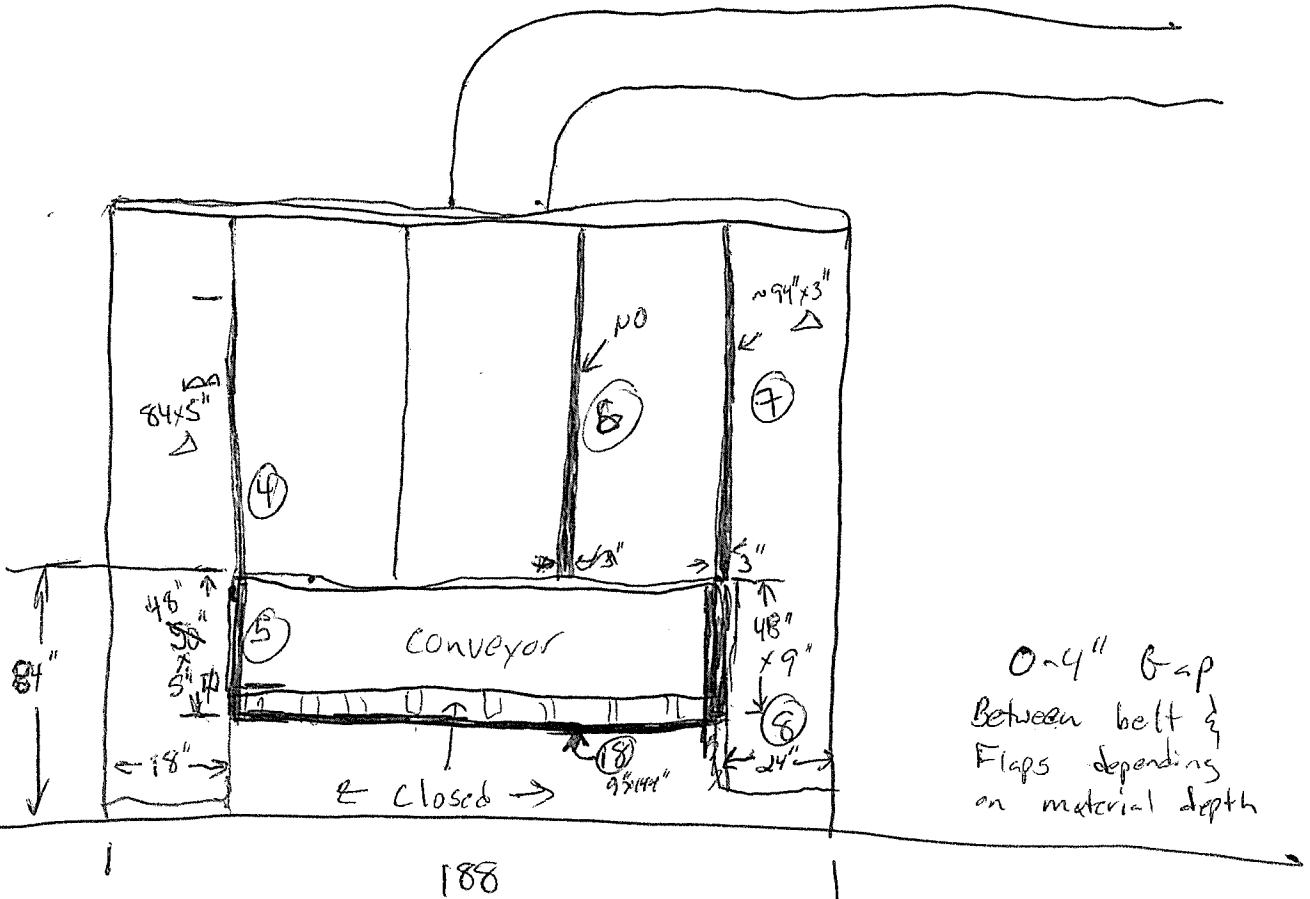


238  
60  
178

North Face



West Face  
 Conveyor side

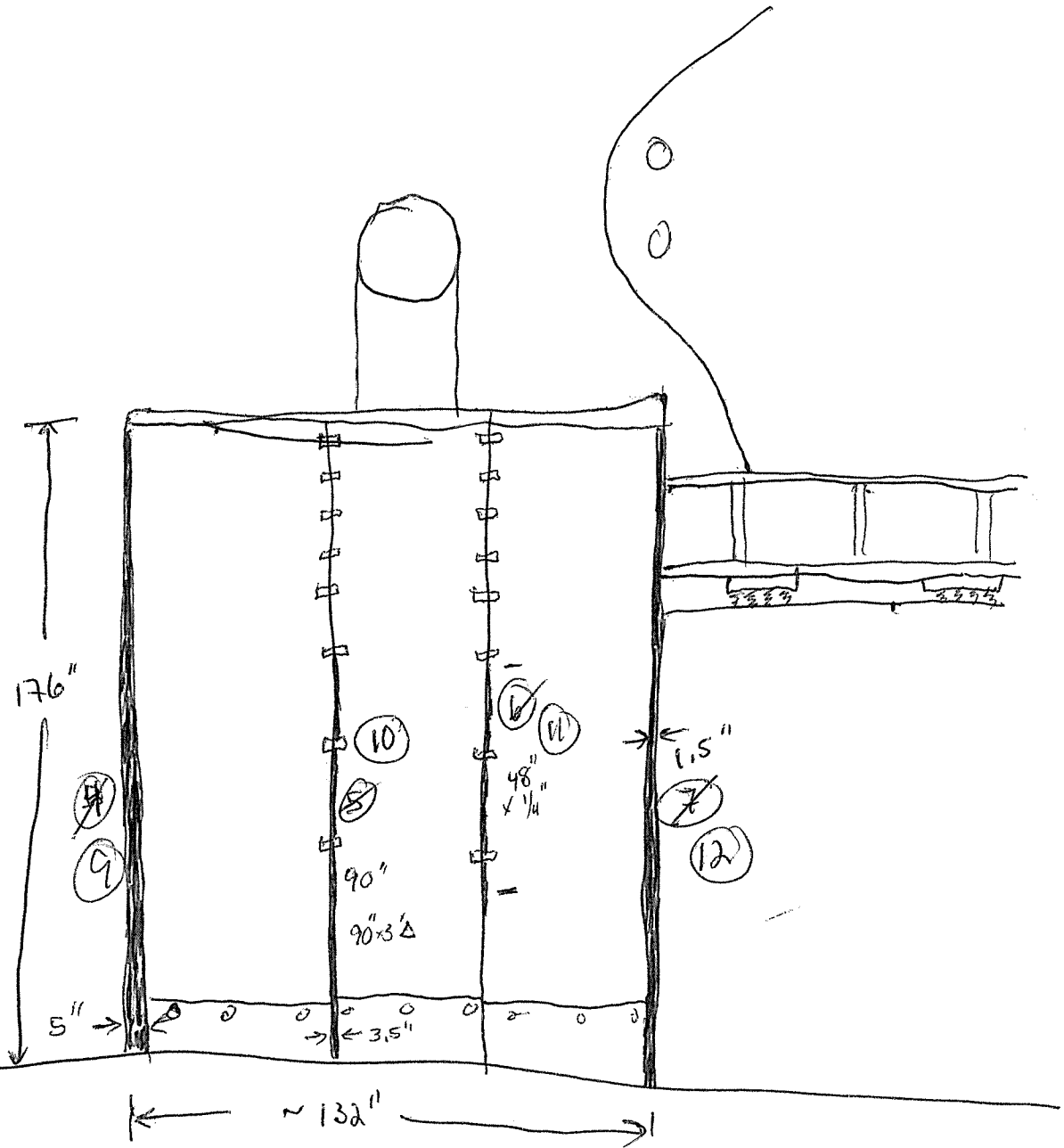


0-4" Gap  
 Between belt &  
 Flaps depending  
 on material depth

178  
 34  
 94

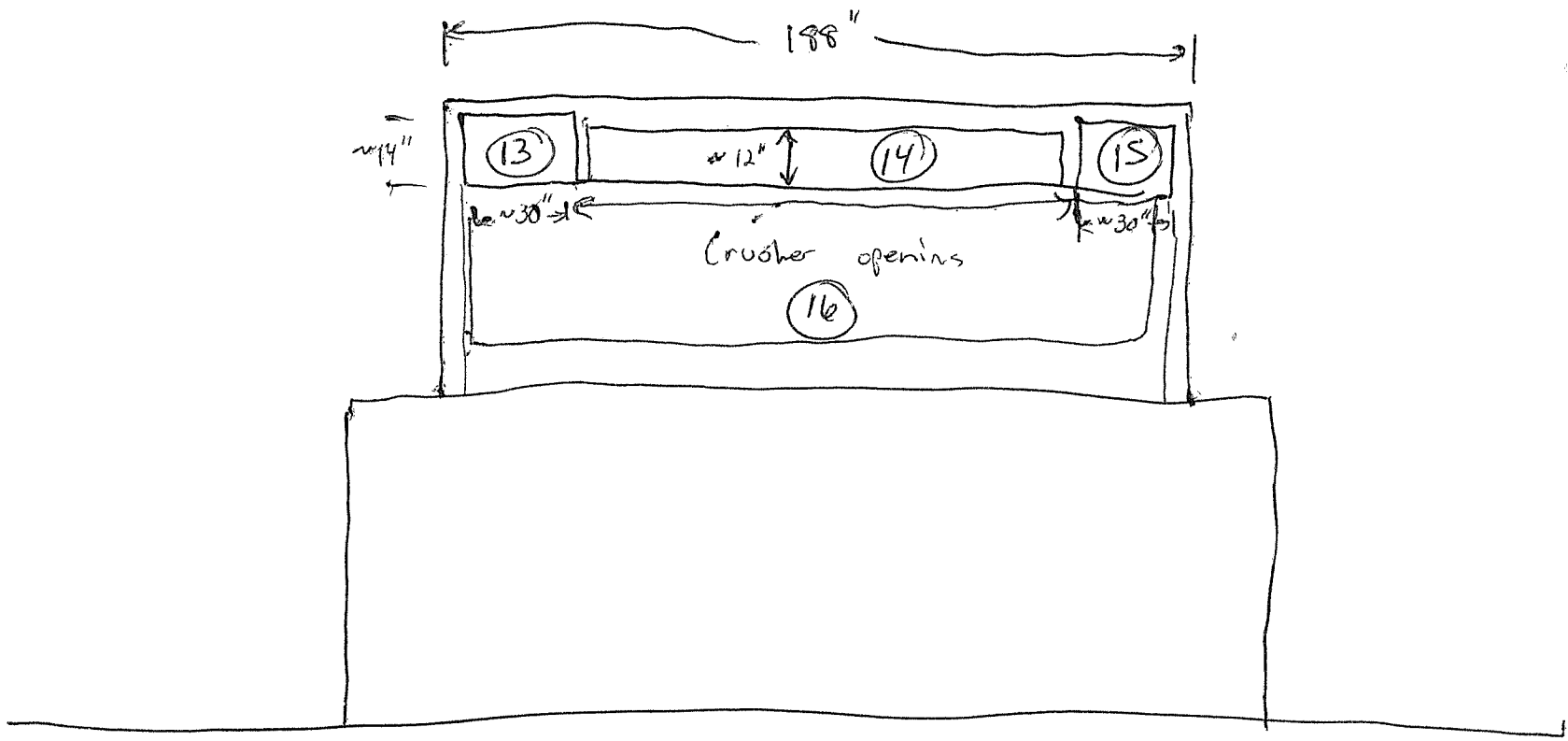
188

South side



J-5

J-6











C-201

4  
DANGER  
DO NOT ENTER  
UNLESS YOU  
ARE AUTHORIZED

C-7













OUT





OCT  
100





C-12



1/10 Board #2

SH-1000





C-14



APPENDIX E

Mar 9, 2023 at 1:24:11 PM





Mar 9, 2023 at 1:25:04 PM





Mar 9, 2023 at 1:25:17 PM





## APPENDIX F



[Press Releases](#)

October 22, 2021

### ATTORNEY GENERAL RAOUL FILES LAWSUIT AND INTERIM ORDER AGAINST SIMS METAL MANAGEMENT

**Chicago** — Attorney General Kwame Raoul today announced a lawsuit against Metal Management Midwest Inc. d/b/a Sims Metal Management (Sims) for failing to demonstrate a minimum threshold reduction in uncontrolled emissions from the company's metal shredding and recycling facility. Raoul also announced that the court entered an agreed interim order that requires Sims to develop and implement a control system designed to achieve an immediate overall reduction in uncontrolled emissions.

"Sims' actions created a public health risk by exposing the community to uncontrolled emissions from its facility," Raoul said. "We have seen the damage these actions can cause in environmental justice communities, and I am committed to holding Sims accountable for endangering public health and will work to ensure they comply with emissions reductions requirements."

[Raoul's lawsuit](#) is based on a referral from the Illinois Environmental Protection Agency (IEPA).

"Based upon results from testing called for by the Illinois EPA, this matter was referred to the Attorney General's office to ensure that protections be put into place to address emissions concerns," said Illinois EPA Director John Kim. "The location of this facility in an environmental justice community reinforces the need for careful oversight of pollution sources such as this."

Sims owns and operates a metal shredding and recycling facility located in the Little Village neighborhood in Chicago. Sims receives, stores, recycles and ships ferrous and non-ferrous recyclable metallic materials at its facility, including end-of-life vehicles, major appliances and other post-consumer sheet metal and metal clips. These materials are processed through a hammermill shredder that emits volatile organic material (VOM) into the environment. On Jan. 22, 2019, Sims submitted an application for a Federally Enforceable State Operating Permit (FESOP) to the IEPA, as required by a previously entered administrative consent order with the United States Environmental Protection Agency. As part of its review of the application, the IEPA requested a copy of emissions testing results also required by the previously entered federal order. Based on a review of those results, the IEPA requested Sims initiate additional testing, with proof-of-concept emissions capture test on the shredder on May 13 to 14, 2021.

In the lawsuit, filed in Cook County Circuit Court, Raoul alleges that the results of the May 2021 emissions capture test revealed the shredder was achieving less than 50% estimated capture efficiency, which was below mandated emissions control requirements of at least 81%. Raoul argues that by failing to demonstrate an overall reduction in VOM emissions, Sims violated the Illinois Environmental Protection Act and Illinois Pollution Control Board Air Pollution Regulations, and jeopardized public health and the environment. Sims' facility is located in an area designated by the IEPA as an area of environmental justice concern because it is a community with a percentage of low income and/or minority residents that is greater than twice the statewide average.

[The agreed interim](#) order, entered today, requires Sims to develop and implement a control system designed to achieve an overall reduction in uncontrolled VOM emissions of at least 81% from the shredder at the facility. Sims also will be required to construct a control system to achieve emissions reduction compliance, as approved by the IEPA and continue to conduct emissions testing following construction to ensure uncontrolled emissions are reduced by at least 81%.

Assistant Attorneys General Arlene Haas and Daniel Robertson are handling the case for Raoul's Environmental Enforcement Division.

[Return to October 2021 Press Releases](#)



## Public Comments on Metal Management Midwest, Inc. Application for a Large Recycling Permit

John Pinion <jpinion@rka-inc.com>

Sat 2/26/2022 5:53 PM

To: envcomments <envcomments@cityofchicago.org>

📎 1 attachments (2 MB)

2021-12 SIMS IEPA Construction Permit Application.pdf;

[Warning: External email]



Dear Mayor Lightfoot and Chicago Dept. of Public Health:

In an effort to protect the people of Pilsen and ensure fairness and equity, CDPH should request that the permit application address the same questions that were asked of RMG for the Southside Recycling facility including, but not limited to, the following:

1. Air dispersion modeling should include detailed accounting and modeling of emissions from all processes, vehicle travel over paved and unpaved surfaces, material storage and staging piles, non-road diesel engines, and torch or plasma cutting. The air quality assessment should also include a percent-silt and metals analysis for all unpaved surfaces and stockpiles.
2. Address whether post-processed ASR ("auto fluff") is treated prior to disposal. Should treatment of the post-processed ASR ("auto fluff") become necessary or desired, the application process should be described including where the process would be conducted, the stabilizing-chemical name(s) and their application quantities, personal protective equipment ("PPE") requirements, and copies of all SDSs.
3. Drawings should be provided of the shredder and shredder emissions capture hood in plan, elevation, and isometric views, that make clear any and all openings where emissions may escape without treatment. Calculations should be provided on the estimated capture efficiency of the shredder exhaust capture system, including sizing calculations for all fans, blowers, ducting systems, and hood. The shredder emissions capture hood is referenced in a permit application submitted to Illinois EPA.

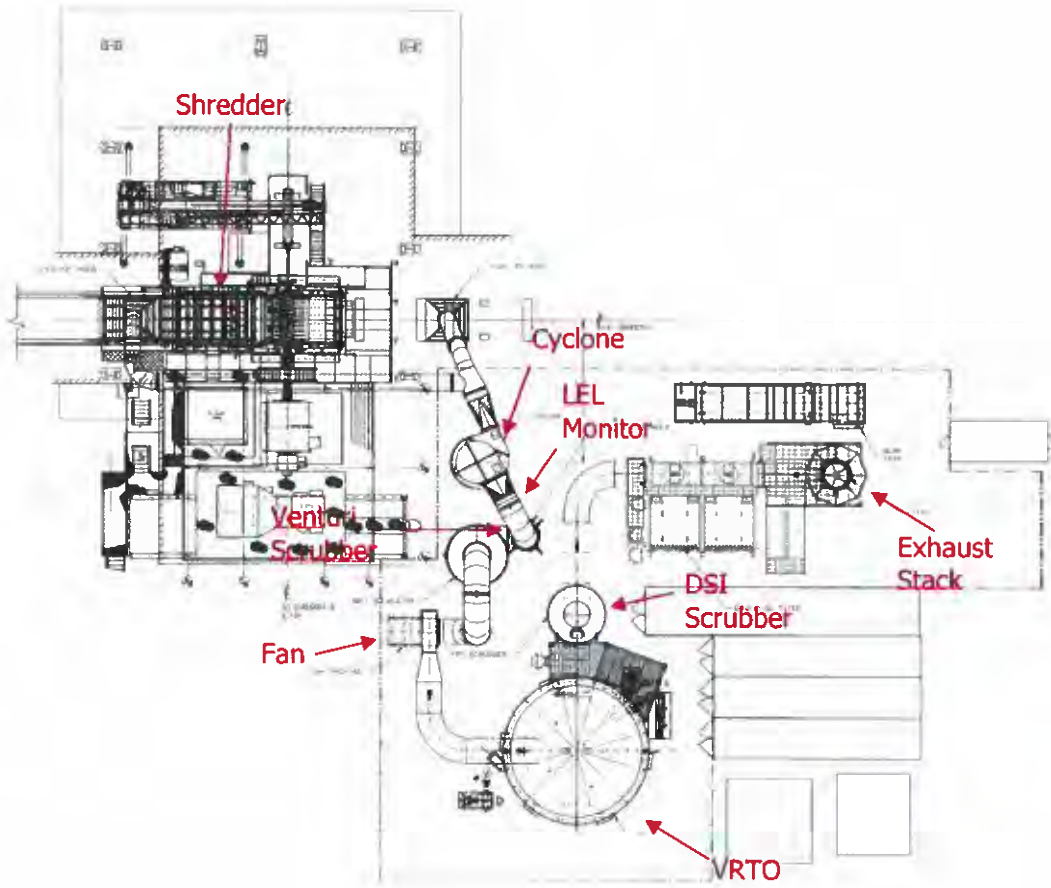
If you have any questions, please do not hesitate to contact me.

**Regards,**  
John Pinion

**RK & Associates, Inc.**  
2 South 631 Route 59, Suite B  
Warrenville, Illinois 60555  
Phone: 630-393-9000 x 208  
Fax: 630-393-9111



**Figure 1-2. Proposed Control Equipment Locations**



\*Final drawings may differ slightly









ILLINOIS ENVIRONMENTAL PROTECTION AGENCY  
 DIVISION OF AIR POLLUTION CONTROL – PERMIT SECTION  
 P.O. BOX 19506  
 SPRINGFIELD, ILLINOIS 62794-9506

**FOR APPLICANT'S USE**

Revision #: \_\_\_\_\_  
 Date: \_\_\_\_ / \_\_\_\_ / \_\_\_\_  
 Page \_\_\_\_\_ of \_\_\_\_\_  
 Source Designation: \_\_\_\_\_

<b>AIR POLLUTION CONTROL          EQUIPMENT          DATA AND INFORMATION</b>	<b>FOR AGENCY USE ONLY</b>
	ID NUMBER:
	CONTROL EQUIPMENT #:
DATE:	

THIS FORM MUST BE COMPLETED FOR EACH AIR POLLUTION CONTROL EQUIPMENT. COMPLETE AND PROVIDE THIS FORM IN ADDITION TO THE APPLICABLE ADDENDUM FORM 260-A THROUGH 260-K. A SEPARATE FORM MUST BE COMPLETED FOR EACH MODE OF OPERATION OF AIR POLLUTION CONTROL EQUIPMENT FOR WHICH A PERMIT IS BEING SOUGHT.

<b>SOURCE INFORMATION</b>	
1) SOURCE NAME: Hammermill Shredder Plant	
2) DATE FORM PREPARED: 12/01/21	3) SOURCE ID NO. (IF KNOWN): 031600FFO

<b>GENERAL INFORMATION</b>	
4) NAME OF AIR POLLUTION CONTROL EQUIPMENT AND/OR CONTROL SYSTEM: DSI Scrubber with Dry Sorbent Fabric Filter Baghouse	
5) FLOW DIAGRAM DESIGNATION OF CONTROL EQUIPMENT AND/OR CONTROL SYSTEM: DSI Scrubber	
6) MANUFACTURER OF CONTROL EQUIPMENT (IF KNOWN): Zenvirotech	
7) MODEL NUMBER (IF KNOWN): Custom Built	8) SERIAL NUMBER (IF KNOWN): Custom Built
9) DATES OF COMMENCING CONSTRUCTION, OPERATION AND/OR MOST RECENT MODIFICATION OF THIS EQUIPMENT (ACTUAL OR PLANNED)	a) CONSTRUCTION (MONTH/YEAR):
	b) OPERATION (MONTH/YEAR):
	c) LATEST MODIFICATION (MONTH/YEAR):
10) BRIEFLY DESCRIBE MODIFICATION (IF APPLICABLE):	

THIS AGENCY IS AUTHORIZED TO REQUIRE THIS INFORMATION UNDER ILLINOIS REVISED STATUTES, 1991, AS AMENDED 1992, CHAPTER 111 1/2, PAR. 1039.5. DISCLOSURE OF THIS INFORMATION IS REQUIRED UNDER THAT SECTION. FAILURE TO DO SO MAY PREVENT THIS FORM FROM BEING PROCESSED AND COULD RESULT IN THE APPLICATION BEING DENIED. THIS FORM HAS BEEN APPROVED BY THE FORMS MANAGEMENT CENTER.

**APPLICATION PAGE** \_\_\_\_\_

Printed on Recycled Paper  
 260-CAAPP

**FOR APPLICANT'S USE**

**EXHAUST POINT INFORMATION**

33) DESCRIPTION OF EXHAUST POINT (STACK, VENT, ROOF MONITOR, INDOORS, ETC.). IF THE EXHAUST POINT DISCHARGES INDOORS, DO NOT COMPLETE THE REMAINING ITEMS.

Stack

34) DISTANCE TO NEAREST PLANT BOUNDARY FROM EXHAUST POINT DISCHARGE (FT):

~115

35) DISCHARGE HEIGHT ABOVE GRADE (FT):

60

36) GOOD ENGINEERING PRACTICE (GEP) HEIGHT, IF KNOWN (FT):

37) DIAMETER OF EXHAUST POINT (FT): NOTE: FOR A NON CIRCULAR EXHAUST POINT, THE DIAMETER IS 1.128 TIMES THE SQUARE ROOT OF THE AREA.

6

38) EXIT GAS FLOW RATE

a) MAXIMUM (ACFM):

110,066

b) TYPICAL (ACFM):

82,257

39) EXIT GAS TEMPERATURE

a) MAXIMUM (°F):

300

b) TYPICAL (°F):

250

40) DIRECTION OF EXHAUST (VERTICAL, LATERAL, DOWNWARD):

Vertical

41) LIST ALL EMISSION UNITS AND CONTROL DEVICES SERVED BY THIS EXHAUST POINT:

NAME

FLOW DIAGRAM DESIGNATION

a) Hammermill Shredder

b) Cyclone

c) Venturi Scrubber

d) VRTO

e) DSI Scrubber

f)

g)

42) WHAT PERCENTAGE OF THE CONTROL EQUIPMENT EMISSIONS ARE BEING DUCTED TO THIS EXHAUST POINT (%)?

100

43) IF THE PERCENTAGE OF THE CONTROL EQUIPMENT EMISSIONS BEING DUCTED TO THE EXHAUST POINT IS NOT 100%, THEN EXPLAIN WHERE THE REMAINING EMISSIONS ARE BEING EXHAUSTED TO:

THE FOLLOWING INFORMATION NEED ONLY BE SUPPLIED IF READILY AVAILABLE.

44a) LATITUDE:

b) LONGITUDE:

45) UTM ZONE:

b) UTM VERTICAL (KM):

c) UTM HORIZONTAL (KM):



APPENDIX H

Feb 22, 2023 at 9:40:21 AM





Mar 9, 2023 at 1:24:11 PM







# Chicago Fire Department Office of Fire Investigation

53 E. Pershing Rd  
Chicago, IL 60653

Phone: (312) 747-5017  
Facsimile: (312) 747-1967

## Report: Special Investigation

OFI Case #: 23-0114      Fire Marshal: O'Sullivan/Wojt  
OEMC Event #: 230351461      Platoon: 3

Primary Address or Location: 2500 S. Paulina

Secondary Address or Location: N/A

Battalion: 15      Name: Flynn      File #: [REDACTED]

Date of Incident: 2/4/2023

CPD RD#: JG140714

Type of Alarm: Still & Box

CPD Officer: Acosta

Time of Alarm: 1623 hrs

Beat #: 1033

Time OFI Notified: 1655 hrs

Star #: 16569

Box #: 154110

Arson Notified: No      Responded: No

Occupancy: Industrial (other)/G000

Second Code: N/A

If Commercial: Sims Metal Midwest

### Event Description and Narrative:

OfI 466 responded to the above address for a fire in an outdoor pile of scrap metal at Sims Metal Midwest. Upon arrival BC15 observed a fire in a large pile of scrap metal, he further related that CFD went to a defensive operation and called a box due to the large fire load. CFD positioned Tower Ladders and master streams in strategic locations around the pile.

This fire started deep inside a large pile of scrap metal approx 40' high at a metal recycling plant. There are Class "A", "B" and "C" materials within this large pile of scrap metal. The cause of this fire is a chemical reaction from multiple unknown materials within the pile. The materials oxidized and the heat generated became trapped under the pile causing a spontaneous ignition. The employees of the plant tried to extinguish the fire as they called CFD. This fire grew rapidly with the large fire load and took master streams from multiple Tower Ladders to extinguish the fire. The fire was extinguished without incident. The RFM is classifying this as an accidental fire due to a spontaneous ignition from unknown materials within the scrap pile.

### Review and Approval:

Click or tap here to enter text.

**Bradley Batka**      Date: Click or tap to enter a date.

**Assistant Commanding Fire Marshal**

RR

**Ryan Rivera**  
**Commanding Fire Marshal**

**Date: 2/6/2023**

This report was prepared considering information available at the time of its completion. The Chicago Fire Department's Office of Fire Investigation reserves the right to amend this report if additional information becomes available.  
(Revised 3/31/22)





DEPARTMENT OF PUBLIC HEALTH  
CITY OF CHICAGO

November 30, 2018

Ms. Deborah Hays  
Metal Management Midwest Inc  
2500 S. Paulina  
Chicago, Illinois 60608

**Subject: City of Chicago Class IVB Recycling Facility Permit (ENVREC104577)  
Metal Management Midwest, Inc – 2500 S Paulina St  
Effective date: 11/16/2018 to 11/15/2021**

Dear Ms. Hays,


A permit is hereby granted by the City of Chicago Department of Public Health (“CDPH”) to Metal Management Midwest Inc. dba Sims Metal Management (“the Permittee”) to operate a Class IVB Recycling Facility located within the corporate limits of the City of Chicago at 2500 S Paulina St (“the Facility”).

Please carefully review all conditions outlined in this permit. Incorporated into this permit by reference are the following: 1) the application dated September 10, 2018 (“the Application”); and 2) all other supplemental information submitted as part of this application including drawings, sheets, and specifications. In the event of a conflict with said references, the terms and conditions of this permit shall prevail.

The Permittee shall fully comply with Article XX, Chapter 11-4 of the Municipal Code of Chicago (“[the Ordinance](#)”) and the Recycling Facility Rules and Regulations (“[the Regulations](#)”). The Permittee shall also fully comply with the Standard Conditions outlined in Attachment A and the Special Conditions outlined in Attachment B of this permit.

This permit allows for the operation of the Facility from 11/16/2018 through 11/15/2021 upon which time the permit shall terminate by its own terms. On or before 11/15/2021, the Permittee may apply to the CDPH for a new operating permit for the following year. If a subsequent operating permit is applied for on or before 11/21/2018, this permit shall remain in effect until the CDPH acts on the pending permit application. If you have any questions concerning this permit, please contact me at (312) 745-3136.

Sincerely,

  
Renante U  
Marante  
2018.11.30  
08:04:08 -06'00'

Renante Marante  
Environmental Engineer III

## ATTACHMENT A STANDARD CONDITONS

---

1. The Permittee shall comply with all applicable local, State, and Federal laws, regulations and standards regarding the construction, operation, maintenance, and closure of the subject Facility, including but not limited to those regulations and standards concerning noise, vibrations, and particulate emissions.
2. Construction, operation, maintenance, and closure of the Facility shall be in accordance with the plans, drawings, and specifications referenced by this permit and included in these Standard Conditions and the Special Conditions.
3. Any changes, modifications, and additions to the Facility=s permit or the approved plans and documentation shall be submitted to the CDPH for review and approval. Such a request shall be made in writing to the CDPH.
4. Issuance of this permit shall not transfer, assign or otherwise affect any liability to the City of Chicago, the CDPH, their employees, or agents as a result of the construction, operation, maintenance, and closure of this Facility.
5. Issuance of this permit does not relieve the Permittee of any liability with regards to the subject Facility.
6. The CDPH or its authorized representatives may inspect the Facility and the Facility records at any reasonable time to ensure compliance with this permit and all applicable rules, regulations, and standards, as well as all conditions necessary to protect the public health and safety.
7. The CDPH may revoke this permit on the basis of any of the grounds set forth in the City of Chicago, CDPH, Article XX Recycling Facility Permits Rules and Regulations.
8. The Permittee shall notify the CDPH of any notices of violations or administrative, civil or criminal citations received by the Facility or any of its operators relating to any alleged violation of any federal, state, or local laws, regulations, standards, or ordinances in the operation of any junk facility, recycling facility, or any other type of waste or recyclable materials handling facility or site. Such notifications shall be provided by email to [EnvWastePermits@cityofchicago.org](mailto:EnvWastePermits@cityofchicago.org).
9. The Permittee shall provide the CDPH, if so requested, with copies of all correspondence to or from the IEPA and USEPA pertaining to the Facility, including, but not limited to notices of violation, letters, permit applications, reports, groundwater monitoring reports, and annual reports.
10. The Permittee shall comply with all requirements and conditions set forth in this permit. Should any portion of this permit be declared illegal or non-binding, the conditions of the remainder of the permit shall remain in effect.

## ATTACHMENT B SPECIAL CONDITIONS

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The following Special Conditions are attached to the operating permit for the Metal Management Midwest Inc Class IVB Recycling Facility located at 2500 S Paulina St:

### OPERATING HOURS

1. The Permittee may operate 5:00 a.m. to 10:00 p.m. Monday through Friday, and from 5:00 a.m. and 5 p.m. on Saturdays and Sundays. A written waiver pursuant to Section 8 of the [Regulations](#) is implied in the above operating hours. CDPH will explicitly revoke the implied waiver or otherwise amend the Permittee's operating hours and days of operation should facility operations cause a nuisance to neighborhood uses.

### MATERIAL HANDLING

2. The Facility is permitted to accept and handle Type A and C recyclable materials consisting of ferrous metal scrap; non-ferrous material; batteries; propane tanks/ cylinder tanks; end-of-life electronics and appliances; used vehicles; and vehicle parts. The Permittee may also receive packaging materials (e.g. cardboard, wood, plastic, etc.) that are shipped with the above-authorized recyclables.

The Facility is not allowed to receive other recyclable materials not explicitly listed above. The Facility shall not accept hazardous special waste, reactive metals, sealed containers, municipal solid waste, or stolen goods. The Permittee shall not accept charred wire unless it is accompanied by proper documentation stating that the material was obtained from a properly licensed company that uses adequate emission control devices for removing the wire coating.

The Permittee shall inspect all loads entering the Facility for unauthorized wastes. Loads containing waste other than recyclable materials as authorized above shall not be accepted at this Facility. The Permittee shall also inspect materials at the shredder stockpile and in-feed area, for unauthorized or potentially explosive materials.

3. The Permittee shall handle all unauthorized wastes inadvertently admitted into the Facility as follows:
  - a. The Permittee shall separately containerize special waste, including hazardous waste, non-hazardous special waste, and PCB waste, and arrange for the immediate removal of such waste by a waste hauler authorized to accept such wastes for transport to a disposal facility that has obtained all necessary Federal, State, and local authorization.
  - b. The Permittee shall isolate reactive metals upon discovery and place such material in a sealed, waterproof container. The Permittee shall arrange for proper disposal of the reactive metals and shall immediately notify the CDPH.
  - c. The Permittee shall isolate all municipal solid waste and properly store such waste in an enclosed waste receptacle for disposal at a properly permitted facility.
  - d. The Permittee shall isolate all suspected stolen property upon discovery and immediately notify the City of Chicago Police Department ("CPD").



## ATTACHMENT B SPECIAL CONDITIONS

- e. After unauthorized waste has been removed from the Facility, the Permittee shall thoroughly clean the affected area in a manner consistent with the type of unauthorized waste managed.
4. The Permittee may accept regulated or prohibited recyclable materials as defined in the Ordinance and the Regulations under the following conditions:
  - a. The regulated or prohibited material is consistent with the types of recyclable materials authorized under Special Condition No. 2;
  - b. The Facility is in compliance with all surveillance requirements specified in 11-4-2640(g) of [the Ordinance](#); and
  - c. The Permittee complies with the documentation requirements set forth in Section 9 of [the Regulations](#).
5. The Facility may receive and process no more than 3,000 tons per day of recyclable materials as specified in Special Condition No. 2. If the Permittee desires additional capacity, the Permittee must submit a revised application to the CDPH for approval. A revised application must demonstrate that the Facility is adequately handling the currently permitted volumes and is sufficiently sized and staffed to accept, store, and process the desired quantity of material.
6. When transporting material to and from the site, the material shall fit entirely within the truck or trailer. Additionally, the truck or trailer shall have its tailgates in place, and the load covered with a tarp as necessary to control dust or loss of material.
7. When transporting material to and from the site, the Permittee shall prevent any fluids or material from spilling into the streets.
8. Material handling at the Facility shall be limited to the classification; baling; crushing; cutting; bundling; shredding; stripping; sorting and depolluting of recyclables. The Permittee is authorized to move materials at the Facility with the aid of vehicles, railcars, skid-steers, fork lifts, and cranes. The Permittee is also authorized to operate the equipment and process areas listed in Table One.

**Table One**

Equipment Description	Number of Items
SHREDDER	1
AREA, MATERIAL PROCESSING	3
BALER	1
STORAGE ROOM, OTHER	1
AREA, GENERAL CONVEYING	1
AREA, TRUCKING	1
AREA, MAINTENANCE	1
SCREEN, OTHER	2
AIR SEPARATORS	3
SORTERS	8
BULK STORAGE PILE	1
BULK LOADING	1
AREA, STORAGE BIN	10
AREA, GENERAL CONVEYING	3

## ATTACHMENT B SPECIAL CONDITIONS

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### USED VEHICLES

9. The Permittee shall thoroughly drain and separately collect all fluids from incoming used vehicles as soon as possible, including fluids from the engine, fuel tank, transmission, radiator, differential, window washing fluid tank, heater core, and all lines and hoses. The Permittee shall use a liquid drainage system that includes the use of funnels or pumps when transferring or disposing of fluids. Fluids must be stored, labeled and managed according to Federal, State, and Local Codes.

### TIRES

10. The Permittee shall comply with the Illinois Environmental Protection Act, [415 ILCS 5/55](#) for purposes of storing used tires. The Permittee shall not allow used tires to accumulate for more than 90 days. If the Facility has 100 or more tires on site at any one time, the facility shall comply with the requirements for tire facilities under Section [4-228-305](#) of the Municipal Code.

### REFRIGERANTS

11. If the Facility accepts any small appliance, room air conditioning appliance, motor vehicle air conditioner (MVAC), or MVAC-like appliance, as those terms are defined in [40 CFR Part 82 Subpart F](#), where applicable, the Permittee shall comply with all requirements of [40 CFR Section 82.156\(f\)](#) in connection with any such appliance or item. Specifically, the Permittee shall either:
  - a. Verify that the refrigerant was evacuated from the appliance or item in accordance with [40 CFR Section 82.156\(f\)](#) by:
    - i. Obtaining a written and signed statement from each customer stating that all refrigerant was removed in accordance with EPA standards. This statement must include the name and address of the person who removed the refrigerant and the date the refrigerant was removed; or
    - ii. Maintaining a contract between the Permittee and the customer that specifies that refrigerant will be properly removed before delivery.
  - or
  - b. Recover any remaining refrigerant from the appliance in accordance with [40 CFR Section 82.156\(f\)](#) using EPA-certified refrigerant recovery equipment;
12. The Permittee shall not accept any appliance or item that has been previously vented of CFCs without the proper documentation in Special Condition 11(a) above.

### BATTERIES

13. The Permittee shall properly dispose of or recycle all batteries offsite within one calendar year of their receipt at the Facility.
14. Batteries shall be stored inside the building, away from sources of heat, spark, and open flame, and isolated from incompatible materials.

## ATTACHMENT B SPECIAL CONDITIONS

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15. The Permittee shall store batteries inside a non-conducting, leak proof, and acid-resistant container with no evidence of leakage, spillage, or damage. The Permittee shall take all appropriate measures to prevent the batteries from short circuiting. Such measures shall include, but not be limited to, the covering of terminals or individually wrapping each battery in a plastic bag.
16. The Permittee shall label each battery or battery container with any one of the following phrases: i) Universal Waste Batteries; or ii) Waste Batteries; or iii) Used Batteries.
17. The Permittee shall store car batteries as follows:
  - a. Place car batteries on acid resistant pallets. The Permittee shall only use pallets with no broken or missing boards and free of protruding nails.  
  
Working car batteries intended for resale at the Facility may be stored on racks in accordance with Special Condition No. 27;
  - b. Batteries shall be stacked no more than three layers high. Layers of cardboard, waffle board, or similar materials shall be placed between all battery layers, underneath the bottom layer and over the top layer to prevent puncturing and short circuiting.
18. The Permittee shall handle damaged batteries and conduct the clean-up of released acids as follows:
  - a. Damaged or leaking batteries shall be placed in a structurally sound, acid-resistant, and leak-proof container. Such containers shall be kept closed at all times when not placing or removing batteries.
  - b. Spilled acids shall be neutralized with an appropriate base solution, and disposed of properly.

### MERCURY SWITCHES AND SENSORS

19. The Permittee shall remove mercury-containing light switches and anti-lock braking system sensors from vehicles manufactured before 2004 using procedures prescribed in IEPA's Recycling Mercury Vehicle Switches in Illinois ("[IEPA mercury manual](#)") guidance manual, the End of Life Vehicle Solutions ([ELVS](#)) website, or pertinent auto manuals.
  20. The Permittee shall store removed switches in a durable screw top plastic bucket that is structurally sound with no evidence of leakage, spillage, or damage. The Permittee shall affix a "Universal Waste" sticker on the outside of the bucket and mark the month, day, and year of the first switch placed inside it.
  21. The Permittee shall send the mercury switch bucket, whether full or not, to a properly permitted recycler offsite within one year of placing the first switch inside the bucket. Upon shipping of the mercury switch bucket offsite, the Permittee shall complete and sign the [IEPA's mercury switch log form](#) and maintain a copy of said record at the Facility.
  22. The Permittee shall maintain mercury spill kits at areas of the Facility where mercury leaks and spills can occur.
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## ATTACHMENT B SPECIAL CONDITIONS

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### MATERIAL STORAGE

23. The Permittee shall store all materials within the permitted property at all times. At no time shall material be stored on neighboring properties or the public way.
24. The Permittee shall maintain a minimum aisle width of 36 inches, or wider to accommodate workers, equipment, cleaning, and emergency response.
25. The Permittee shall handle and store all recyclable materials that may leak fluids or leave an oily residue on a dedicated, impervious concrete pad. The concrete pad shall be sloped, bermed, or otherwise constructed to minimize storm water run-on and run-off and facilitate the capture and collection of fluids. The Permittee must properly dispose of all liquid waste collected at the Facility.
26. The Permittee shall segregate and store recyclable materials in durable receptacles or enclosures such as drums, boxes, bins, or storage bunkers. The Permittee may store recyclables in cardboard boxes provided they are placed indoors, on pallets or otherwise kept off the ground.
27. The Permittee may store recyclable materials on sturdy racks or shelving provided the stored materials are kept at least 18 inches off the ground and are not leaking.
28. The Permittee shall store newsprint, paper, corrugated paper and cardboard in closed containers.
29. The Permittee shall clearly mark all storage receptacles with the type of recyclable material stored. Letters shall not be less than three inches high, outward facing and not hidden. The Permittee shall not deposit other materials than that specified on the receptacle.
30. The Permittee shall maintain the area surrounding all storage containers in a clean and neat manner. No recyclable materials or waste materials of any kind shall be allowed to accumulate around any receptacle or to overflow from any receptacle.
31. The Permittee may stockpile bulk recyclable materials that require large machinery (such as a backhoe, front-end loader, crane, or grapple) to move or process. The Permittee shall maintain such inventories no taller than 30 feet in height as shown by a pile height marker. Further, such stockpiles shall be set back at least 8 feet away from the public way, as measured from the edge of the stockpile closest to the public way.
32. The Permittee shall maintain a twenty (20) foot setback between any waterway river and any stockpiles, as measured from the edge of the stockpile closest to the waterway.
33. The Permittee shall not allow the discharge of storm water or waste water into the waterway without and in accordance with a valid National Pollutant Discharge and Elimination System (NPDES) permit issued by IEPA.
34. The Permittee may not store recyclable materials at the Facility for a period longer than 90 days except materials ready for shipment offsite as finished product or raw material in the manufacturing of new, reused or reconstituted products.
35. The Permittee shall store all waste materials in such a way as to ensure adequate site safety. Flammable materials shall be stored away from sources of heat, sparks and open flames, and in accordance with applicable fire codes. Incompatible materials shall be segregated or stored

## **ATTACHMENT B SPECIAL CONDITIONS**

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away from each other.

36. The Permittee shall ensure that all tanks, drums or other vessels containing liquid materials such as, but not limited to, solvents and petroleum products, are:
- a. Kept in good condition. The Permittee shall immediately replace, repair, or overpack damaged containers;
  - b. Compatible with their contents to avoid reactions or impairment of the container's integrity;
  - c. Kept closed at all times except when adding or removing materials;
  - d. Appropriately labeled in accordance with all local, state, and federal requirements; and
  - e. Are provided with secondary containment complying with all local, state, and federal requirements.

### **SITE REQUIREMENTS**

37. The Facility shall be entirely surrounded by a solid fence eight feet in height that obscure all material stored or kept outdoors at the Facility. Such fencing must be located at least eight feet from all public ways surrounding the property
38. The Permittee shall adequately pave and maintain all material handling areas, driveways, and access/haul roads to prevent migration of contaminants off-site. The acceptable paving material shall include, but not be limited to, asphalt, concrete or gravel. The CDPH reserves the right to require any additional or alternate paving as deemed necessary by CDPH.
39. The Facility shall have a sign, clearly visible to the public, which states the name, address and telephone number of the Permittee, the type of recyclable materials accepted, the types of materials prohibited, and the Facility's operating hours.

### **HOUSEKEEPING, DUST CONTROL, AND MAINTENANCE**

40. The Permittee shall sweep Facility pavements and affected adjacent streets each working day, and on an as-needed basis. Such sweeping shall be performed using a mechanical street sweeper to effectively remove dust and litter.
41. The Permittee shall make a water source available at all times for purposes of Facility cleaning, dust control, and fire safety.
42. The Permittee shall control and suppress dust and other air-borne materials created by Facility activities so that the off-site migration of these materials does not occur. This control and suppression may include, but are not limited to:
- a. Employing watering methods as often as necessary;
  - b. Adequately sheltering dust-emitting activities from the wind or temporarily suspending such activities during high wind conditions; and
  - c. Enclosing and containerizing materials that are susceptible to becoming wind-borne.

## ATTACHMENT B SPECIAL CONDITIONS

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43. The Permittee shall promptly repair damaged or broken pavements to sustain their integrity, prevent standing water, and minimize the generation of dust and mud. The Permittee shall promptly backfill all potholes and depressions at the Facility with aggregate or suitable fill material. In addition, The Permittee shall resurface worn gravel pavements with fresh aggregate as needed.
44. The Permittee shall place garbage inside a covered container. The Permittee shall not allow such containers to overflow and shall immediately empty or remove and replace them when full.
45. The Permittee shall install and maintain filter inserts in all Facility catch basins and storm water inlets to keep sediments, oily liquids, and floatables from discharging into the City of Chicago sewer system.
46. The Permittee shall promptly contain, and clean-up spilled or leaked fluids. The Permittee shall provide spill response kits in all areas of the Facility where chemical, oil, and fuel spills or leaks of one gallon or more may occur. Such kits shall be fully stocked with appropriate materials such as socks, brooms, adsorbent material, and proper personal protective equipment.
47. The Permittee shall routinely remove oil and grease stains from site pavements, walls, and equipment by steam cleaning, pressure washing, or scrubbing these surfaces clean. Such cleaning shall be conducted at least bi-weekly and as needed.
48. The Permittee shall inspect the Facility for vectors twice per month or retain the services of a vector control specialist to conduct said inspections. The Permittee shall employ vector control measures that may include, but are not limited to, bait stations and traps, as often as necessary.
49. The Permittee shall follow applicable requirements in [Part 722](#) of the Illinois Administrative Code, Title 35 in the management and disposal of potentially hazardous waste such as, but not limited to, spilled battery acids, mercury-containing waste, and spent oils or chemicals.

### RECORD KEEPING

50. All logs, receipts, and other documentation required under this permit shall be kept a minimum of three years and shall be made available to the CDPH and the CPD upon request; provided however, that all records and documents pertaining to the acceptance of prohibited and regulated materials, and catalytic converters, shall be kept at the Facility in accordance with the Ordinance and Regulations.
51. The Permittee shall maintain a written record of all vector inspections and vector control installations including date, time and a detailed description of each inspection and any installations or applications to control vectors.
52. The Permittee shall keep a log of liquid waste pickups that documents the dates and the volumes of liquid waste removed and disposed of offsite. Further, the Permittee shall keep all disposal receipts as proof of proper waste disposal.
53. The Permittee shall maintain a log of all vehicles entering and leaving the Facility. This log shall indicate the date, vehicle type, hauling company name if any, and the material type and quantity being transported. The Permittee shall maintain copies of all load ticket receipts.



## ATTACHMENT B SPECIAL CONDITIONS

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54. The Permittee shall maintain a written log documenting all cleaning and maintenance activities performed at the Facility under the Housekeeping, Dust Control, and Maintenance section of this permit. Such log shall include a description of the cleaning operation or maintenance activity performed, the signature of the employee that performed it, and the date and time the employee started and completed the task.
55. The Permittee shall maintain a written record of all emergencies occurring at the Facility, including the date and time of each incident, along with a detailed description of the emergency. The Permittee shall notify the CDPH each day that the Facility is affected by the emergency. Such notification shall be sent by email to [EnvWastePermits@cityofchicago.org](mailto:EnvWastePermits@cityofchicago.org).
56. The Permittee shall timely comply with the requirements contained in [Chapter 11-5](#), Reduction and Recycling Program of the Chicago Municipal Code. The Permittee shall submit semi-annual reports to the Department of Streets and Sanitation (“DSS”) Recycling Coordinator, on forms provided by the DSS.

### SITE SAFETY

57. The Permittee shall undertake all necessary steps to ensure that the Facility is secure from unauthorized entry, is sufficiently screened from the surrounding area and is adequately lighted after dark.
58. The Permittee shall provide training to all Facility employees on fire prevention, emergency procedures and hazardous material identification and handling procedures.
59. The Permittee shall install and maintain fire suppressant equipment in accordance with the Municipal Code of the City of Chicago.
60. The Permittee shall correct any and all violations identified by the City of Chicago Fire Department inspections. Failure to comply with these actions may result in revocation of this permit.
61. The Permittee shall ensure that non-empty gas cylinders, fuel tanks, or other materials that may cause explosions are not placed inside the shredder.
62. The Permittee shall conduct all torch cutting activities in a designated area located away from flammable material storage areas. Gas cylinders used for cutting or welding purposes shall be stored in an upright position and properly secured to avoid accidental jarring or impact.

### PERMITS

63. The Permittee shall maintain an active Certificate of Operation from the CDPH, pursuant to Section [11-4-660](#) of the Code, for all existing regulated equipment or areas requiring an Air Pollution Control (APC) permit. The Permittee shall obtain an [APC Permit](#) from CDPH, pursuant to Section [11-4-620](#) of the Code, for any new regulated equipment or area installed at the Facility.
64. The Permittee shall acquire all necessary permits and approvals for the Facility including but not limited to those required by the CDPH, Department of Business Affairs and Consumer Protection, Zoning Board of Appeals, Metropolitan Water Reclamation District of Greater Chicago and the IEPA. The Permittee shall provide copies of all such permits and approvals to the CDPH upon request.

## **ATTACHMENT B SPECIAL CONDITIONS**

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65. The Permittee shall maintain copies of all Facility permits on site at all times and shall make these available for inspection upon request by the CDPH.

### **CLOSURE**

66. If the Permittee permanently closes or ceases operations at the site ("closure"), the Permittee must submit a written closure notification to the CDPH within 30 days of closure. If the permit is not renewed for any reason, or the Permittee ceases operations at the site, the Permittee must clean up, remove and properly dispose of or recycle all material and waste on the site within 30 days of permit expiration or closure. The Permittee must submit disposal and recycling receipts as proof of proper disposal.

### **VEHICLES**

67. Every vehicle used by the Facility for the collection, transportation or disposal of any recyclable material shall display on each side of the vehicle in letters not less than two inches in height, in contrasting color, the name, address, telephone number and permit number of the recycling facility.

### **VARIANCES**

68. In lieu of the street sweeper specified in Special Condition No. 40, the Permittee may utilize a Bobcat with a broom attachment to sweep site pavements. Prior to sweeping, the Permittee shall ensure that site surfaces are adequately wetted to minimize the generation of dust.

69. In lieu of the solid fencing specified in Special Condition No. 37, the Permittee may utilize opaque fencing, at least 8 feet in height, which is so constructed as to contain airborne material created by Facility activities and obscure all material stored or kept within the boundaries thereof, unless said facility operations occur within the confines of an enclosed building.

### **MISCELLANEOUS**

70. Within 60 days from the date of this permit, the Permittee shall provide the following to CDPH:
- a. A copy of the Fugitive Dust Plan recently submitted to and reviewed by to USEPA and IEPA.
  - b. The average and peak number of tons of metal torched or thermally treated at the Facility, broken down by metal type (ferrous, stainless steel, lead, etc.);
  - c. A copy of the Facility's most recent personal air sampling report as required by OSHA to determine worker exposure to contaminants and the level of protection needed. The information should be anonymized and provided as to comply with any applicable HIPAA requirements;
  - d. A copy of the Facility's material screening plan to prevent the acceptance of radioactive or unauthorized materials at the site; and

## **ATTACHMENT B SPECIAL CONDITIONS**

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- e. A copy of the Facility's standard operating procedures to prevent fires and shredder explosions at the Facility.





**CITY OF CHICAGO**  
**DEPARTMENT OF PUBLIC HEALTH**  
**PERMITTING AND ENFORCEMENT**

**NARRATIVE EVALUATION**

INSPECTION DATE: 02/06/2023  
SITE NAME: HAZMAT  
SITE ADDRESS: 2500 S PAULINA ST, CHICAGO, IL 60608  
SITE CODE: HAZMAT  
PERMIT #: ENVGEN1782564

TIME: 11:00 am  
EMPLOYEE: JOHN SINGLER  
COUNTY: COOK / CHICAGO  
INSPECTION #: 1903621

**SUMMARY**

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**CITY OF CHICAGO**  
**DEPARTMENT OF PUBLIC HEALTH**  
**PERMITTING AND ENFORCEMENT**

**NARRATIVE EVALUATION**

INSPECTION DATE: 02/06/2023  
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TIME: 11:00 am  
EMPLOYEE: JOHN SINGLER  
COUNTY: COOK / CHICAGO  
INSPECTION #: 1903621

**SUMMARY**

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**On February 6, 2023 City of Chicago Department of Public Health Engineer Kenneth Scott, and Senior Environmental Inspectors Felipe Garcia and John Singler conducted an inspection at Metal Management Midwest, Inc. (MMI) 2500 S. Paulina, Chicago, IL. The metals recycling company is also known locally as "SIMS." The inspection was conducted following a fire at the facility on Saturday, February 4, 2023. The CDPH team met at SIMS with Deborah Hays, EHS Partner; Ryan Smith, Assistant Director of Operations (ADO); Orla Kelly, Environmental Specialist; and Sam Flores Plant Manager, MMI. The reporting inspector informed the MMI team that the inspection was the result of the February 4th metals fire. The reporting inspector stated to the MMI team that he had never visited the facility before, whereas the other two CDPH team members had inspected the facility on a number of occasions. Following a safety briefing, the group entered the metal recycling area directly across the street (east) of the MMI office. The group walked north approximately one quarter of a block, to where a specialized device was grasping, crushing and moving tin and other metals that were in piles. The specialized device was in standing water a number of inches deep. For most of the following discussions, Deb Hays answered questions or made statements. Hays said that the on Saturday February 4, 2023, a shift change had taken place and the maintenance crew now on duty saw smoke rising from the tin pile at approximately 4:00 P.M. The crew immediately began to put water on the pile and the fire did not subside. At 4:20 PM the Chicago Fire Department (CFD) was called and water was applied by CFD from their arrival at 4:35 PM until 5:15 PM. CFD completed their operation and was off-site by 6:20 PM. Hays stressed that all fire related issues were handled between 4:35-5:15 P.M., and at no time were flames noted from the smoking metal. According to ADO Smith, On February 5, 2023 CFD returned to check on the pile for any further issues. No dangerous conditions as they related to ignition were found and no fire had reignited. The reporting inspector asked what may have started**



**CITY OF CHICAGO  
DEPARTMENT OF PUBLIC HEALTH  
PERMITTING AND ENFORCEMENT**

**NARRATIVE EVALUATION**

INSPECTION DATE: 02/06/2023  
SITE NAME: HAZMAT  
SITE ADDRESS: 2500 S PAULINA ST, CHICAGO, IL 60608  
SITE CODE: HAZMAT  
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TIME: 11:00 am  
EMPLOYEE: JOHN SINGLER  
COUNTY: COOK / CHICAGO  
INSPECTION #: 1903621

**SUMMARY**

**the fire. Hays stated that their investigation concluded that a large tin and metal control panel or similar instrument, caused the initial ignition. The control panel remained on site and photographs of the soot blackened semi-crushed vessel are located in the report Attachments. Hays said to find the source of the ignition 600 tons of scrap were moved and the lower section of the pile is where their investigation centered. Hays was asked by the reporting inspector what would burn within a tin or metal scrapped vessel. Hays and Smith both answered that lithium batteries, missed during a pre-inspection, could cause a fire. Hays stated that precautions are taken during initial screening of loads brought in to the facility to check for all batteries, but sometimes they are missed and batteries can catch fire. The reporting inspector asked Hays if the origin of the ignited vessel could be traced. Hays stated that the truck which brought in the vessel can be identified, but how the truck obtained any particular item to crush, is not possible. Hays closed by stating that MMI had not had a fire in the past 2 1/2 years and that the last time CFD was called to MMI to fight a fire was fifteen years ago. The inspection was concluded following questions asked and answered.**

REPORT COMPLETED?  YES  NO  
INVESTIGATION COMPLETED?  YES  NO  
NOV ISSUED?  YES  NO  
ATTACHMENTS?  YES  NO

I, JOHN SINGLER, an employee of the City of Chicago, Department of Public Health, declare that I have conducted an inspection of the above mentioned property on the date indicated. I further declare that the observations set forth on the report are true and accurate.



DATE: 02/06/2023  
SITE: 2500 S PAULINA ST  
SITE CODE: HAZMAT  
PERMIT #: ENVGEN1782564

TIME: 2/6/2023 11:00:00AM  
INSPECTOR: JOHN SINGLER  
COUNTY: COOK / CHICAGO  
INSPECTION #: 1903621



COMMENTS: Photo A- 2500 S. Paulina, Metal Management Midwest, Inc. (SIMMS)

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DATE: 02/06/2023  
SITE: 2500 S PAULINA ST  
SITE CODE: HAZMAT  
PERMIT #: ENVGEN1782564

TIME: 2/6/2023 11:00:00AM  
INSPECTOR: JOHN SINGLER  
COUNTY: COOK / CHICAGO  
INSPECTION #: 1903621



COMMENTS: Photo B- 2500 S. Paulina, Fire at the tin piles, just east of the main entrance to the facility

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DATE: 02/06/2023  
SITE: 2500 S PAULINA ST  
SITE CODE: HAZMAT  
PERMIT #: ENVGEN1782564

TIME: 2/6/2023 11:00:00AM  
INSPECTOR: JOHN SINGLER  
COUNTY: COOK / CHICAGO  
INSPECTION #: 1903621



COMMENTS: Photo C- 2500 S. Paulina, Area where the fire took place, now back in production (the following work day Fri-Mon)

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DATE: 02/06/2023  
SITE: 2500 S PAULINA ST  
SITE CODE: HAZMAT  
PERMIT #: ENVGEN1782564

TIME: 2/6/2023 11:00:00AM  
INSPECTOR: JOHN SINGLER  
COUNTY: COOK / CHICAGO  
INSPECTION #: 1903621



COMMENTS: Photo D- 2500 S. Paulina, Scrap pieces where the fire originated, according to SIMMS personnel

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CITY OF CHICAGO  
DEPARTMENT OF PUBLIC HEALTH  
ENVIRONMENTAL PERMITTING AND INSPECTIONS

CITY OF CHICAGO

OTHER CDPH PERMITS

Permit Number	Permit Type	Expiration Date
ENVAIR1258181	ENV_AIR	
ENVAIR1271858	ENV_AIR	
ENVAIR865624	ENV_AIR	
ASTINS1393152	ENV_ASTINS	12/31/2020
ASTINS186706	ENV_ASTINS	12/31/2015
ENVREC104577	ENV_RCYCLE	