Layman, Robb

From: DoNotReply.EJRequest@illinois.gov
Sent: Friday, September 27, 2019 11:02 AM
To: Bernoteit, Bob; Frost, Brad; Frost, Brad; Pressnall, Chris; Lenkart, Maggie; Barria, German
Subject: Request for EJ Review for General III LLC | 031600SFX | 19090021 | Air

A new request has been submitted to the EJ Outreach database.

Source Name: General III LLC

Activity/Subactivity Type: Permit / Construction

Decision Due Date: 12/24/2019

Reviewer - When the permit is ready to be issued, click this link to view the request. When viewing the request, click the button labeled 'Ready for issuance' to mark the record for EJ Release.

Barria, German

From:	Lenkart, Maggie
Sent:	Tuesday, October 1, 2019 9:52 AM
To:	Barria, German
Subject:	FW: Environmental Justice Notification: General III LLC, Chicago
Attachments:	General III LLC 031600SFX 19090021.pdf

For your records.

From: Lenkart, Maggie
Sent: Tuesday, October 01, 2019 9:51 AM
To: Pressnall, Chris <Chris.Pressnall@Illinois.gov>; Lenkart, Maggie <Maggie.Lenkart@illinois.gov>
Subject: Environmental Justice Notification: General III LLC, Chicago

Hello,

Thank you for electing to receive e-notifications.

Please find the attached Environmental Justice Notification Letter and Distribution List for **General III LLC**; Reference **19090021.**

The facility is located at **11600 South Burley Avenue** in **Chicago.**

Sincerely,

Maggie Lenkart

Illinois Environmental Protection Agency
Environmental Justice Intern
217/558-2693
Maggie.Lenkart@illinois.gov
Hours: Tues. – Fri., 8am-1pm

Barria, German

From: DoNotReply.EJRequest@illinois.gov
Sent: Tuesday, October 1, 2019 9:53 AM
To: Frost, Brad; Frost, Brad; Pressnall, Chris; Lenkart, Maggie; Barria, German
Subject: Outreach Status Change for General III LLC | 031600SFX | 19090021 | Air

The EJ source (General III LLC) has moved forward in the outreach process on 10/01/2019.

The status has changed from *Review Pending* to *Outreach In Progress*.

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 · (217) 782-3397
JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

October 1, 2019

Re: General III LLC (Illinois EPA BOA ID# 031600SFX)
Construction Permit (19090021)

To Distribution List:

In accordance with the Illinois EPA's Environmental Justice Policy, the Illinois EPA wants to provide you with information about a potential Illinois EPA action. The Illinois EPA is sending this letter to notify you of an application received by the Illinois EPA Bureau of Air (BOA).

The Illinois EPA has received a Construction Permit application from General III LLC for a proposed facility located at 11600 South Burley Avenue in Chicago. The application requests the construction of a scrap metal recycling facility.

The application is currently under review by the Illinois EPA's Bureau of Air.

If you are receiving paper notifications and would like to sign up to receive notifications by email instead, please visit the Illinois EPA Environmental Justice webpage: https://www2.illinois.gov/epa/topics/environmental-justice/Pages/EJ-Notice-Sign-up.aspx

If you have questions about the application, please contact Chris Pressnall, Environmental Justice Officer at (217) 524-1284, chris.pressnall@illinois.gov.

Sincerely,

Chris Pressnall
Environmental Justice Officer

4302 N. Main St., Rockford, IL 61103 (815)987-7760
595 S. State, Elgin, IL 60123 (847)608-3131
2125 S. First St., Champaign, IL 61820 (217)278-5800
2009 Mall St., Collinsville, IL 62234 (618)346-5120
9511 Harrison St., Des Plaines, IL 60016 (847)294-4000
412 SW Washington St., Suite D, Peoria, IL 61602 (309)671-3022
2309 W Main St., Suite 116, Marion, IL 62959 (618)993-7200
100 W. Randolph, Suite 4-500, Chicago, IL 60601

Distribution List

General III LLC
State Senator Elgie R. Sims, Jr. - State Senate District #17
State Representative Marcus C. Evans, Jr. - State Representative District #33
U.S. Representative Robin Kelly - U.S. Congressional District #2*
U.S. Senator Richard J. Durbin*
U.S. Senator Tammy Duckworth*
City of Chicago – Lori Lightfoot, Mayor
City of Chicago – Susan Sadlowski Garza, Ward 10
Cook County Board of Commissioners*
Cook County Department of Environment & Sustainability*
Chicago Southside Branch NAACP – Rose Joshua
Illinois NAACP – Gregory Norris*
Illinois NAACP – Teresa Haley*
American Lung Association of Illinois – Angela Tin*
Respiratory Health Association - Brian P. Urbaszewski*
Sierra Club – Jack Darin*
Sierra Club – Christine Nannicelli*
Prairie Rivers Network – Elliot Brinkman*
Faith in Place – Rev. Brian Sauder*
Illinois Environmental Regulatory Group – Alec Davis*
Chemical Industry Council of Illinois – Lisa Frede*
Illinois EPA – Crystal Myers-Wilkins*
Chicago Legal Clinic – Keith Harley*
Natural Resource Defense Council – Meleah Geertsma*
Natural Resource Defense Council – Ivan Moreno*
Illinois Environmental Council – Colleen Smith*
University of Chicago Law School – Elizabeth Lindberg*
Grumman/Butkus Associates – Sumeta Medicherla*
Illinois Dept. of Transportation – John Sherrill*
Friends of the Chicago River – Adam Flickinger*
Shawnee Hills & Hollers – Georgia de la Garza*
Shawnee Hills & Hollers – Sabrina Hardenbergh*
Illinois Environmental Council – Jennifer Walling*
LVEJO – Juliana Pino*
Environmental Law & Policy Center – Jeffrey Hammons*
Environmental Law & Policy Center – Kiana Courtney*
Illinois Farm Bureau – Lauren Lurkins*
ComEd – Kareena Wasserman*
Earthjustice – Jennifer Cassel*
Earthjustice – Debbie Chizewer*
Calumet Area Industrial Commission - David Holmberg*
Bridgeport Alliance - Anna Schibrowsky*
Chicago Dept. of Public Health - Alfonso Martel*
City of Chicago - Liliana Escarpita*
Delta Institute - Mila Marshall*
Indian Creek E.E.C.- Jayme Boberek*
Veterans Park Improvement Association - Janey Zavala*
Southeast Environmental Task Force - Peggy Salazar

***Receiving e-notifications**

Permit Applicant: General III LLC
ID#: 031600SFX ; Application#: 19090021
Date received: 9/25/2019 ; 30th day (NOI. deadline): 10/25/2019 ; 90th day: 12/24/2019
Analyst: GS ; Date Checklist Completed: 10/7/19

Permit Application Completeness Screening Questions	Yes/No/NA
1. Does the application include a cover letter or project narrative that describes what the applicant is requesting a permit for (e.g., construct/operate two tanks, etc.)?	Yes
2. Have the applicable signature application forms (APC 200P/628/629, etc.) been completed and signed and dated by the applicant?	Yes
3. For a construction permit application, was correct construction permit fee paid? a. If no fee or incorrect fee paid, call applicant, and tell them to submit it and revised 197-FEE Form within one week's time. If not received within one week, prepare an Additional Fee Letter.	Yes .00 $15,000
4. For a construction permit application, does the APC-200P/628/629 form indicate if the emission unit has already been constructed? If it does, does it indicate date constructed? Denial will be needed if already constructed.	N/A
5. If a construction permit required testing prior to issuance of an operating permit: a. Have the required test results been received by the IEPA? b. Has Compliance Section reviewed the test results or have you requested their review of the test results? c. Did the test results indicate compliance with limits?	N/A
6. For existing sources requesting revision, does ICEMAN show current permit(s) for source issued to the same applicant identified on the form(s) in 2 above?	New location
7. Does the application indicate or can you determine what the potential to emit (PTE) is for the source (including HAPs), including requested modifications?	Yes
8. Does the application state or can you determine if the subject project's process, equipment or source is subject to the NSPS in 40 CFR Part 60, or NESHAP in 40 CFR Parts 61 and 63, or RACT in 35 IAC 218/219 Subparts AA-TT?	Yes None -
9. Does the application propose and clearly identify the annual and short-term emission limits and associated material throughput/usage limits and emission factors to be included in their new/revised permit?	Yes
10. a. Does application identify county and township and SIC code of source? If not, call applicant and tell them to submit that information. b. Is source subject to either 212.302(a) or (b)? If so, does application describe how source will comply with the additional PM requirements?	
11. If source is in an EJ area, is EJ outreach complete and EJ outreach completion email from EJ officer in file?	Yes Request done.
12. If permit was due today, could you write an enforceable permit with application?	
13. Does the application request a change of operating permit from a CAAPP Title V or FESOP to a Lifetime Operating Permit?	N/A

If a No answer in Boxes 1-12 or Yes answer in Box 13, or not clear what the appropriate response is to a question, discuss the application with your supervisor. 11022015.

Layman, Robb

From: Pilapil, Ray
Sent: Thursday, March 19, 2020 4:05 PM
To: Bernoteit, Bob
Cc: Armitage, Julie; Barria, German; Jones, Eric E.; Layman, Robb
Subject: RE: General III hearing

Yes, please prepare, but do not send until further instructions.

Thanks.

Ray

From: Bernoteit, Bob <Bob.Bernoteit@Illinois.gov>
Sent: Thursday, March 19, 2020 4:00 PM
To: Pilapil, Ray <Ray.Pilapil@Illinois.gov>; Armitage, Julie <Julie.Armitage@Illinois.gov>; Barria, German <German.Barria@Illinois.gov>; Jones, Eric E. <Eric.E.Jones@Illinois.gov>; Layman, Robb <Robb.Layman@Illinois.gov>
Subject: RE: General III hearing

Ray,

Should we start preparing a request for additional fees letter for the $10,000 hearing fee?

Bob Bernoteit
FESOP/State Permits Unit Manager,
Illinois EPA, Bureau of Air - Permit Section

From: Pilapil, Ray <Ray.Pilapil@Illinois.gov>
Sent: Thursday, March 19, 2020 3:56 PM
To: Armitage, Julie <Julie.Armitage@Illinois.gov>; Bernoteit, Bob <Bob.Bernoteit@Illinois.gov>; Barria, German <German.Barria@Illinois.gov>; Jones, Eric E. <Eric.E.Jones@Illinois.gov>; Layman, Robb <Robb.Layman@Illinois.gov>
Subject: FW: General III hearing

FYI

From: Pressnall, Chris <Chris.Pressnall@Illinois.gov>
Sent: Thursday, March 19, 2020 11:42 AM
To: Pilapil, Ray <Ray.Pilapil@Illinois.gov>; Guy, Jeff <Jeff.Guy@Illinois.gov>
Cc: Nifong, Heather <Heather.Nifong@Illinois.gov>; Frost, Brad <Brad.Frost@Illinois.gov>
Subject: FW: General III hearing

FYI

Chris Pressnall
Environmental Justice Coordinator
Illinois EPA

(217) 524-1284

(217) 785-8346 (fax)

chris.pressnall@illinois.gov

From: Pressnall, Chris <Chris.Pressnall@Illinois.gov>
Sent: Thursday, March 19, 2020 11:35 AM
To: Kim, John J. <John.J.Kim@Illinois.gov>
Cc: Armitage, Julie <Julie.Armitage@Illinois.gov>; Layman, Robb <Robb.Layman@Illinois.gov>; Frost, Brad <Brad.Frost@Illinois.gov>
Subject: General III hearing

John –

Here are some thoughts put together by Brad:

35 IAC 166 is not prescriptive to the venue for a hearing and nothing in the rule suggests that hearings must be in-person. That said, OCR believes that webex provides the capabilities needed to effectively conduct a public hearing. In the case of General III, OCR and OEJ recommend that an informational public hearing conducted in accordance with 35 IAC 166 subpart A be held and that the hearing itself be conducted via webex. Below is a proposed timeline for such a hearing. The timeline adheres to the traditional timeline of 166. Once a decision has been made, Chris, Robb and I would then inform the company and requestors of the plan and move to implement.

Monday, March 23, 2020: Publish notice of public hearing
Thursday, May 7, 2020: Webex public hearing – 2 sessions, one starting at 1 pm and one starting at 6:30 pm
Saturday, June 6, 2020: End of written comment period
Tuesday, June 30, 2020: Decision deadline (seek waiver until this date)

Importantly, attached is an email from Keith sent concerning this topic that was received shortly after our conversation on Tuesday so we did not have the benefit of adding his thoughts into the equation.

Chris Pressnall
Environmental Justice Coordinator
Illinois EPA

(217) 524-1284
(217) 785-8346 (fax)

chris.pressnall@illinois.gov

Layman, Robb

From: Zwick, Ann M. <azwick@freeborn.com>
Sent: Wednesday, May 6, 2020 2:40 PM
To: Armitage, Julie
Cc: Layman, Robb; Mohr, Kent; Bernoteit, Bob; Barria, German; Pilapil, Ray; 'mooney.john@epa.gov'; 'KBaugues@idem.in.gov'; 'mstuckey@idem.in.gov'
Subject: [External] SIMS Metal Management Midwest Shredder Emission Testing and Pending FESOP Application - PLEASE READ
Attachments: 5250214_1 - 2020-05-06 FINAL LT J Armitage IEPA - SIMS EF Analysis.pdf

Julie –

Please see the attached letter and technical report. It addresses critical issues relevant to a FESOP permit application from SIMS pending in your office. It is also being shared with your staff.

Ann

ANN M. ZWICK
Attorney at Law

Freeborn
Your Future is Our Purpose

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azwick@freeborn.com

www.freeborn.com

May 6, 2020

Via Email julie.armitage@illinois.gov

Julie Armitage
Chief, Bureau of Air
Illinois EPA
1021 North Grand Avenue East
Springfield, IL 62794

Re: *SIMS Metal Management Midwest, Inc. Shredder Emission Testing*
2500 South Paulina, Chicago, Illinois; IEPA ID No.: 031600FFO; and
425 West 152nd Street, East Chicago, Indiana; IDEM ID No. 089-00608

Dear Julie:

The purpose of this letter is to bring to your attention a gross disparity in VOM emission factors that are being used to permit two similarly situated businesses – our client, GII, LLC (d/b/a General Iron) and Sims Metal Management Midwest, Inc. (SIMS).

I am attaching an analysis prepared by RK & Associates (RKA) of shredder VOM emissions testing performed in September 2019 at the SIMS South Paulina, Chicago facility that will have significant impacts on permitting of that facility in Illinois and another facility in East Chicago, Indiana. As described in the RKA analysis, SIMS is using a VOM emission factor that counsel for USEPA Region 5 and SIMS have apparently agreed is an appropriate factor to apply to the SIMS South Paulina shredder. The emission factor is also intended to apply to the SIMS East Chicago shredder in lieu of testing at that facility. That emission factor is not the same factor as contained in the actual test report from the September 2019 testing event, but appears to be the same factor from the September 2017 emissions testing performed at the SIMS Johnston, Rhode Island facility.

RKA previously shared its concerns with USEPA Region 5 about the Rhode Island testing protocol and testing activities, which were observed by USEPA Region 1 inspectors who were present during the September 2017 testing. As RKA pointed out to USEPA, and as described in the attached analysis, there were significant amounts of uncaptured VOM emissions escaping from the front/infeed of the shredder during the testing that were observed by USEPA Region 1 inspectors and not accounted for.

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RKA also shared its concerns about the test protocol for the then-pending SIMS South Paulina shredder emissions test and included a suggestion that the protocol be modified to include a procedure to identify and quantify uncaptured VOM emissions from the front/infeed of the shredder. However, the SIMS South Paulina test was performed in September 2019 without inclusion of these procedures. As described in the attached analysis, the South Paulina test was also unsuccessful due to the presence of an unquantified amount of uncontrolled VOM emissions escaping from the front/infeed of the shredder, which were observed by USEPA Region 5 inspectors using a FLIR camera.

General Iron also conducted shredder emissions testing in May/June 2018 and November 2019 at its Chicago facility. Unlike SIMS, General Iron used methods and procedures utilizing an effective capture system, as witnessed by both USEPA Region 5 representatives during both testing events and Kevin Mattison, who Region 5 requested to attend the May/June 2018 testing event. Interestingly, Mr. Mattison was not also asked to attend the General Iron November 2019 testing event or SIMS' South Paulina testing.

There are significant disparities between the VOM emission factor from the recent testing at General Iron and the VOM emission factors from the testing at SIMS South Paulina and Rhode Island facilities that should not be ignored. The information in the attached analysis demonstrates that:

- All three facilities use the same hammermill shredder technology.

- All three facilities conducted testing using the same percentage of general scrap metal and vehicles (50/50), and the materials processed by General Iron and SIMS South Paulina were essentially the same as they are located less than 5 miles apart and process the same scrap metal stream generated in the Chicago region.

- The General Iron uncontrolled VOM emission factor of 0.5119 lb VOM/ton is 4.4 times greater than the reported SIMS Rhode Island emission factor of 0.117 lb VOM/ton and 5.7 times greater than the reported SIMS South Paulina emission factor of 0.09 lb VOM/ton.

- The uncontrolled VOM emission factors from these facilities should be reasonably consistent and, yet, there is a gross discrepancy due to SIMS' failure to capture the vast majority of total shredder VOM emissions.

- The shredder VOM emission factor of 0.117 lb VOM/ton agreed to by SIMS and USEPA Region 5 to represent the SIMS South Paulina facility is fundamentally flawed and significantly underestimates actual VOM emissions from the SIMS South Paulina shredder.

- By relying on the flawed emission factor, the SIMS South Paulina facility is most likely 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 more accurate General Iron VOM emission factor were applied to the SIMS South Paulina and SIMS East Chicago facilities, the actual VOM emissions from these facilities will approach 95 tpy.

- 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 exceedances of applicable air quality standards at SIMS South Paulina, SIMS East Chicago, and any other shredder that uses these factors.

We believe that USEPA Region 5's approval of the SIMS South Paulina test and the agreed upon emission factor was made in error. As described in the attached analysis, it is totally unclear how USEPA relied on the stack test from the South Paulina facility (a test that they required of the company) to arrive at an "agreed" upon emission factor. It appears that USEPA made some adjustments on an undocumented theoretical basis to guesstimate the uncaptured emissions and arrive at an emission factor. But guesstimating is not credible or reliable, particularly given the significant amount of uncaptured emissions observed. It also seems completely arbitrary that USEPA just happened to settle on the factor from the flawed Rhode Island test.

We have learned that SIMS has requested a FESOP from Illinois EPA for its South Paulina facility. SIMS identifies the uncontrolled VOM emission factor of 0.117 lb VOM/ton in a January 31, 2020 Supplemental Information submittal to its January 2019 FESOP application. That Supplement includes a copy of the e-mail between the SIMS and USEPA attorneys. The FESOP Supplement does not include any information from the South Paulina facility test report. It only includes select pages from the Rhode Island facility test report, which do not acknowledge uncaptured VOM emissions from the front/infeed of the shredder. Based on our knowledge, SIMS did not submit the testing protocol or test report to Illinois EPA and we have been told by Illinois EPA's FOIA Office that they do not have these documents. SIMS is also using the flawed emission factor in a MSOP issued by IDEM for its East Chicago, Indiana shredding facility in order to avoid the requirement to perform a BACT analysis.

By using this flawed emission factor, SIMS is attempting to increase its throughput at the South Paulina and East Chicago facilities, without installing the necessary VOM controls. This emission factor is not technically justified and provides SIMS with a competitive advantage that is

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unwarranted in any circumstances. The Illinois EPA should not accept the agreed upon emission factor.

We are requesting that Illinois EPA take a hard look at the emissions testing and this emission factor, and work with USEPA and IDEM to resolve the discrepancies. There also needs to be a review of the pending FESOP application that has been filed, so that Illinois, Indiana and other states in the Region are not issuing permits in the same Region with grossly understated emission factors. It is a fundamental principle of the law that similarly situated entities should be treated the same. We do not know why this principle should not apply to SIMS' operation.

We appreciate your prompt attention to this matter.

Sincerely,

Ann M. Zwick

Encl.
cc: Ray Pilapil
Robb Layman
Kent Mohr
Bob Bernoteit
German Barria
John Mooney, USEPA
Keith Baugues, IDEM
Matt Stuckey, IDEM

5243071v4/33369-0001

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

May 6, 2020

Prepared for:

Ann Zwick
Freeborn & Peters LLP
311 South Wacker Drive, Suite 3000
Chicago, Illinois 60606

Prepared by:

John G. Pinion
Principal Engineer
RK & Associates, Inc.

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

RK & Associates, Inc.

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.

<u>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.</u>

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).

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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.

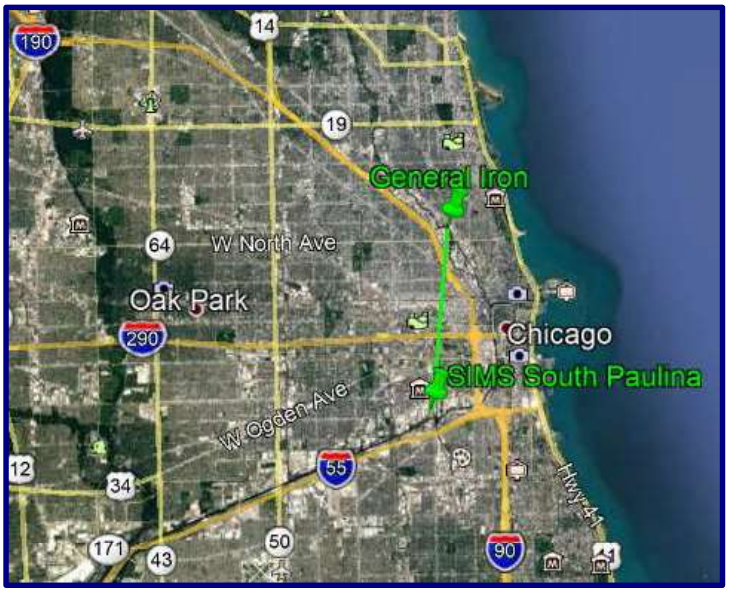
Additional details related to the above information are presented below.

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.

Figure 1 – Location of General Iron and SIMS South Paulina



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.

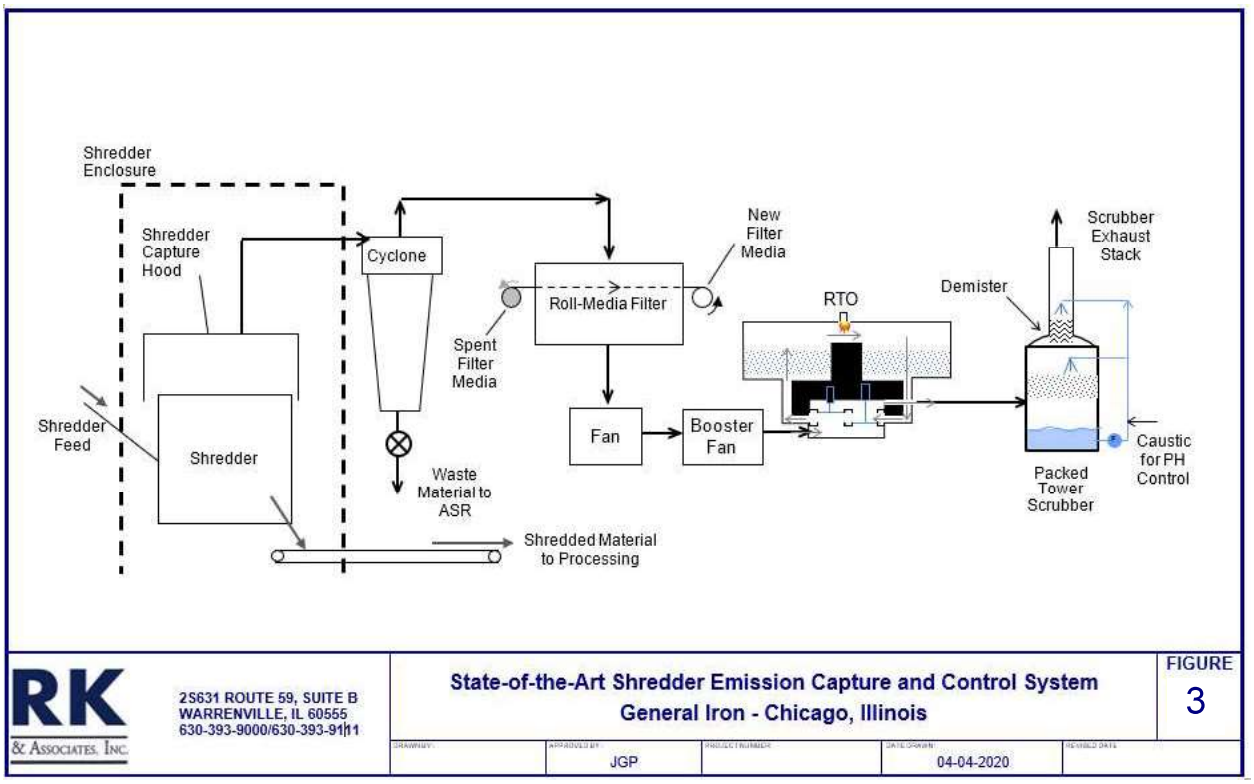
Figure 2 – Typical Uncontrolled Exhaust from Front/Infeed of the Hammermill Shredder at SIMS South Paulina

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 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.

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.

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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.

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Table 3 – Summary of Shredder VOM Emission Testing

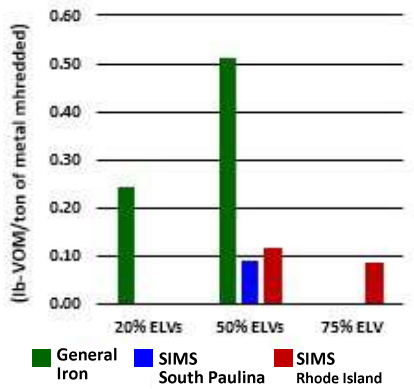
Parameter		General Iron Chicago, Illinois		SIMS South Paulina Chicago, Illinois	SIMS Johnston Rhode Island	
Shredder Technology		hammermill with water injection				
Date of VOM Testing		Jun. 2018	Nov. 2019	Sept. 2019	Sept. 2017	
Material Processed During VOM Emission Testing	General Scrap Metal (wt.%)	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[a]	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[b]

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.

Figure 4 – Uncontrolled Shredder VOM Emission Factors



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.*[1]

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

[1] 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.*[2]

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.*[3]

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2 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.

3 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.

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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."*[4]
>
> *During Run #2, significantly more emissions were uncaptured, as seen via FLIR camera, (see Videos #13-21 of Appendix A)."*[3]
>
> *"Videos captured during Run #3 showed sporadic spikes in emissions imaged via the FLIR camera."*[3]

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.

[4] 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

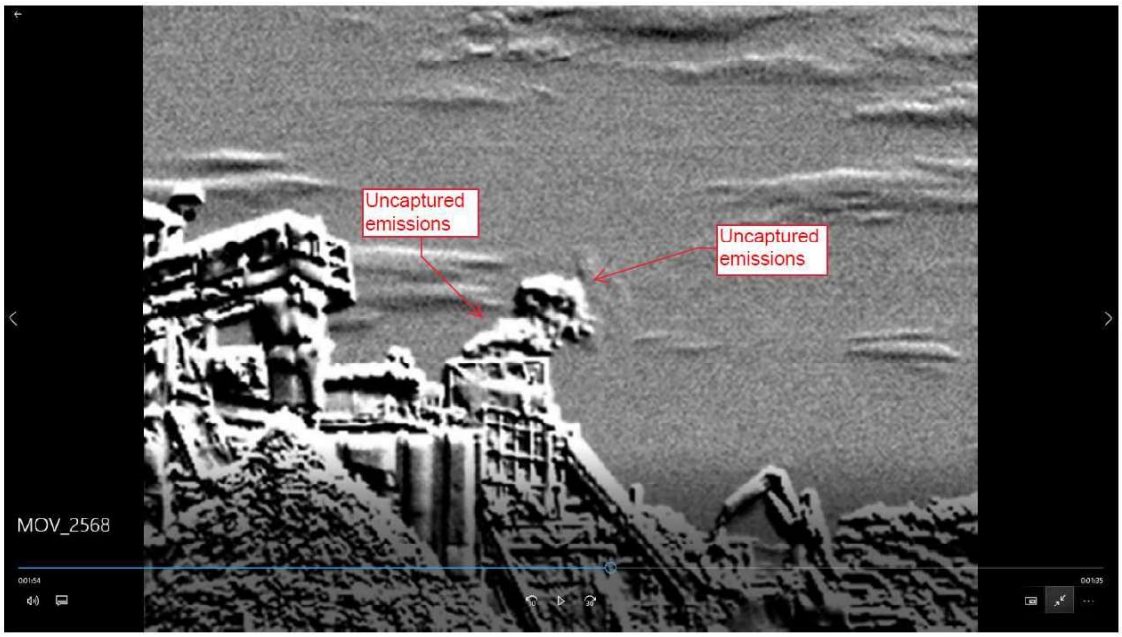


Figure 6 is an image from 0:35 of video MOV_2572 taken during Test Run 2. The video was recorded from a location southwest of the shredder viewing in a northeasterly direction toward the front/infeed of the shredder. The image shows a large plume of uncaptured emissions discharged from the front/infeed of the shredder.

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

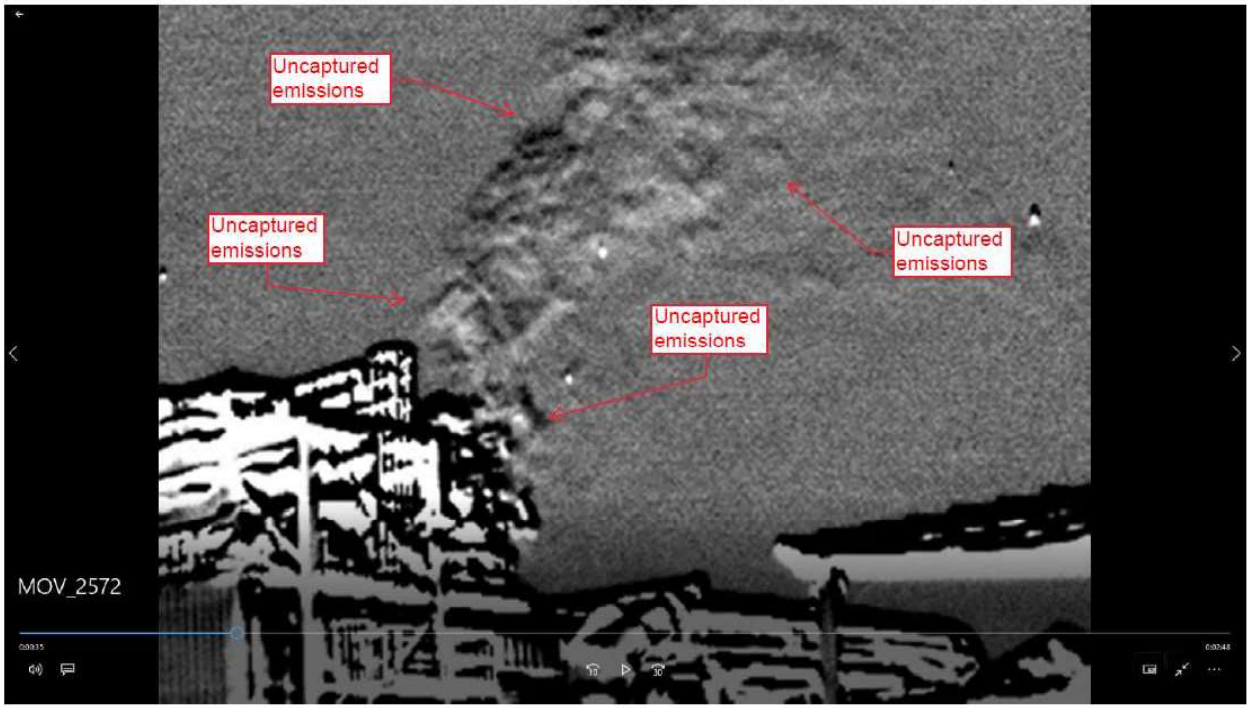
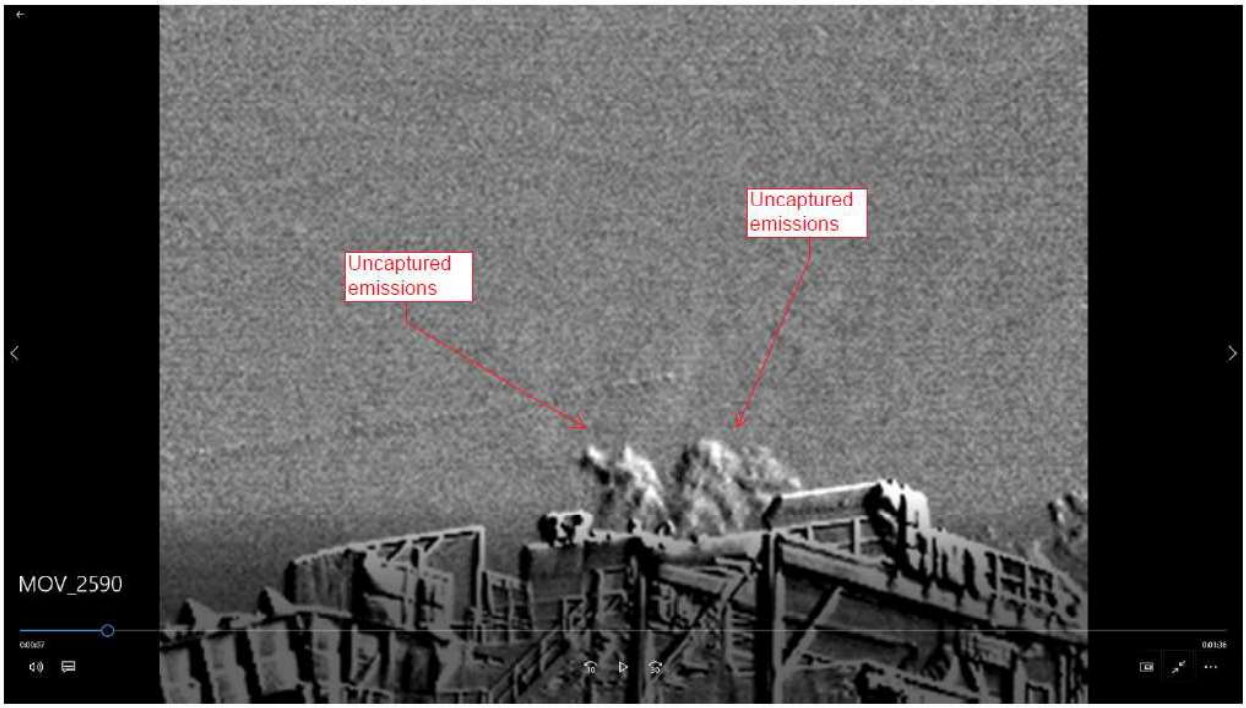


Figure 7 is an image from 0:07 of video MOV_2590 taken during Test Run 3. The video was recorded from a location northwest of the shredder viewing in a southeasterly direction toward the front/infeed of the shredder. The image shows a large plume of uncaptured emissions discharged from the front/infeed 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.

RK & Associates, Inc.

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

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*."

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.

RK
& Associates, Inc.

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

RK & Associates, Inc.

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

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

RK & Associates, Inc.

+ 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" H2O, 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).**

  <u>Performance of the Temporary Enclosure</u>

  + 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.

Yours very truly,
RK & Associates

John G. Pinion
Principal Engineer

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

RK & Associates, Inc.

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 (6th, 15th, 18th, 20th)
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[1]. 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:

[1] The prior shredded, 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. Trzupek 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. Trzupek 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[2].

Ms. Davies was informed by Mr. Trzupek 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

[2] 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 1st half	9:01 am*	9:14 am	9:44 am	9:51 am
9/15/17	50/50	Run-1 2nd half	10:01 am*	10:04 am	10:34 am	10:36 am
9/15/17	75/25	Run-2 1st half	12:18 pm*	12:21 pm	12:51 pm	12:52 pm
9/15/17	75/25	Run-2 2nd 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 1st half	8:36 am	8:39 am	9:09 am	9:11 am
9/18/17	50/50	Run-3 2nd half	9:18 am	9:23 am	9:53 am	9:53 am**
9/18/17	75/25	Run-4 1st half	11:12 am	11:14 am	11:44 am	11:45 am
9/18/17	75/25	Run-4 2nd 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 1st half	81	97
9/18/17	50/50	Run-3 2nd half	67	120
		Total:	*148*	*217*
9/18/17	75/25	Run-4 1st half	111	36
9/18/17	75/25	Run-4 2nd half	86	72
		Total:	*197*	*108*

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:

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

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

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

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

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.

RK & Associates, Inc.

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, Stack Testing Coordinator (EIA)

Through: Jerry Keefe, Team Leader (EIA)

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 Trzupek	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

Cowan WEO 12/6/17 EIA JK 12/4/17 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 Trzupek 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.[1]

No Hot Wire Anemometer

Also, on September 14, 2017, Mr Osbahr was informed by Mr. Trzupek 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. Trzupek 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. Trzupek 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.

[1] 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)[2]
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

[2] 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.

RK & Associates, Inc.

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

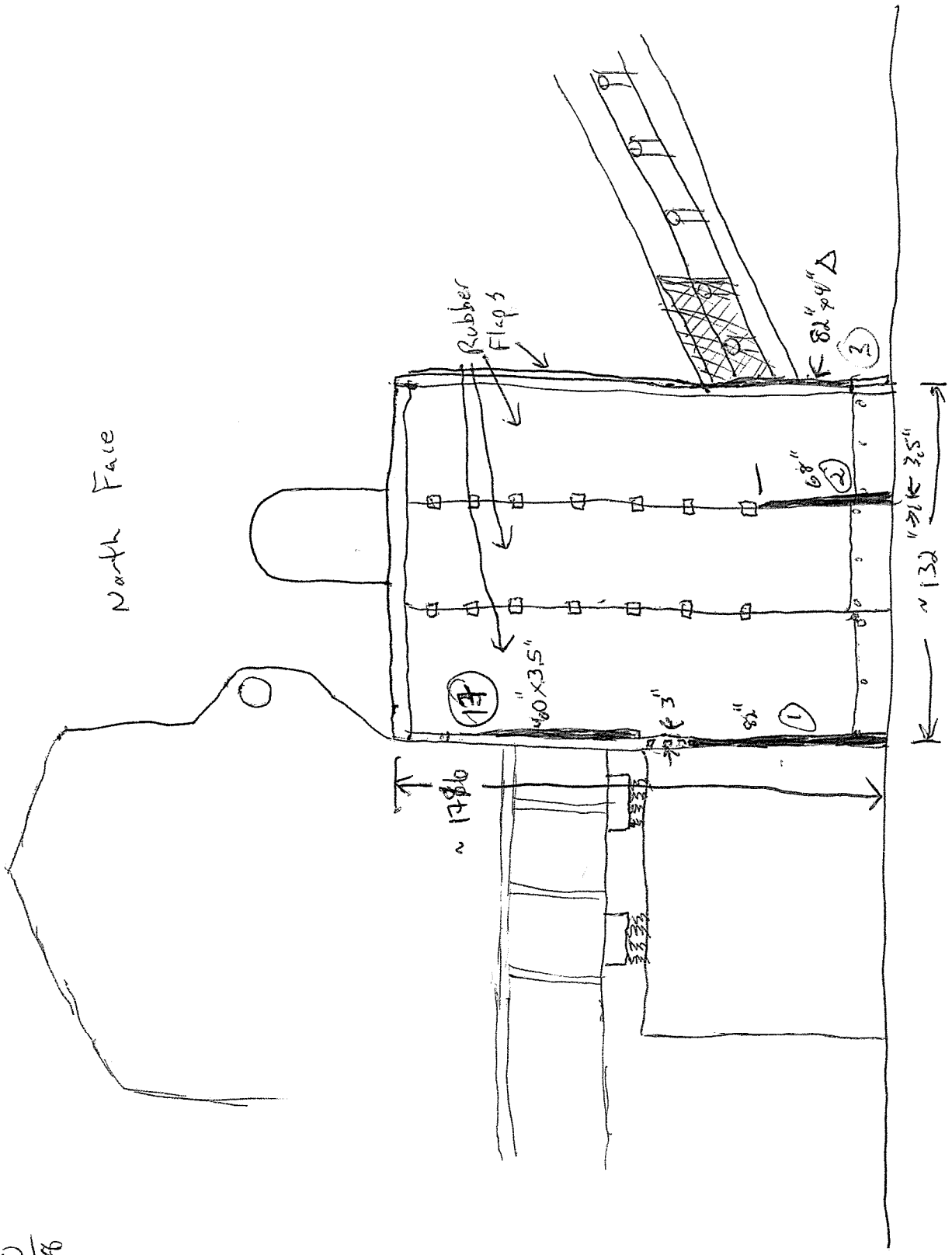
August 30, 2019

ATTACHMENT C

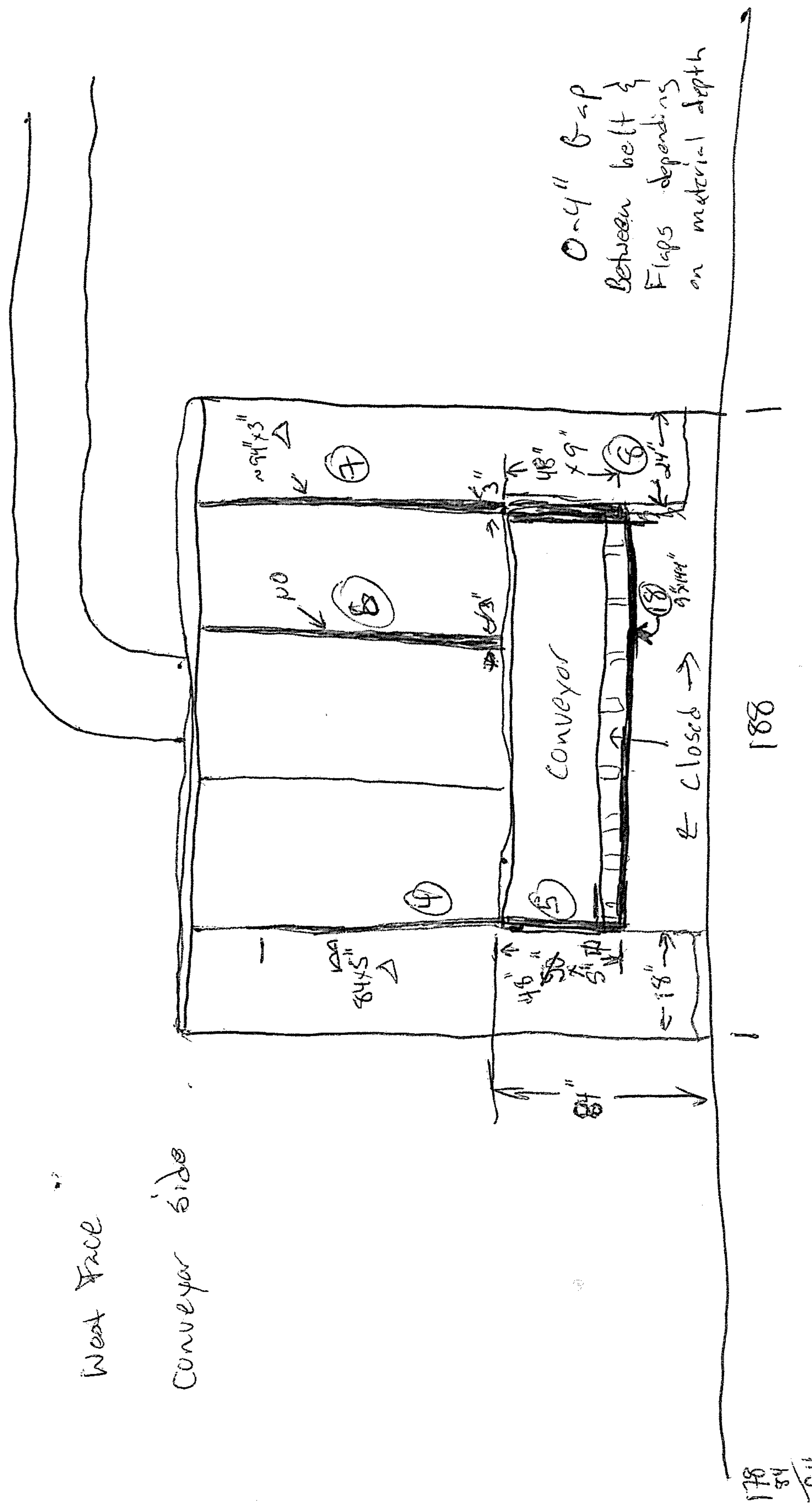
Appendix J – Enclosure Drawings and Pictures
from the
CleanAir Report on Metal Shredder Emission Testing
SMM New England Corporation
December 4, 2018

APPENDIX J: ENCLOSURE DRAWINGS AND PICTURES

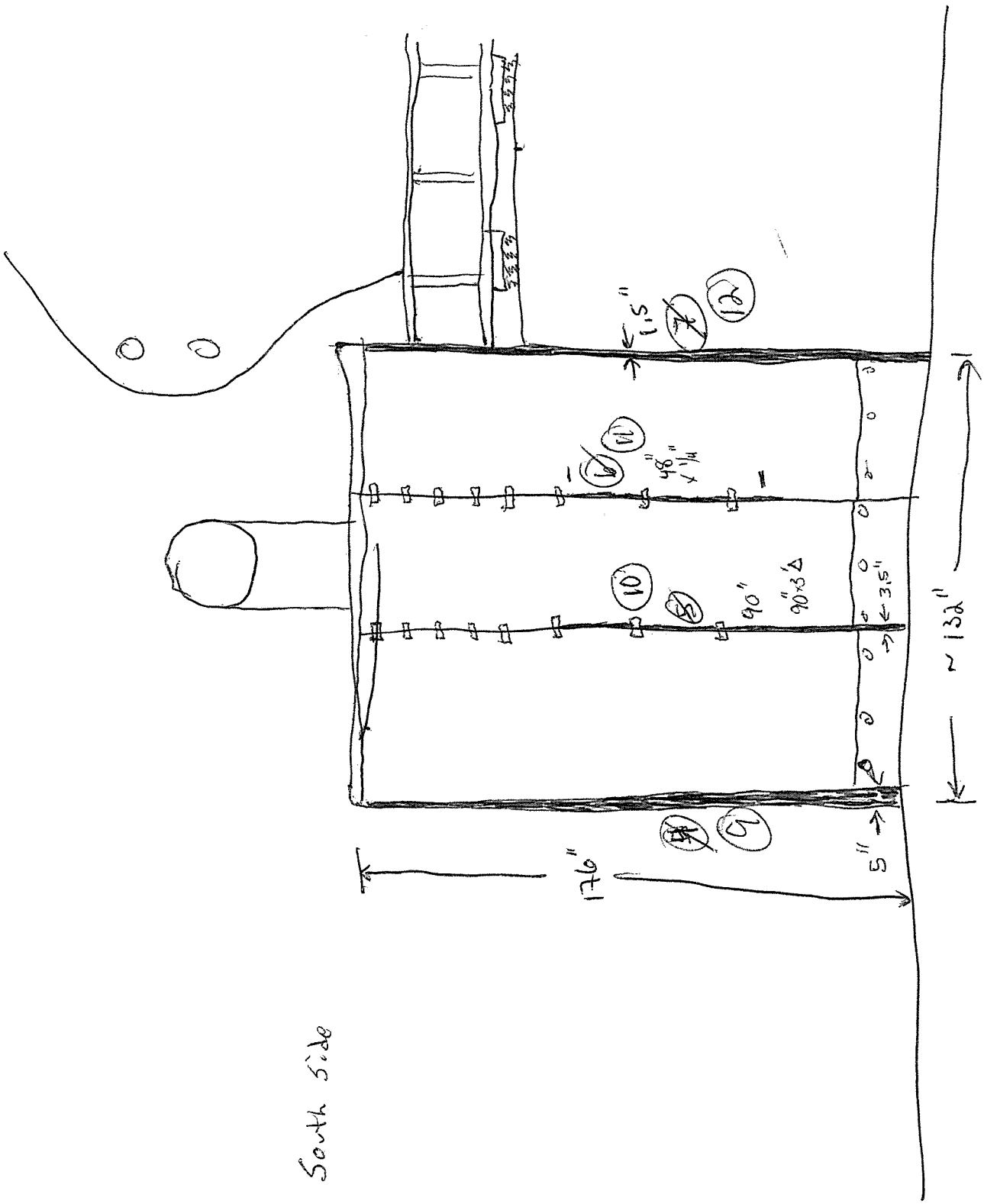
C-2



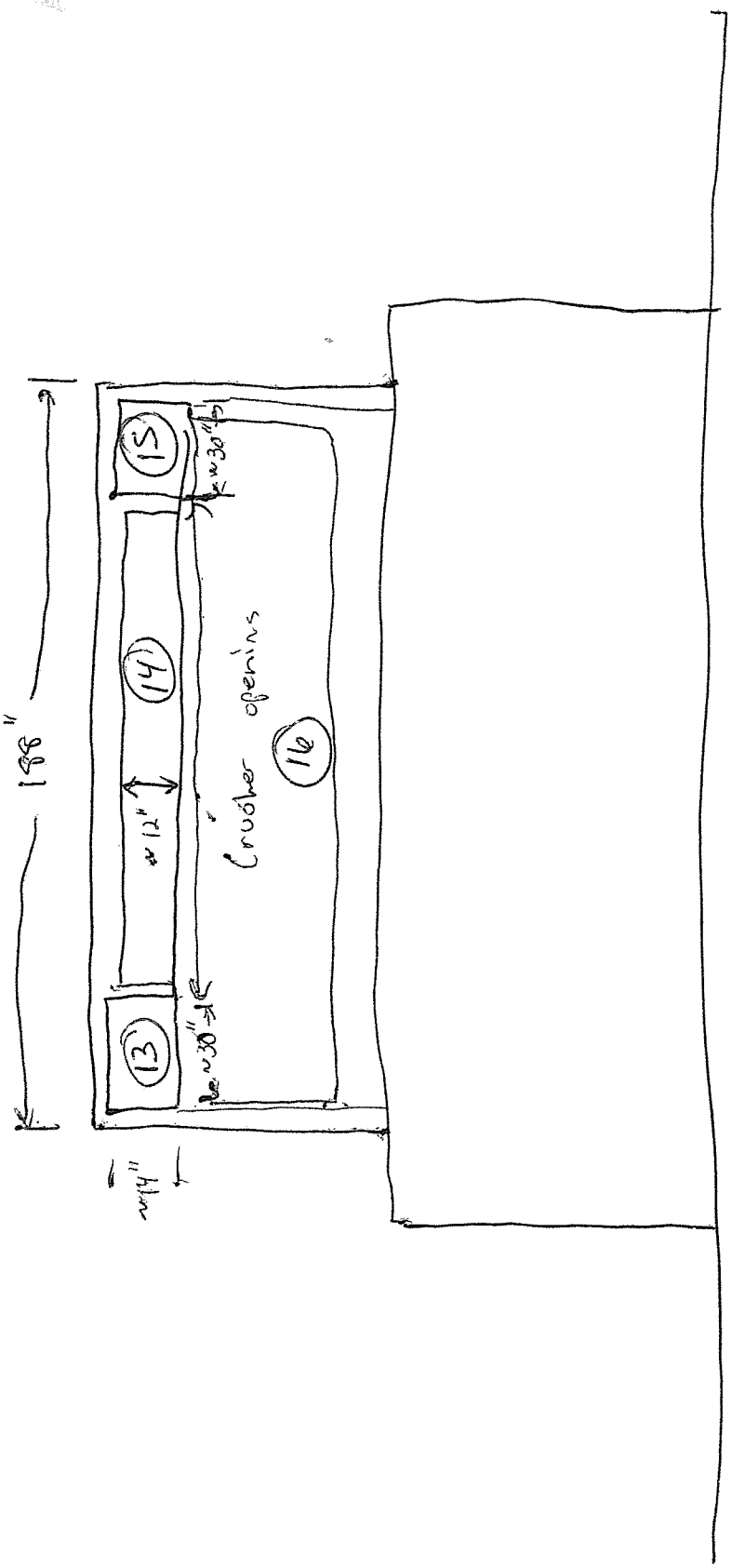
238
60
178


West Face
Conveyor Side
0-4" Gap
Between belt &
Flaps depending
on material depth
Conveyor
← Closed →
188
84"
48" x 9"
24"
18"
no
9"x144"

C-4



C-5



C-6

C-7

C-8

C-9

C-10

C-11

C-12

C-13

C-14

Layman, Robb

From: Bernoteit, Bob
Sent: Wednesday, May 20, 2020 11:05 AM
To: Sprague, Jeff
Subject: RE: Region 5 has modeling questions

Jeff,

I was tasked with asking you to contact Phuong. I don't have her contact information.

The questions that they had were from reviewing the information we put up on the Agency's website for the public notice. You should be able to access the repository from the link and entering I.D. #031600SFX:

https://www2.illinois.gov/epa/public-notices/boa-notices/Pages/archive.aspx

Bob Bernoteit
FESOP/State Permits Unit Manager,
Illinois EPA, Bureau of Air - Permit Section

From: Sprague, Jeff <Jeff.Sprague@Illinois.gov>
Sent: Wednesday, May 20, 2020 10:52 AM
To: Bernoteit, Bob <Bob.Bernoteit@Illinois.gov>
Cc: Sprague, Jeff <Jeff.Sprague@Illinois.gov>
Subject: RE: Region 5 has modeling questions

Bob,
Could you get Region 5 to write them down and attach them to an email. Normally, I don't have a problem answering questions over the phone, but with this project it always involves some digging. And it's even harder for two reasons: 1.) Some of the information is only on paper, and I don't have access to it here at home, and 2.) Maybe it's old age and my hearing, but I have a difficult time understanding Phuong Nguyen on the phone.

Thanks,

Jeff

From: Bernoteit, Bob <Bob.Bernoteit@Illinois.gov>
Sent: Wednesday, May 20, 2020 10:42 AM
To: Sprague, Jeff <Jeff.Sprague@Illinois.gov>
Subject: Region 5 has modeling questions

Jeff,

We had a conference call with Region 5 this morning about the General III construction permit. They had quite a few modeling questions, that we were not able to answer. They asked if you would call Phuong Nguyen to discuss these. Thank you.

Bob Bernoteit
FESOP/State Permits Unit Manager,

Layman, Robb

Subject: G III, LLC Draft Construction Permit Discussion
Location: Webex (Please call in)

Start: Wed 5/20/2020 9:00 AM
End: Wed 5/20/2020 10:30 AM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Bernoteit, Bob
Required Attendees: Ogulei, David; Barria, German; Jones, Eric E.; Layman, Robb
Optional Attendees: Pilapil, Ray; Frost, Brad; Pressnall, Chris

-- Do not delete or change any of the following text. --

When it's time, join your Webex meeting here.

Meeting number (access code): 288 698 938
Meeting password: 3wqBx3itGi5

Join meeting

Join by phone
Tap to call in from a mobile device (attendees only)
+1-312-535-8110 United States Toll (Chicago)
+1-415-655-0002 US Toll
Global call-in numbers

Join from a video system or application
Dial 288698938@illinois.webex.com
You can also dial 173.243.2.68 and enter your meeting number.

Join using Microsoft Lync or Microsoft Skype for Business

Dial 288698938.illinois@lync.webex.com

If you are a host, go here to view host information.

Need help? Go to http://help.webex.com

Layman, Robb

From: Armitage, Julie
Sent: Monday, June 1, 2020 12:40 PM
To: Frost, Brad
Cc: Mohr, Kent
Attachments: As requested.xlsx

Table is for internal consumption only. However, based on a review of available information, the Illinois EPA believes the General Iron is the sole auto shredder that is currently utilizing an RTO to control VOC emissions. Of course, this requirement is based on emissions testing through which is was determined that VOC emissions were at a level that subjected the unit to regulatory requirements for controlling emissions.

Id Number	SIC	NAICS	Name	Address	City
025010ABB	2851	325510	The Sherwin-Williams Co	14 Industrial Park	Flora
031024ADZ	5093	423930	Scrap Metal Services LLC	3000 W 139th St	Blue Island
031051AFI	3341	331420	United Scrap Metal Inc	1545 S Cicero Ave	Cicero
031069AAJ	7389	561499	Safety-Kleen Systems Inc	633 E 138th St	Dolton
031462AAE	5093	423930	Lemont Scrap Processing Ltd	16229 New Ave	Lemont
031600BTB	5093	423930	GII LLC	1909 N Clifton Ave	Chicago
031600FFO	5093	423930	Metal Management Midwest Inc	2500 S Paulina St	Chicago
031600FGV	5093	423930	Tri-state Metal Co	1745 W Fulton St	Chicago
043090ADT	4953	562212	Lakeshore Recycling Systems LLC	1655 Powis Rd	West Chicago
091801AAL	5093	423930	Belson Steel And Scrap	1685 N State Route 50	Bourbonnais
097802AAA	5093	423930	Cleveland Corp	42810 Greenbay Rd	Zion
119040AED	5093	423930	Totall Metal Recycling Inc	2684 Missouri Ave	Granite City
143065AYH	5093	423930	Alter Metal Recycling	2424 W Clark St	Peoria
165010AAM			Eldorado Enterprises Inc	1212 Highway 45	Eldorado
197445ABA	5093	423930	Joliet Auto Parts	1014 E Washington St	Joliet
201045AAJ	5093	423930	Behr Iron & Steel	201 Wheeler Ave	South Beloit

State	ZIP	Permit Type	Last Reported VOM (tpy)	RTO	
IL	62839-9700	Lifetime	5.78	No	Not a auto shredder
IL	60406-3373	ROSS		No	Metal shredder (auto shredder)
IL	60804-1529	ROSS	0.01	No	copper wire shredder
IL	60419-1058	TITLE V	22.64	yes	Drum shredder
IL	60439-3684	ROSS		No	Hammermill Shredder (Probably A
IL	60614-4893	Lifetime (rejected)	94.436	Yes	Auto shredder
IL	60608-5307	Lifetime	0	No	Auto shredder
IL	60612-2509	ROSS	0.0408	Yes	Wire shredder RTO not on shredd
IL	60185-1668	ROSS		No	Construction Debris Shredder
IL	60914-9303	ROSS	0.411	No	Aluminum Shredder and Metal shr
IL	60099-9562	Lifetime	0.1	No	Metal shredder (auto shredder)
IL	62040-2050	Lifetime	0.0556	No	Hammermill Crusher (Probably Au
IL	61607-2017	Lifetime		No	Auto shredder
IL	62930-3680	ROSS		No	Wire shredder
IL	60433-1232	Construction	0	No	Auto shredder
IL	61080-0217	Lifetime	0.96	No	Auto shredder

uto shredder)

er

edder (Auto shredder?)

to shredder) and Radiator/Drum shredder

Layman, Robb

From: Ogulei, David <Ogulei.David@epa.gov>
Sent: Friday, June 12, 2020 10:48 AM
To: Pilapil, Ray
Cc: Bernoteit, Bob; Damico, Genevieve; Marcus, Danny; Lim, YeChan
Subject: [External] General Iron Draft Permit Comments
Attachments: general iron comments 6-12-20.pdf

Ray,

Thank you for the opportunity to review the construction permit that Illinois EPA proposes to issue to General Iron Industries for its proposed metal recycling facility in Chicago. On May 20, 2020, EPA and Illinois EPA held an informal conference call to discuss various options for strengthening the proposed permit. As follow up to that discussion, I have attached EPA's formal comments that reiterate two of the issues we discussed on May 20. We appreciate Illinois EPA's willingness to work with us to resolve all of the issues we discussed on May 20 and in the attached letter.

Let me know if you have any questions.

David Ogulei
U.S. Environmental Protection Agency
Region 5 | Air & Radiation Division | AR-18J
77 West Jackson Blvd. | Chicago, Illinois 60604
Phone: (312) 353-0987 | Ogulei.David@epa.gov

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

Raymond E. Pilapil
Manager, Permit Section
Division of Air Pollution Control, Bureau of Air
Illinois Environmental Protection Agency
1021 North Grand Avenue East
Springfield, Illinois 62794-9276

Dear Mr. Pilapil:

General III, LLC (General Iron) has applied for a construction permit for a new scrap metal recycling plant to be located at 11600 South Burley Avenue in Chicago, Illinois. The project involves relocation of General Iron's existing operation from 1909 North Clifton Avenue in Chicago, Illinois, to a new location at 11600 South Burley Avenue. Like the existing facility, the new facility will receive recyclable material such as End of Life Vehicles (ELVs), used appliances, and metal scrap material to be shredded and processed into a variety of metal products, such as ferrous and non-ferrous materials. The new facility will be located on a 175-acre site that is approximately seven times larger than the current location, and will feature an enclosed hammermill shredder, with a Roll-Media Filter and Regenerative Thermal Oxidizer (RTO) for controlling particulate matter (PM) and volatile organic matter (VOM), respectively. The Illinois Environmental Protection Agency (IEPA) has prepared a draft construction permit for the construction of the plant.

The United States Environmental Protection Agency appreciates IEPA's efforts to address community concerns surrounding this project and ensure the permit meets all federal and state requirements. EPA provides the following comments to improve the compliance procedures of the permit, and ensure the permit record provides adequate support for the permit decision:

1. Condition 5d requires the Permittee to operate emission capture and control equipment which achieves an overall reduction in uncontrolled VOM emissions of at least 81 percent from each emission unit. Based on the emission estimates included in the permit record, it appears IEPA assumed the hood capture efficiency to be 100 percent. EPA requests IEPA to supplement the permit record to provide support for the 100 percent hood capture efficiency used for calculating emissions and setting emission limits. If IEPA's analysis shows that the proposed facility would not continuously achieve 100 percent capture in practice, please consider adjusting the emission factor in Condition 12b(i) to account for potential uncaptured

VOM emissions. In this regard, it may be necessary to incorporate into the permit additional provisions for estimating the capture efficiency that would be used to calculate actual emissions. EPA is available to assist IEPA with developing appropriate procedures for this purpose, which may include the use of EPA Test Methods 204 through 204F, computational fluid dynamics modeling, or visible emissions observations, as appropriate.

2. The November 2019 stack test conducted at the existing facility, and upon which the permit's emission limits are based, was performed with 50 percent ELVs in the feed. However, the permit does not include permit conditions that take into account this operating condition at the time of the stack test. EPA's experience with hammermill metal shredders indicates that, in general, the higher the proportion of ELVs in the feed the higher the VOM and organic hazardous air pollutant (HAP) emissions from the shredder. EPA has also observed that draining of fluids from ELVs before they are fed to the shredder will generally reduce actual VOM and organic HAP emissions from hammermill shredders. EPA requests that IEPA consider incorporating into the permit terms and conditions that address the maximum percentage of ELVs allowed in the feed, and whether or not fluids are drained from ELVs before they are fed to the shredder, consistent with the operating conditions at the time of the relevant stack test. Alternatively, IEPA may clarify in the permit record how such permit provisions are unnecessary for this facility.

Thank you for the opportunity to submit comments. If you have any questions, please contact me at (312) 353-4761, or David Ogulei at (312) 353-0987.

Sincerely,

GENEVIEVE DAMICO Digitally signed by GENEVIEVE DAMICO
Date: 2020.06.12 10:26:37 -05'00'

Genevieve Damico
Chief
Air Permits Section

Layman, Robb

From: Kim, John J.
Sent: Monday, June 22, 2020 8:23 AM
To: Layman, Robb
Subject: Fw: Question re: Pruim brothers
Attachments: 0630600001.pdf

See attached. I've asked if there are any others they've done, so I'll let you know if I hear back on that.

John J. Kim
Director
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-9540
E-mail: john.j.kim@illinois.gov

From: Smith, Kenn <Kenn.Smith@Illinois.gov>
Sent: Monday, June 22, 2020 8:17 AM
To: Kim, John J. <John.J.Kim@Illinois.gov>
Cc: Morris, Greg <Greg.Morris@Illinois.gov>; Rominger, Kyle <Kyle.Rominger@Illinois.gov>; Richardson, James <James.Richardson@Illinois.gov>; Morris, Cristina <Cristina.Morris@Illinois.gov>
Subject: FW: Question re: Pruim brothers

John,

Attached is a denial letter for Community Landfill, dated May 11, 2001. The second denial point references Section 39i and Robert Pruim.

Kenn

From: Morris, Cristina <Cristina.Morris@Illinois.gov>
Sent: Monday, June 22, 2020 7:41 AM
To: Smith, Kenn <Kenn.Smith@Illinois.gov>
Subject: RE: Question re: Pruim brothers

We always send them a Wells letter for every application. And if application is denied, one denial point is 39i.

> Pursuant to Section 39(i)(2) of the Act [415 ILCS 5/39(i)(2)], the Illinois EPA may deny a permit if the owner or operator has a history of conviction of a felony in federal court. In accordance with Section 39(i) of the Act, the Illinois EPA conducted an evaluation of Community Landfill Corporation's prior experience in waste

management operations. Based on the felony conviction of Robert J. Pruim, which is directly related to the management of waste in Illinois, the Illinois EPA, by the authority granted in Section 39(i) of the Act is denying this permit. Mr. Robert J. Pruim was convicted in federal court of a felony in the case of U.S.A. v. Pruim, et al., No. 93-CR-682 (Dist. Ct. N-IL).

From: Smith, Kenn <Kenn.Smith@Illinois.gov>
Sent: Monday, June 22, 2020 7:29 AM
To: Morris, Cristina <Cristina.Morris@Illinois.gov>
Cc: Morris, Greg <Greg.Morris@Illinois.gov>; Kim, John J. <John.J.Kim@Illinois.gov>; Rominger, Kyle <Kyle.Rominger@Illinois.gov>; Richardson, James <James.Richardson@Illinois.gov>
Subject: FW: Question re: Pruim brothers

Christine,

Do you recall BOL/Permits denying any of the Community Landfill applications for 39i reasons?

Kenn

From: Kim, John J. <John.J.Kim@Illinois.gov>
Sent: Sunday, June 21, 2020 5:50 PM
To: Rominger, Kyle <Kyle.Rominger@Illinois.gov>; Smith, Kenn <Kenn.Smith@Illinois.gov>; Richardson, James <James.Richardson@Illinois.gov>
Subject: Question re: Pruim brothers

Do you recall if we ever denied a permit to the Pruim brothers, or to one of their companies, for felony convictions, pursuant to 39(i)? I thought we had, but I can't remember exactly.

Also, do you know of any other times that BOL would've denied a permit pursuant to 39(i)?

Thanks!

John J. Kim
Director
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-9540
E-mail: john.j.kim@illinois.gov

Pink

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

217/524-3300

CERTIFIED MAIL
7099 3400 0001 2084 2603
7099 3400 0001 2084 2573

May 11, 2001

OWNER
City of Morris
Attn: Mayor Dick Kopczick
320 Wauponsee Street
Morris, Illinois 60450

OPERATOR
Community Landfill Company
Attn: Mr. Robert J. Pruim
13903 South Ashland
Riverdale, Illinois 60827

Re: 0630600001 -- Grundy County
Community Landfill
Log No. 2000-438
Permit File

RELEASABLE
Reviewer_____ Date _____

Dear Mayor Kopczick and Mr. Pruim:

This will acknowledge receipt of your application for a significant modification of the above referenced solid waste management site dated November 27, 2000, February 23, 2001, March 14, 2001, April 9, 2001, and April 12, 2001, and received by the Illinois EPA on November 27, 2000, February 23, 2001, March 14, 2001, April 11, 2001, and April 16, 2001 (via facsimile April 12, 2001), respectively.

Your permit application, referenced as Application Log No. 2000-438 is denied. Specifically, Application Log No. 2000-438 submits the Acceptance Report for the construction of the separation layer and consequently, requests authorization to accept waste for disposal in the constructed area in Parcel A.

You have failed to provide proof that granting this permit would not result in violations of the Illinois Environmental Protection Act (Act). Section 39(a) of the Act [415 ILCS 5/39(a)] requires the Illinois EPA to provide the applicant with specific reasons for the denial of permit. The following reason(s) are given:

1. Pursuant to 35 IAC Section 811.700 (f), no person shall conduct waste disposal operation at a MSWLF that requires a permit under Sections 21(d)(1) and 21(d)(2) of the Act unless the person complies with financial assurance requirements of Part 811. The financial assurance documents submitted by Community Landfill Corp. and the City of Morris do not comply with the requirements of 35 Ill. Adm. Code 811.712(b). Effective June 1, 2000, Frontier Insurance Company was removed from the list of sureties that are approved

by the U.S. Department of the Treasury as an acceptable surety (acceptable sureties are listed in the U.S. Department of the Treasury's Circular 570). Section 811.712(b) requires, among other things, that the surety company issuing a bond for financial assurance must be approved by the U.S. Department of the Treasury as an acceptable surety. Therefore, this facility is not in compliance with 35 IAC Section 811.700(f).

2. Pursuant to Section 39(i)(2) of the Act [415 ILCS 5/39(i)(2)], the Illinois EPA may deny a permit if the owner or operator has a history of conviction of a felony in federal court. In accordance with Section 39(i) of the Act, the Illinois EPA conducted an evaluation of Community Landfill Corporation's prior experience in waste management operations. Based on the felony conviction of Robert J. Prium, which is directly related to the management of waste in Illinois, the Illinois EPA, by the authority granted in Section 39(i) of the Act is denying this permit. Mr. Robert J. Pruim was convicted in federal court of a felony in the case of U.S.A. v. Pruim, et al., No. 93-CR-682 (Dist. Ct. N-IL).

Within 35 days after the date of mailing of the Illinois EPA's final decision, the applicant may petition for a hearing before the Illinois Pollution Control Board to contest the decision of the Illinois EPA, however, the 35-day period for petitioning for a hearing may be extended for a period of time not to exceed 90 days by written notice provided to the Board from the applicant and the Illinois EPA within the 35-day initial appeal period.

Should you wish to reapply or have any questions regarding this application, please contact Christine Roque of my staff at 217/524-3299.

Sincerely,

Joyce L. Munie, P.E.
Manager, Permit Section
Bureau of Land

CJL
JLM:CMR\mls\012353s.DOC
CMR

cc: R. Michael McDermont, P.E., Andrews Environmental Engineering, Inc.
Grundy County Office of Solid Waste Management

bcc: Bureau File
Des Plaines Region
John Kim
Blake Harris
Chris Liebman
Joyce Munie
Christine Roque

Layman, Robb

From: Kim, John J.
Sent: Monday, June 22, 2020 8:44 AM
To: Layman, Robb
Subject: Fw: Question re: Pruim brothers

And another example.

John J. Kim
Director
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276
(217) 782-9540
E-mail: john.j.kim@illinois.gov

From: Richardson, James <James.Richardson@Illinois.gov>
Sent: Monday, June 22, 2020 8:41 AM
To: Kim, John J. <John.J.Kim@Illinois.gov>; Rominger, Kyle <Kyle.Rominger@Illinois.gov>; Smith, Kenn <Kenn.Smith@Illinois.gov>
Cc: Jennings, James M. <James.M.Jennings@illinois.gov>
Subject: RE: Question re: Pruim brothers

Jennings' group has denied a hauling permit recently and an operator cert for 39(i) reasons. Greg

---

From: Kim, John J. <John.J.Kim@Illinois.gov>
Sent: Sunday, June 21, 2020 5:50 PM
To: Rominger, Kyle <Kyle.Rominger@Illinois.gov>; Smith, Kenn <Kenn.Smith@Illinois.gov>; Richardson, James <James.Richardson@Illinois.gov>
Subject: Question re: Pruim brothers

Do you recall if we ever denied a permit to the Pruim brothers, or to one of their companies, for felony convictions, pursuant to 39(i)? I thought we had, but I can't remember exactly.

Also, do you know of any other times that BOL would've denied a permit pursuant to 39(i)?

Thanks!

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Director

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