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

A864038245

FACILITY: AK STEEL - DEARBORN WORKS		**SRN / ID:** A8640
LOCATION: 4001 MILLER ROAD, DEARBORN		**DISTRICT:** Detroit
CITY: DEARBORN		**COUNTY:** WAYNE
CONTACT: James E. Earl , Environmental Manager		**ACTIVITY DATE:** 12/20/2016
STAFF: Katherine Koster	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: FY 2017 Scheduled Inspection - LRF #1 and#2 and Degas		
RESOLVED COMPLAINTS:		

Reason for Inspection: Targeted Inspection
Level of Inspection: PCE
Inspected by: Katie Koster, AQD
Personnel Present: Jim Earl, Environmental Manager; Dave Pate, Environmental Engineer
Facility phone number: 313-845-3217
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FACILITY BACKGROUND

AK Steel – Dearborn Works (formerly Severstal Dearborn, LLC) is an integrated iron and steel mill which primarily produces flat rolled coils. The facility is operating at 4001 Miller Road, Dearborn. The previous address, 3001 Miller Road, has been assigned to the Ford Motor Company Rouge Plant which is adjacent to the mill. The company was previously operating under the name Severstal Dearborn, LLC until it became AK Steel Dearborn Works in October 2014. Before being purchased by Severstal in 2004, the company was operating as Rouge Steel.

PROCESS DESCRIPTION
Below includes the processes discussed and/or observed during the inspection. This does not include the entire facility.

The ladle refining facility (LRF) is used for heating, argon stirring, and alloying although not all heats need alloying. LRF #1 is at the north end of the building along with the degas station and LRF #2 is at the south end. Each LRF station is controlled by a baghouse. All heats from the Basic Oxygen Furnace (BOF) Shop pass through the LRF to be "trimmed" before going to the continuous caster. At the BOF, operators try to meet the steel specifications as close as possible, so that when the heats arrive at the LRF there are only minor adjustments that need to be made (”trimming”). About 30-40% of all heats from the BOF are degassed. Degassing produces ultra low carbon steel. Degassing takes about 20 minutes. Carbon monoxide is generated from the degasser and is controlled by a flare. There is an alarm if the pilot light on the flare goes out and there are two pilot lights; a main and a back up.

LRF#1 generally services Continuous Caster #1 which has two lines (Strand 1 and Strand 2). A heat at this station generally takes 30-40 minutes. If a heat has to be degassed (necessary to make ultra low carbon steel), then the alloys will be added at the degas station (and not the LRF). LRF#2 generally services Caster #2 (Strand #3) and a heat takes about 60-90 minutes. At each station, a hood is lowered above the ladle (although there is still a gap between the ladle and hood). Electrodes are lowered through the hood and provide heat (again there is a gap between the electrode and the opening). Argon gas is bubbled in to the steel through a lance.

During processing, the steps are intermittent (heating and stirring occur off and on throughout the cycle). Alloys/materials added include: aluminum wire, aluminum cones, titanium wire, calcium carbide, low carbon Mn, med carbon Mn, lime, and cooling scrap.

LRF#2 is on the south side and is the less frequently used station. It is generally used for high carbon steel and more specialty products. It takes twice as long to run a heat at this station as it only feeds one caster with one strand (Strand #3).

INSPECTION NARRATIVE

I conducted an inspection on December 20, 2016. I met with Mr. Dave Pate and Mr. Jim Earl, AK Steel Environmental Staff. Mr. Earl accompanied me to the LRF building. We started the inspection at LRF#2 as a heat was available for processing. At 10:55 a.m., heating was occurring as the LRF#2 station on Heat #20526. The heat time was going to be approximately 40 minutes. There is an alarm for high pressure drop at the baghouse. I recorded the following pressure drops per compartment: (6) 4.4 in H2O; (5) 4.7; (4) 4.5; (3) 4.5; (2) 4.7; (1) 4.2. The overall pressure drop was 5.2 in H2O. The pressure drops were within the "normal ranges" of 1-8 in H2O per compartment and 2-9 overall. The baghouse inlet temperature was 149F. Cleaning mode was "offline". BLD reading was 6.0% of scale which is well below the alarm trigger. The BLD alarms under the following conditions: 100% reading for 5 consecutive seconds or 30% and above reading for 10 consecutive seconds. Fan inlet was 45% open; fan motor was at 56 amps. The control screen indicates that the baghouse rotary valve was operating. Mr. Pate met us in the control room of LRF#2.

Next, we proceeded to the LRF#1 and the vacuum degasser station. Heat # 58955 was in progress at the LRF. I recorded an overall pressure drop of 6.27 in H20. The individual compartment pressure drops were (2) spark box; (4) 0.37 in H20; (6) 4.95; (1) 4.42; (3) 3.76; (5) 4.01. The pressure drops were within the "normal ranges" of 1-8 in. H2O per compartment and 2-9 overall except for Comp 4 which had just finished cleaning. 0% was the BLD reading. Baghouse draft was 17 in. w.c. Fan damper was open 26% which is tied to inlet pressure. The fans are always on. I did not observe any emissions from the process. The pilot was "on" for the degasser flare according to the control screen.

While outside, I observed both baghouses, the collection bins, and the ductwork. It appeared to be in good condition and I did not observe any holes or cracks or any fugitive emissions. I did not notice any visible emissions from the baghouse stack or the roof monitor of the LRF building.

We returned to the environmental offices and I reviewed compliance records with Mr. Pate. Attached is an email summarizing copies of the records I requested.

RULES/PERMIT CONDITIONS EVALUATED
(Conditions are from PTI 182-05C)
The following conditions apply to: EULADLEREFINE1

DESCRIPTION: No. 1 Ladle refining facility controlled by a baghouse

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Baghouse

I. EMISSION LIMITS

Pollutant	COMPLIANCE STATUS	Limit	Time Period / Operating Scenario	Equipment
1. Visible emissions	IN COMPLIANCE. I did not observe any visible emissions while on site. Also, the certified VE reader has not observed any emission exceedances.	5% Opacity	6-minute average	EULADLEREFINE1 Baghouse stack
2. Visible emissions	IN COMPLIANCE. I did not observe any visible emissions from the roof monitors while on site. Also, the certified VE reader has not observed any emission exceedances.	No visible emissions	Instantaneous	EULADLEREFINE1 Roof monitors

3. Visible emissions	IN COMPLIANCE. I did not observe any visible emissions from the roof monitors while on site. Also, the certified VE reader has not observed any emission exceedances.	20% Opacity	3-minute average	EULADLEREFINE1 Roof Monitors
4. PM	IN COMPLIANCE. Stack test results were 0.0003 gr/dscf**	0.005 gr/dscf	Test Protocol*	EULADLEREFINE1 Baghouse stack
5. PM	IN COMPLIANCE.Stack test results were 0.0003 gr/dscf**	0.01 gr/dscf	Test Protocol*	EULADLEREFINE1 Baghouse stack
6. PM	IN COMPLIANCE.Stack test results were 0.2 lb/hr**	6.33 pph	Test Protocol*	EULADLEREFINE1 Baghouse stack
7. PM10	IN COMPLIANCE.Stack test results were 0.82 lb/hr**	6.65 pph	Test Protocol*	EULADLEREFINE1 Baghouse stack
8. PM2.5	IN COMPLIANCE.Stack test results were 0.82 lb/hr**	6.65 pph	Test Protocol*	EULADLEREFINE1 Baghouse stack
9. Pb	IN COMPLIANCE.Stack test results were 0.004 lb/hr**	0.022 pph	Test Protocol*	EULADLEREFINE1 Baghouse stack

***Test Protocol will specify averaging time.**
**** Note, stack test results from October 31-November 4, 2016 are still undergoing TPU review**

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. **IN COMPLIANCE. Based on the operation and maintenance records, the baghouse appears to be operated in the appropriate manner. The EULADLEREFINE1 and associated baghouse shall be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 CFR Part 63, Subpart FFFFF.**

2. **DID NOT EVALUATE. AQD did not review the SSM plan at this time. The permittee shall develop and implement a written startup, shutdown and malfunction plan for the EULADLEREFINE1 and the associated emission control system and operate in accordance with the plan during periods of startup, shutdown, and malfunction.**

IV. DESIGN/EQUIPMENT PARAMETERS

1. **IN COMPLIANCE. Based on the operation and maintenance records, the baghouse appears to be operated in the appropriate manner. The permittee shall not operate EULADLEREFINE1 unless the baghouse is installed and operating properly.**

V. TESTING/SAMPLING
Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. **IN COMPLIANCE. This condition is related to the Iron and Steel MACT testing requirement for PM. The prior test was conducted in August 2013. The most recent test was conducted in Oct/Nov 2016. Permittee shall conduct performance tests for particulate matter emissions at least once every five years.**

2. **IN COMPLIANCE. During the 2016 stack testing, AQD observed that sampling was only performed when processing heats at the LRF#1. Also, the test report includes the stack testers sampling times and the LRF heat times which are consistent. Sampling during the performance tests will occur only when the operations being controlled are in operation.**

3. **IN COMPLIANCE. Stack testing for all of the listed pollutants was performed on Oct 31- Nov 4 2016 which is within three years of permit issuance, or by May 12, 2017. Dust samples were obtained and Pb levels were reported. The test plan was submitted via email on September 14 and testing started on October 31. The 45 day window was met. The test results were submitted on December 27 which is within 60 days of the test event. Within three years of the issuance of this permit, the permittee shall verify visible emissions, PM, PM10, PM2.5 and Pb emission rates from the EULADLEREFINE1 baghouse stack by testing at owner's expense, in accordance with Department requirements. Subsequent testing will be required once every three years from the completion of the previous stack test. In addition, at the time of the first testing after the date of issuance of this permit, the permittee shall obtain Pb dust concentrations in the EULADLEREFINE1 baghouse hoppers. Subsequent Pb sampling of the baghouse dust is not required. No less than 45 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and the District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results, including baghouse dust analysis for Pb, to the AQD within 60 days following the last date of the test.**

4. **IN COMPLIANCE. At this time, the test is scheduled for February 2017 which is within the three year window or by May 2017. The permittee shall verify the capture efficiency for EULADLEREFINE1 using computational fluid dynamics (CFD) modeling or other approved method within three years of the issuance of this permit. The permittee shall perform CFD modeling or other approved method to verify the capture efficiency every three years thereafter. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD District Office. The AQD must approve the final plan prior to testing. The permittee shall submit a complete report of the analysis results to the AQD within 60 days following the completion of the analysis.**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. **IN COMPLIANCE. The permittee shall complete all required calculations/records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.**

2. **IN COMPLIANCE. AQD performed a review of the Method 9 VE observation records while on site. The required frequency and duration of the readings appears to be met. No corrective actions have been required. The permittee shall perform a Method 9 certified visible emission observation for the EULADLEREFINE1 baghouse stack at least once every month during EULADLEREFINE1 processing activity for a minimum of one complete heat or a maximum of one hour during a heat. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken.**

3. **IN COMPLIANCE. AQD performed a review of the Method 9 VE observation records while on site. The required frequency and duration of the readings appears to be met. No corrective actions have been required. The permittee shall perform Method 9 certified visible emission observation for the EULADLEREFINE1 roof monitors at least once a week during EULADLEREFINE1 operations for a minimum of one complete heat or a maximum of one hour during a heat. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken.**

4. **IN COMPLIANCE. Daily log of pressure drop readings, per compartment and overall, for 2016 is attached. Pressure drop is monitored continuously and recorded once per day for each compartment and overall pressure drop once per week. If the pressure drop is out of range, an investigation is performed and results are noted in the log. Most of the incidents are related to the compartment just finishing a cleaning cycle so the pressure drop is low. The permittee shall monitor the pressure drop across each baghouse compartment daily to ensure that the pressure drop is within the normal operating range identified in the operation and maintenance manual.**

5. IN COMPLIANCE. See below. The permittee shall conduct inspections of the Ladle Refining Baghouse at the specified frequencies according to the requirements in paragraphs (a) through (h) below. The permittee shall maintain records needed to document conformance with these requirements.

a. Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual. Pressure drop is monitored and evaluated for potential problems. See attached log.
b. Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms. Contractor cleans hoppers on a weekly basis. A receipt is generated and maintained by AK Steel. An example is attached. A sampling of receipts was presented during the on-site inspection.
c. Check the compressed air supply for pulse-jet baghouses each day. See attached log. Compressed air supply pressure is monitored continuously and recorded once per day.
d. Monitor cleaning cycles to ensure proper operation using an appropriate methodology. Cleaning cycles are trended.
e. Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means. Monthly inspections for 2015 and 2016 of this baghouse are attached.
f. Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or laying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices. N/A. This is a pulse jet baghouse.
g. Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks. Quarterly inspections for 2015 and 2016 are attached. When there is a hole in a bag, it is removed and the opening is capped. The bag is not necessarily changed at that time.
h. Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means. Quarterly inspections for 2015 and 2016 are attached.

6. IN COMPLIANCE. Except as allowed in S.C. VI.8, the permittee shall install, operate, and maintain a bag leak detection system meeting the following specifications on the baghouse control:

a. Certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic foot (0.0044 grains per actual cubic foot).
b. Provides output of relative changes in particulate matter loadings.
c. Is equipped with an alarm, located such that it is heard by appropriate plant personnel that sounds an alarm when an increase in relative particulate loadings is detected over a preset level.
d. Initially adjusted by establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device and setting the alarm set points and alarm delay time.

7. DID NOT EVALUATE. At this time, according to the facility, the BLD system has not been adjusted. However, it is unclear what operation and maintenance plan this condition is referring to as the LRF baghouses are not required to have an O&M per 63.7800(b). Following the initial adjustment of the bag leak detection system, the permittee shall not adjust the sensitivity or range, averaging period, alarm set points or alarm delay time except as specified in the operation and maintenance plan. This requirement does not apply if the permittee installs COMS as specified in S.C. VI.8.

8. NOT APPLICABLE. A bag leak detection system is installed. If permittee does not install and operate a bag leak detection system, the permittee shall install, operate, and maintain a COMS according to the requirements in 40 CFR Sec. 63.7831(h) and monitor the hourly average opacity of emissions exiting each control device stack according to the requirements in 40 CFR 63.7832.

9. IN COMPLIANCE. Process appears to be monitored properly. The permittee shall monitor the process as required by 40 CFR 63, Subpart FFFFF, except during monitoring malfunctions, out-of-control periods, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments).

10. IN COMPLIANCE. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used in data averages and calculations used to report emission or operating levels or to fulfill minimum data availability requirements.

11. IN COMPLIANCE. Records are maintained and are attached. One alarm was experienced in 2015 and two in 2016. Facility appears to have taken appropriate and timely corrective action, when needed. The permittee shall maintain records of the time corrective action was initiated, the corrective action taken, and the date when corrective actions were completed in response to a bag leak detection system alarm.

12. IN COMPLIANCE. Company maintains sensitivity has not been changed. If the sensitivity of the bag leak detection system is changed beyond the limits established pursuant to 40 CFR 63.7831(f)(6), a copy of a written certification by a responsible official shall be included in the semiannual compliance report for that period. This requirement does not apply if the permittee installs COMS as specified in S.C. VI.8.

13. DID NOT EVAULATE. Did not verify the facility internal files. Company certifies compliance with this condition on a semi annual basis. The permittee shall maintain a copy of each notification and report submitted under 40 CFR Part 63, Subpart FFFFF, including all documentation supporting the initial notification or notification of compliance status submitted according to 40 CFR 63.10(b)(2)(xiv)).

14. DID NOT EVAULATE. Did not verify the facility internal files. Company certifies compliance with this condition on a semi annual basis. The permittee shall maintain the records required for startup, shutdown and malfunction under 63.6(e)(3)(iii) through (v).

15. DID NOT EVAULATE. Did not verify the facility internal files. Company certifies compliance with this condition on a semi annual basis. The permittee shall maintain records associated with performance tests, and performance evaluations as required by 40 CFR 63.10(b)(2)(viii).

VII. REPORTING

1. DID NOT EVAULATE. Permittee shall submit a notification of intent to perform any performance testing under 40 CFR Part 63, Subpart FFFFF at least 60 calendar days before testing is to begin.

2. NOT APPLICABLE. No SSM events have been reported. When actions taken by the permittee during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are not consistent with the procedures in the startup, shutdown, and malfunction plan, the permittee shall comply with the requirements of 63.10(d)(5)(ii).

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)
1. SVLADELREFINE1	108	148

IN COMPLIANCE. Stack appears to meet the specified dimensions. Exhaust gas is discharged unobstructed vertically upwards.

IX. OTHER REQUIREMENTS

1. IN COMPLIANCE. Based on conditions evaluated in this report, facility appears to be complying with emission limits and O&M requirements in the MACT for the LRF#1.
The permittee shall comply with the emission limitations and operation and maintenance requirements from 40 CFR Part 63, Subpart FFFFF, except during periods of startup, shutdown and malfunction.

2. IN COMPLIANCE. Records are on site for the most recent two year period. Did not evaluate the last five year period. Records required under 40 CFR Part 63, Subpart FFFFF and specified in this section shall be retained for five years. The records must be maintained onsite for the two most recent years of the five year period. Records from the remaining three years of the five year period may be keep offsite.

3. IN COMPLIANCE. Compliance determination is based on conditions evaluated in this report which contain the substantive provisions of the MACT related to the LRFs is included. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart FFFFF for Integrated Iron and Steel

Manufacturing by the initial compliance date.

The following conditions apply to:

EULADLEREFINE2

DESCRIPTION: No. 2 Ladle refining facility controlled by a baghouse.

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: Baghouse

I. EMISSION LIMITS

Pollutant	COMPLIANCE STATUS	Limit	Time Period / Operating Scenario	Equipment
1. Visible emissions	IN COMPLIANCE. I did not observe any visible emissions while on site. Also, the certified VE reader has not observed any emission exceedances.	5% Opacity	6-minute average	EULADLEREFINE2 Baghouse stack
2. Visible emissions	IN COMPLIANCE. I did not observe any visible emissions from the roof monitors while on site. Also, the certified VE reader has not observed any emission exceedances.	No visible emissions	Instantaneous	EULADLEREFINE2 Roof monitors
3. Visible emissions	IN COMPLIANCE. I did not observe any visible emissions from the roof monitors while on site. Also, the certified VE reader has not observed any emission exceedances.	20% Opacity	3-minute average	EULADLEREFINE2 Roof monitors
4. PM	IN COMPLIANCE. Stack test results were 0.0005 gr/dscf**	0.005 gr/dscf	Test Protocol*	EULADLEREFINE2 Baghouse stack
5. PM	IN COMPLIANCE. Stack test results were 0.0005 gr/dscf**	0.01 gr/dscf	Test Protocol*	EULADLEREFINE2 Baghouse stack
6. PM	IN COMPLIANCE. Stack test results were 0.25 lb/hr**	3.72 pph	Test Protocol*	EULADLEREFINE2 Baghouse stack
7. PM10	IN COMPLIANCE. Stack test results were 0.47 lb/hr**	3.91 pph	Test Protocol*	EULADLEREFINE2 Baghouse stack
8. PM2.5	IN COMPLIANCE. Stack test results were 0.47 lb/hr**	3.91 pph	Test Protocol*	EULADLEREFINE2 Baghouse stack
9. Pb	IN COMPLIANCE. Stack	0.013 pph	Test Protocol*	EULADLEREFINE2

	test results were 0.002 lb/hr**			Baghouse stack

*Test Protocol will specify averaging time. ** Note, stack test results from October 31-November 4, 2016 are still undergoing TPU review

II. MATERIAL LIMITS

NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. IN COMPLIANCE. Based on the operation and maintenance records, the baghouse appears to be operated in the appropriate manner. The EULADLEREFINE2 and associated baghouse shall be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions at least to the levels required by 40 CFR Part 63, Subpart FFFFF.

2. DID NOT EVALUATE. AQD did not review the SSM plan at this time. The permittee shall develop and implement a written startup, shutdown and malfunction plan for the EULADLEREFINE2 and the associated emission control system and operate in accordance with the plan during periods of startup, shutdown, and malfunction.

IV. DESIGN/EQUIPMENT PARAMETERS

1. IN COMPLIANCE. Based on the operation and maintenance records, the baghouse appears to be operated in the appropriate manner. The permittee shall not operate EULADLEREFINE2 unless the baghouse is installed and operating properly

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years.

1. IN COMPLIANCE. This condition is related to the Iron and Steel MACT testing requirement for PM. The prior test was conducted in 2013. Most recent test conducted in October/November 2016. Permittee shall conduct performance tests for particulate matter emissions at least once every five years.

2. IN COMPLIANCE. During the 2016 stack testing, AQD observed that sampling was only performed when processing heats at the LRF#2. Also, the test report includes the stack testers sampling times and the LRF heat times which are consistent. Sampling during the performance tests will occur only when the operations being controlled are in operation.

3. IN COMPLIANCE. Stack testing for all of the listed pollutants was performed on Oct 31- Nov 4 2016 which is within three years of permit issuance, or by May 12, 2017. Dust samples were obtained and Pb levels were reported. The test plan was submitted via email on September 14 and testing started on October 31. The 45 day window was met. The test results were submitted on December 27 which is within 60 days of the test event. Within three years of the issuance of this permit, the permittee shall verify visible emissions, PM, PM10, PM2.5 and Pb emission rates from the EULADLEREFINE2 baghouse stack by testing at owner's expense, in accordance with Department requirements. Subsequent testing will be required once every three years from the completion of the previous stack test. In addition, at the time of the first testing after the date of issuance of this permit, the permittee shall obtain Pb dust concentrations in the EULADLEREFINE2 baghouse hoppers. Subsequent Pb sampling of the baghouse dust is not required. No less than 45 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and the District Office. The AQD must approve the final plan prior to testing. Verification of emission rates includes the submittal of a complete report of the test results, including baghouse dust analysis for Pb, to the AQD within 60 days following the last date of the test.

4. IN COMPLIANCE. At this time, the test is scheduled for February 2017 which is within the three year

window or by May 2017. The permittee shall verify the capture efficiency for EULADLEREFINE2 with computational fluid dynamics (CFD) modeling or other approved method within three years of the issuance of this permit. The permittee shall perform CFD modeling or other approved method to verify the capture efficiency every three years thereafter. No less than 60 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and the District Office. The AQD must approve the final plan prior to testing. The permittee shall submit a complete report of the analysis results to the AQD within 60 days following the completion of the analysis.

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years. (R 336.1201(3))

1. **IN COMPLIANCE. The permittee shall complete all required calculations/records in a format acceptable to the AQD District Supervisor and make them available by the last day of the calendar month, for the previous calendar month, unless otherwise specified in any monitoring/recordkeeping special condition.**

2. **IN COMPLIANCE. AQD performed a review of the Method 9 VE observations while on site. The required frequency and duration of the readings appears to be met. No corrective actions have been required. The permittee shall perform a Method 9 certified visible emission observation for the EULADLEREFINE2 baghouse stack at least once every month during EULADLEREFINE2 processing activity for a minimum of one complete heat or a maximum of one hour during a heat. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken.**

3. **IN COMPLIANCE. AQD performed a review of the Method 9 VE observations while on site. The required frequency and duration of the readings appears to be met. No corrective actions have been required. The permittee shall perform a Method 9 certified visible emission observation for the EULADLEREFINE2 roof monitors at least once a week during EULADLEREFINE2 operations for a minimum of one complete heat or a maximum of one hour during a heat. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action taken.**

4. **IN COMPLIANCE. Daily log of pressure readings for 2016 is attached. Pressure drop is monitored continuously and recorded once per day per compartment and overall pressure drop is recorded once per week. If the pressure drop is out of range, an investigation is performed and results are noted in the log. Most of the incidents are related to the compartment just finishing a cleaning cycle so the pressure drop is low. The permittee shall monitor the pressure drop across each baghouse compartment daily to ensure that the pressure drop is within the normal operating range identified in the operation and maintenance manual.**

5. **IN COMPLIANCE. See below. The permittee shall conduct inspections of the Ladle Refining Baghouse at the specified frequencies according to the requirements in paragraphs (a) through (h) below. The permittee shall maintain records needed to document conformance with these requirements.**

   a. **Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual. Pressure drop is monitored and evaluated for potential problems. See attached log.**
   b. **Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms. Contractor cleans hoppers on a weekly basis. A receipt is generated and maintained by AK Steel. An example is attached. A sampling of receipts was presented during the on-site inspection.**
   c. **Check the compressed air supply for pulse-jet baghouses each day. See attached log. Compressed air supply pressure is monitored continuously and recorded once per day.**
   d. **Monitor cleaning cycles to ensure proper operation using an appropriate methodology. Cleaning cycles are trended.**
   e. **Check bag cleaning mechanisms for proper functioning through monthly visual inspection or equivalent means. Monthly inspections for 2015 and 2016 of this baghouse are attached.**
   f. **Make monthly visual checks of bag tension on reverse air and shaker-type baghouses to ensure that bags are not kinked (kneed or bent) or laying on their sides. You do not have to make this check for shaker-type baghouses using self-tensioning (spring-loaded) devices. N/A. This is a**

pulse jet baghouse.

g. Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks. Quarterly inspections for 2015 and 2016 are attached. When there is a hole in a bag, it is removed and the opening is capped. The bag is not necessarily changed at that time.

h. Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means. Quarterly inspections for 2015 and 2016 are attached.

6. IN COMPLIANCE. Except as allowed in S.C. VI.8, the permittee shall install, operate, and maintain a bag leak detection system meeting the following specifications on the baghouse control:

a. Certified by the manufacturer to be capable of detecting emissions of particulate matter at concentrations of 10 milligrams per actual cubic foot (0.0044 grains per actual cubic foot).
b. Provides output of relative changes in particulate matter loadings.
c. Is equipped with an alarm, located such that it is heard by appropriate plant personnel that sounds an alarm when an increase in relative particulate loadings is detected over a preset level.
d. Initially adjusted by establishing the baseline output by adjusting the sensitivity (range) and the averaging period of the device and setting the alarm set points and alarm delay time.

7. DID NOT EVALUATE. At this time, according to the facility, the BLD system has not been adjusted. However, it is unclear what operation and maintenance plan this condition is referring to as the LRF baghouses are not required to have an O&M per 63.7800(b). Following the initial adjustment of the bag leak detection system, the permittee shall not adjust the sensitivity or range, averaging period, alarm set points or alarm delay time except as specified in the operation and maintenance plan. This requirement does not apply if the permittee installs COMS as specified in S.C. VI.8.

8. NOT APPLICABLE. A BLD system is installed. If permittee does not install and operate a bag leak detection system, the permittee shall install, operate, and maintain a COMS according to the requirements in 40 CFR Sec. 63.7831(h) and monitor the hourly average opacity of emissions exiting each control device stack according to the requirements in 40 CFR 63.7832.

9. IN COMPLIANCE. Process appears to be monitored properly. The permittee shall monitor the process as required by 40 CFR 63, Subpart FFFFF, except during monitoring malfunctions, out-of-control periods, associated repairs, and required quality assurance or control activities (including calibration checks and required zero and span adjustments).

10. IN COMPLIANCE. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used in data averages and calculations used to report emission or operating levels or to fulfill minimum data availability requirements.

11. IN COMPLIANCE. Records are maintained and are attached. No alarms were experienced at LRF#2 for 2015 or 2016. The permittee shall maintain records of the time corrective action was initiated, the corrective action taken, and the date when corrective actions were completed in response to a bag leak detection system alarm.

12. IN COMPLIANCE. Company maintains sensitivity has not been changed. If the sensitivity of the bag leak detection system is changed beyond the limits established pursuant to 40 CFR 63.7831(f)(6), a copy of a written certification by a responsible official shall be included in the semiannual compliance report for that period. This requirement does not apply if the permittee installs COMS as specified in S.C. VI.8.

13. DID NOT EVALUATE. Did not verify the facility internal files. Company certifies compliance with this condition on a semi annual basis. The permittee shall maintain a copy of each notification and report submitted under 40 CFR Part 63, Subpart FFFFF, including all documentation supporting the initial notification or notification of compliance status submitted according to 40 CFR 63.10(b)(2)(xiv)).

14. DID NOT EVALUATE. Did not verify the facility internal files. Company certifies compliance with this condition on a semi annual basis. The permittee shall maintain the records required for startup, shutdown and malfunction under 63.6(e)(3)(iii) through (v).

15. DID NOT EVALUATE. Did not verify the facility internal files. Company certifies compliance with this condition on a semi annual basis. The permittee shall maintain records associated with performance tests, and performance evaluations as required by 40 CFR 63.10(b)(2)(viii).

VII. REPORTING

1. DID NOT EVALAUTE. Permittee shall submit a notification of intent to perform any performance testing under 40 CFR Part 63, Subpart FFFFF at least 60 calendar days before testing is to begin.

2. **NOT APPLICABLE. No SSM events have been reported. When actions taken by the permittee during a startup, shutdown, or malfunction of an affected source (including actions taken to correct a malfunction) are not consistent with the procedures in the startup, shutdown, and malfunction plan, the permittee shall comply with the requirements of 63.10(d)(5)(ii)**

VIII. STACK/VENT RESTRICTIONS

The exhaust gases from the stacks listed in the table below shall be discharged unobstructed vertically upwards to the ambient air unless otherwise noted:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)
1. SVLADELREFINE2	72	150

IN COMPLIANCE. Stack appears to meet the specified dimensions. Exhaust gas is discharged unobstructed vertically upwards.

IX. OTHER REQUIREMENTS

1. **IN COMPLIANCE. Based on conditions evaluated in this report, facility appears to be complying with the emission limits and O&M requirements in the MACT for LRF#2. The permittee shall comply with the emission limitations and operation and maintenance requirements from 40 CFR Part 63, Subpart FFFFF, except during periods of startup, shutdown and malfunction.**

2. **IN COMPLIANCE. Records are on site for the most recent two year period. Did not evaluate the last five year period. Records required under 40 CFR Part 63, Subpart FFFFF and specified in this section shall be retained for five years. The records must be maintained onsite for the two most recent years of the five year period. Records from the remaining three years of the five year period may be keep offsite.**

3. **IN COMPLIANCE. Compliance determination is based on conditions evaluated in this report. Review of the MACT indicates that the substantive provisions of the MACT related to the LRFs are included. The permittee shall comply with all applicable provisions of the National Emission Standards for Hazardous Air Pollutants, as specified in 40 CFR Part 63, Subpart A and Subpart FFFFF for Integrated Iron and Steel Manufacturing by the initial compliance date.**

VACCUUM DEGAS (from the ROP)
DESCRIPTION Vacuum degasser
Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT
Flare

I. EMISSION LIMIT(S)

Pollutant	Compliance status	Limit	Time Period/ Operating Scenario	Equipment
1. Carbon monoxide	IN COMPLIANCE. Based on the 2009 stack test, the average hourly emissions are 0.71 lb/hr.	1. 2.42 lb/hr[2]	Based upon a flare destruction efficiency of 99.5%	Vacuum degasser
	IN COMPLIANCE. For the 2015 MAERS report, pounds of CO	2. 10.08 tons per year[2]	Yearly	Vacuum degasser

	emitted were 772 which is less than 1 ton. For 2016, based on the hours of operation, emissions were 1249 pounds which is also less than one ton.			
2. Visible emissions	IN COMPLIANCE. No visible emission were observed during the on site inspection or by the certified VE reader.	No visible emissions[2]	6 minute average	Vacuum degasser

II. MATERIAL LIMIT(S)

NA

III. PROCESS/OPERATIONAL RESTRICTION(S)

1. **IN COMPLIANCE. There is a primary and back up flare. An alarm is triggered if the pilot to the flare goes off. The vacuum degasser shall not be operated unless the flare is installed and operating properly.**

2. **IN COMPLIANCE. For 2015, total hours of operation were 1088. For 2016, total hours of operation were 1759.5. The vacuum degasser shall not be operated more than 8,350 hours per year.**

IV. DESIGN/EQUIPMENT PARAMETER(S)

NA

V. TESTING/SAMPLING

Records shall be maintained on file for a period of five years. (R 336.1213(3)(b)(ii))

1. **IN COMPLIANCE. Test was conducted in 2009. Facility is interpreting this condition to mean that the ROP was renewed in 2016 and therefore, the five year cycle has restarted. The permittee shall conduct a carbon monoxide emission test at least once during the five year life cycle of this permit. Performance of the stack test shall be according to the schedule stipulated in the Source Wide requirements SC V.1 of this section or more frequently upon the request of the AQD. No less than 30 days prior to testing, a complete stack test protocol must be submitted to the AQD for approval. The final plan must be approved by the AQD prior to testing.**

VI. MONITORING/RECORDKEEPING

Records shall be maintained on file for a period of five years.

1. **IN COMPLIANCE. a and b are attached; c is continuously monitored and an alarm it triggered if the pilot goes out. I observed the monitoring in place on the operator's pulpit during the inspection. The permittee shall record the following information:**
   a. **Number of heats processed by the vacuum degasser, monthly.**
   b. **Total hours of operation for the vacuum degasser per month.**
   c. **Monitor the pilot light status daily.**

2. **IN COMPLIANCE. No emissions have been observed by the certified reader. The permittee shall perform a Method 9 certified visible emission observation of the vacuum degasser operation at least once every quarter during the processing activity. The permittee shall initiate corrective action upon observation of visible emissions in excess of the applicable visible emission limitation and shall keep a written record of each required observation and corrective action.**

VII. REPORTING

IN COMPLIANCE. Conditions 1 through 3 are the general Title V reporting conditions.

There are no stack restrictions or other requirements.

COMPLIANCE DETERMINATION
At this time, facility appears to be in compliance with the conditions evaluated in this report.

NAME Katherine Kolb DATE 3/29/17 SUPERVISOR W. M