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

A864067438

FACILITY: Cleveland-Cliffs Steel Corporation Dearborn Works		**SRN / ID:** A8640
LOCATION: 4001 MILLER ROAD, DEARBORN		**DISTRICT:** Detroit
CITY: DEARBORN		**COUNTY:** WAYNE
CONTACT: Dave Pate , Environmental Engineer		**ACTIVITY DATE:** 05/17/2023
STAFF: Katherine Koster	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: Targeted Inspection - BOF capture and VE evaluation on 5/17/23 HDGL and Pickle Line inspection on 8/29/23		
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
Cleveland Cliffs (formerly AK Steel – Dearborn Works) is an integrated iron and steel mill which primarily produces steel slabs and performs finishing operations on flat rolled coils. Historically, the plant produced the flat rolled coils but the hot strip mill has been idled. 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 has previously operated as AK Steel, Severstal Dearborn, LLC, and Rouge Steel.

COMPLAINT/COMPLIANCE HISTORY
No complaints have been received related to the emission units evaluated in this report.

OUTSTANDING CONSENT ORDERS
There are no active consent orders related to the pickle line or hot dip galvanizing line.

OUTSTANDING VNs
There are no outstanding violation notices related to the equipment that was inspected.

INSPECTION NARRATIVE
On May 17, 2023, AQD staff Katie Koster, Jon Lamb, and Jeremy Howe, arrived at Cliffs around 9:30 a.m. Stack testing was finished for the day. However, Dave Pate, Cliffs, accompanied us on a walkthrough of the BOF asic Oxygen Furnace (BOF) shop. We observed Ladle 9 proceed through the process. First, we observed the reladle. There was good capture by the removable hood while transferring iron from the torpedo car to the ladle. Next we observed desulfurization and slag skimming. There were some moderate fugitive emissions from the hood rising toward the roof monitor during desulfurization (although it appeared to be the same amount as normal), and then we observed scrap charge and hot metal charge on A vessel (emissions were well captured by the hood). We spent some time in the control room, and I observed the large operator screen that was a camera view of the roof monitor. We walked outside and observed tapping of the furnace which included alloy addition. Emissions seemed to be well captured by the hood. Note, the ESP was completely replaced by March 2023. Consent decree negotiations are still ongoing related to failed Mn, Pb stack tests, opacity exceedances recorded by the COMS, and roof monitor opacity exceedances.

AQD inspector, Katie Koster, returned to the facility on August 29, 2023. I was accompanied about the facility by Mr. Dave Pate, Environmental Engineer. The pickle line current operating schedule is 4 days per week. The pickling line was down. We viewed the outside acid storage area which includes five fresh acid tanks, two spent acid tanks, and 1 inhibitor tank. All tank shells appeared to be in good condition. Several trucks of fresh acid are received each day. The ATF scrubber controls emissions from the outside acid storage tanks. Acid unloading was occurring while we were present. I recorded a value of 2.8 in w.c for the pressure drop. Mr. Pate explained that there are permissives that prevent loading/unloading if scrubber parameters are out of spec.

We also went to the Hot Dip Galvanizing line. The hot dip line operates 24 hours a day, 365 days per year. Steel coils are unwound and welded together to form a strip. Next, the strip is cleaned, annealed, and coated with zinc for rust prevention. PM emissions from the cleaning process are controlled by a water scrubber.

NOx emissions from the annealing furnace are controlled by a selective catalytic reduction (SCR) system with urea injection. Steel that will be used in exposed automotive parts is zinc coated. After zinc coating and drying, a rust preventative oil is applied electrostatically and the strip is recoiled. Two times per month they have scheduled down time to switch zinc pots, and there are typically two 5 day outages per year. There are approximately 100 FTEs for this process. All coils processed have been pickled onsite. The hot dip processes about 35-40 coils per day while the pickle line processes around 170 coils per day. On the current day, the line speed was 92.6 tons/hr and the steel thickness was 1.4 and width was 1566 mm. They alternate making galvanized and galvannealed steel.
In the pulpit, I recorded the following parameters:
Inlet T to the SCR: 319 C (prior was 308C); set points 285-330
Urea flow: 5.14 (prior was 1.78 liters per hour); set point 0.3-9.5
NOx: 6.82 ppm (prior 6.46 ppm outlet); set points 1-17 ppm
Calibration gas for analyzers was onsite and supplied by Thermo Environmental.
Demister pressure drop (mm wc): 17.86 (prior was 29.40). Set points are min 3; max is 75
Demister water spray: 17.43 (prior was 24.06 LPM). Set points are min 6; max is 35
We walked to the rust preventative oil spray operation. I checked all the oil temperatures, and they were all below 150F.

RULES/PERMIT CONDITIONS EVALUATED
The Hot Dip Galvanizing Line, and other equipment, is operating under PTI 120-16. This equipment was previously permitted under 8-08 along with the pickle line and other related equipment. This permit, 120-16, was for minor administrative changes to reflect the actual constructed configuration of the hot dip line. Permit changes needed were to indicate that the hot water heaters for the precleaner process exhaust through the SCR stack but are not controlled by the SCR and to move the natural gas fired dryers to another emission unit. No emission limits were changed.

EUHDGCLEANER
DESCRIPTION: Hot dip galvanizing line (HDGL) pre-cleaning process
Flexible Group ID: FGFGHDGLVOC
POLLUTION CONTROL EQUIPMENT: Water scrubber to remove caustic
I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method
1. PM10 (caustic) (filterable)	0.441 pph	Test Protocol	EUHDGLCLEANER	SC V.1

IN COMPLIANCE. The stack test was conducted on November 16, 2022. Results based on a three run average as reported were 0.092 lb/hr for PM-10 (filterable plus condensable) and 0.033 filterable only. Note, the emission limit only applies to filterable PM10 although at the time of permit issuance PM10 was meant to include condensable. The stack test results indicate compliance with and without condensables.

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS
1. The permittee shall not operate the EUHDGLCLEANER HDGL pre-cleaning process unless the water scrubber is installed and operating properly. A minimum water flow rate, as determined during performance testing, shall be maintained. The permittee shall install a flow monitor to measure the water flow rate to the EUHDGLCLEANER scrubber and a means to continuously monitor pressure drop across the scrubber.
IN COMPLIANCE. Minimum flow rate established during the stack test was 6.3 liter/min. A flow and pressure drop monitor is installed to measure these parameters on a continuous basis. The flow rate records are attached and demonstrate that the flow rate has been maintained above the minimum. Scrubber maintenance records were provided (attached) to demonstrated that the scrubber is maintained and operating properly.

IV. DESIGN/EQUIPMENT PARAMETERS
1. The permittee shall implement and maintain a malfunction abatement plan (MAP) for the EUHDGLCLEANER HDGL line, including the pre-cleaning process equipment and the associated emission control system (water scrubber) and operate in accordance with the plan. If at any time the MAP fails to

address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.

IN COMPLIANCE. A MAP for the equipment mentioned in this condition was submitted in March 2016. The MAP was approved by default after 90 days. Records reviewed for the HDGL line indicate that maintenance is performed at the frequency outlined in the MAP.

V. TESTING/SAMPLING

1. At least once every ROP permit term the permittee shall conduct a particulate matter emission test from the EUHDGLCLEANER water scrubber stack, while in operation to control the caustic cleaning operation. No less than 30 days prior to testing, a complete stack test protocol must be submitted to the AQD District Office for approval. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test

IN COMPLIANCE. Testing was performed in 2012, 2017, and 2022. The company believes that the next test is due during the next ROP permit term will not occur until the ROP is renewed. AQD's position is that the phrase "once every ROP term" means once every 5 years. This needs to be clarified in the next ROP modification. Regardless, facility is meeting the once every five years schedule.

VI. MONITORING/RECORDKEEPING

1. The permittee shall keep records of the following EUHDGLCLEANER information and shall make these records available to the AQD upon request:

a) The water flow rate reading of the water scrubber on a daily basis

IN COMPLIANCE. Records of water flow rate are maintained and recorded on a daily basis and were presented. See attached.

2. The permittee shall monitor and maintain, on a continuous basis, a water flow rate to the EUHDGLCLEANER scrubber of no less than the values determined during the initial stack testing that demonstrates compliance with the PM10 emission limit in this table. Records shall be kept of the scrubber water flow rate according to S.C. VI.1.

IN COMPLIANCE. The minimum water flow rate set point established during the stack test in November 2022 was 6.3 liters/min (prior test flow rate established was 8 liters/min). Records provided, based on a once daily reading which is all that is required in S.C. VI.1, indicate the flow rate has been maintained above the minimum value.

3. The permittee shall monitor, on a continuous basis, and record once per shift, the pressure drop across the EUHDGLCLEANER scrubber while the scrubber is operating in order to identify changes that may indicate a need for maintenance. The pressure drop should be within the manufacturer's acceptable range, as identified in the malfunction abatement plan.

IN COMPLIANCE. The allowable pressure drop specified in the MAP is 7.5 to 75 mm H20. Records of the pressure drop are being maintained and recorded once per shift. Based on the pressure drop values in the records, no maintenance activities have been required.

VII. REPORTING NA

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: **DID NOT EVALUATE STACK HEIGHT.**

IX. OTHER REQUIREMENTS NA

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The following conditions apply to: FGPLTCMHDGLHEAT

DESCRIPTION: PLTCM AND HDGL BUILDINGS GAS FIRED HEATERS AND CLIMATE CONTROL

Emission Units: EUPKLTMBLDGHEAT, EUHDGLBLDGHEAT, EUHDGLDRYER

POLLUTION CONTROL EQUIPMENT: NA

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment
1. PM	1.7 tpy	12-month rolling time period as determined	FGPLTCMHDGLHEAT

Pollutant	Limit	Time Period/ Operating Scenario	Equipment
	IN COMPLIANCE. 0.91 was the 12 month rolling total in December 2022. Emissions are calculated using an AP-42 emission factor which is the same for PM and PM10 for natural gas combustion. See attached records.	at the end of each calendar month	
2. PM-10	1.7 tpy **IN COMPLIANCE. 0.91 was the 12 month rolling total in December 2022. Emissions are calculated using an AP-42 emission factor which is the same for PM and PM10 for natural gas combustion. See attached records.**	12-month rolling time period as determined at the end of each calendar month	FGPLTCMHDGLHEAT
3. NOx	21.9 tpy **IN COMPLIANCE. 10.4 tons was the 12 month rolling total in December 2022. See attached records.**	12-month rolling time period as determined at the end of each calendar month	FGPLTCMHDGLHEAT

II. MATERIAL LIMITS

Material	Limit	Time Period / Operating Scenario	Equipment
1. Natural Gas	438 MMcf **IN COMPLIANCE. 208 MMCF was the natural gas usage for 12 month rolling time period ending in December 2022. See attached records.**	12-month rolling time period as determined at the end of each calendar month	FGPLTCMHDGLHEAT

III, IV. V. VII, and VIII and IX - All NA for the conditions.

VI. MONITORING/RECORDKEEPING

1. The permittee shall calculate and record by the end of each calendar month the following from FGPLTCMHDGLHEAT:

a) emissions of PM monthly and 12-month rolling time period
b) emissions of PM-10 monthly and 12-month rolling time period
c) emissions of NOx monthly and 12-month rolling time period

The permittee shall calculate in a satisfactory manner, the annual NOx emissions from FGPLTCMHDGLHEAT, using the current U. S. EPA Compilation of Air Pollutant Emission Factors (AP-42) or other emission factors approved by the Department such as those used in the MAERS.

IN COMPLIANCE. Emission factors in use are from AP-42. The emission factor for PM and PM-10 is identical for natural gas combustion. See attached records.

2. The permittee shall keep monthly and 12-month rolling records of the amount of combined natural gas fired in EUHDGLDRYER, EUPKLTMBLDGHEAT, and EUHDGLBLDGHEAT.

IN COMPLIANCE. See attached records.

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The following conditions apply to: FGHDGLSCR

DESCRIPTION: GAS-FIRED ANNEALING FURNACE AND WATER HEATERS

Emission Units: EUHDGLH2OHEATER, EUHDGLANNEAL

POLLUTION CONTROL EQUIPMENT: Selective Catalytic Reduction control device; EUHDGLH2OHEATER natural gas combustion emissions are ducted uncontrolled (downstream of the SCR) to SVHDGL_SCR.

I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment
1. NOx	3.21 pph **IN COMPLIANCE. Based on the 11/15/22 stack test, NOx emissions were 0.5 lb/hr.**	Test Protocol*	FGHDGLSCR
2. NOx	14.1 tpy **IN COMPLIANCE. 4.37 tons was the 12 month rolling total in December 2022. See attached records.**	12-month rolling time period as determined at the end of each calendar month	FGHDGLSCR
3. PM10	3.6 tpy **IN COMPLIANCE. 1.26 tons was the 12 month rolling total in December 2022. See attached records.**	12-month rolling time period as determined at the end of each calendar month	FGHDGLSCR
4. ammonia (NH_3) CAS No. 7664417	2.19 pph **IN COMPLIANCE. Based on the 11/15/22 stack test, ammonia emissions were 0.35 lb/hr.**	Test Protocol*	FGHDGLSCR

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The SCR unit shall be equipped with an automatic urea feed injection system.

IN COMPLIANCE. An automatic urea feed system is in place and was observed in operation during the inspection. Urea is injected at a variable rate that is based on the NOx outlet concentration reading.

2. The permittee shall not operate the natural gas combustion sources of EUHDGLANNEAL unless the SCR is installed and operating properly.

IN COMPLIANCE. The natural gas combustion sources of EUHDGLANNEAL are only the annealing furnace. The SCR appears to be installed and operating properly. Note, the prior version of the permit (8-08) had the two natural gas fired dryers venting through the SCR system which was not the true configuration of the line after it was installed. Also, the hot water heaters do not exhaust through the SCR but downstream of the SCR through the same stack. The hot water heaters were incorrectly listed as being controlled by the SCR system in the prior permit. A log of the SCR "malfunctions" is attached for 2021-2023 YTD. System appears to be operating properly or maintenance is initiated in a timely manner. Based on maintenance records, it appears that the catalyst was replaced in May 2021.

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall implement and maintain a preventative maintenance (PM) and malfunction abatement plan (MAP) for the SCR control unit. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days if new equipment is installed or upon request from the District Supervisor. The permittee shall submit any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.

IN COMPLIANCE. A revised PM/MAP was submitted in March 2016. It was approved by default after 90 days. It appears to contain the required elements. Maintenance records for the SCR unit indicate that the maintenance frequency outlined in the MAP is being met.

V. TESTING/SAMPLING

1. At least once every ROP permit term the permittee shall verify NOx and ammonia emission rates from SVHDGL_SCR when FGHDGLSCR SCR, EUHDGLANNEAL, and EUHDGLH2OHEATER are in operation by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs Unit and 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 to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.
IN COMPLIANCE. Test was performed in 2013, 2018, and 2022. Testing was performed with the annealing furnace and SCR system in operation as well as the hot water heaters. The phrase "once every ROP permit term" will be clarified in the next ROP modification to read once every 5 years.

VI. MONITORING/RECORDKEEPING
1. The permittee shall record the following information and shall keep them on file for at least five years and make them available to the AQD upon request:
a) Occurrence of abnormal functions of the automatic control system of the automatic urea feed injection system of the SCR.
b) The amount of urea used per day.
IN COMPLIANCE. The required information is maintained. See attached.
2. The permittee shall keep a monthly record of the total amount of natural gas fired in EUHDGLH2OHEATER and EUHDGLANNEAL.
IN COMPLIANCE. See attached records.
3. The permittee shall calculate and record, by the end of each calendar month, the following from FGHDGLSCR:
a) emissions of PM10, monthly and 12-month rolling time period.
b) emissions of NOx, monthly and 12-month rolling time period.
The combined NOx emissions from EUHDGLANNEAL and EUHDGLH2OHEATER shall be calculated based on the data reported under SC V.1.
IN COMPLIANCE. See attached records.

VII. REPORTING NA

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 (inches)	Minimum Height Above Ground (feet)
1. SVHDGL_SCR	48	140

DID NOT EVALUATE.
IX. OTHER REQUIREMENTS NA
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The following conditions apply to: FGHDGLVOC
DESCRIPTION: HDGL SOURCES OF VOC EMISSIONS
Emission Units: EUHDGLCLEANER, EUHDGLSKINPASS, EUHDGLES_OILING
POLLUTION CONTROL EQUIPMENT: NA
I. EMISSION LIMITS

Pollutant	Limit	Time Period/ Operating Scenario	Equipment	Testing / Monitoring Method
1. VOC	10.0 tpy	12-month rolling time period as determined at the end of each calendar month	FGHDGLVOC	SC VI.3

IN COMPLIANCE. From January 2021 through July 2023, the highest 12 month rolling VOC emissions were 9.65 in March 2022. Starting in the 2nd quarter of 2016, the VOC content of each oil is tested quarterly. Emissions are calculated for that quarter with the latest results. See attached records. The emission calculations also include VOC's from the EUHDGLSKINPASS (Qwerl product). There are 5 products in use for EUHDGLCLEANER, EUHDGLSKINPASS, and EUHDGLES_OILING which are Ultraclean ZN, Qwerl, Ferrocote 61, Ferrocote MAL, FUCHS.
In the permit application for the original permit (8-08), the facility estimated the VOC emissions from the electrostatic oiling process using VOC results from a Method 24 analysis. Method 24 specifies an oven curing temperature of 230+/- 9F to determine the VOC emissions. Facility claims that this overstates the actual VOC's emitted from their oiling process as the oil is only heated to 135F on the HDGL. AK Steel contracted with a lab to perform a "modified Method 24" analysis of the oils to establish an "actual" VOC lb/gal value. This

methodology was approved by AQD TPU section on Mach 24, 2016 with several stipulations. See attached letter.

Sections II, III, IV, V, VII, VIII, and IX have NA as the conditions.

VI. MONITORING/RECORDKEEPING

1. The permittee shall keep, in a satisfactory manner, records of the monthly usage, in gallons or pounds, of each VOC containing material used in all of the FGHDGLVOC emission units.
2. The permittee shall keep, in a satisfactory manner, records of the VOC content (in lb VOC/gallon or lb VOC/lb material) of each material used in all of the FGHDGLVOC emission units.
3. The permittee shall determine compliance with emission limit in SC I.1 by calculating VOC emissions based upon usages recorded in SC VI.1 and the VOC content recorded in SC VI.2, at the end of each calendar month.

IN COMPLIANCE. See attached records. For VI.2, facility is determining VOC content in lb/gal (less water) quarterly based on a modified Method 24 which was approved by AQD and explained above. The approval letter from TPU staff is attached.

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The following conditions apply to: EUSCALEBREAKER

DESCRIPTION: Coil straightener and scale breaker

Flexible Group ID: NA

POLLUTION CONTROL EQUIPMENT: scale breaker baghouse

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method
1. PM10 (filterable)	0.005 gr/dscf	Test Protocol*	EUSCALEBREAKER	SC V.1

*Test Protocol shall specify averaging time.

IN COMPLIANCE. Stack test was conducted in 2023. Awaiting results. Prior test was conducted in 2018 and results indicate compliance. The results were 0.005 gr/dscf for PM10 (filterable). The limit is 0.005 gr/dscf for PM10 filterable. The results were reviewed by Dave Patterson, TPU, on October 31, 2018. In his memo, he noted that the RDL was used for the calculation and actual results are less than reported results.

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS

1. The permittee shall not operate the scale breaker process unless the baghouse is installed, maintained, and operated in a satisfactory manner. **IN COMPLIANCE. Maintenance records were submitted and attached. No ongoing issues were noted.**

2. The permittee shall not operate EUSCALEBREAKER unless a malfunction abatement plan (MAP) as described in Rule 911(2), for operation of the scalebreaker baghouse is implemented and maintained. If at any time the MAP fails to address or inadequately addresses an event that meets the characteristics of a malfunction, the permittee shall amend the MAP within 45 days after such an event occurs. The permittee shall also amend the MAP within 45 days, if new equipment is installed or upon request from the District Supervisor. The permittee shall submit any amendments to the MAP to the AQD District Supervisor for review and approval. If the AQD does not notify the permittee within 90 days of submittal, the amended MAP shall be considered approved. Until an amended plan is approved, the permittee shall implement corrective procedures or operational changes to achieve compliance with all applicable emission limits.

IN COMPLIANCE. MAP has been submitted previously and is in the facility file.

IV. DESIGN/EQUIPMENT PARAMETERS NA

V. TESTING/SAMPLING

1. At least once every ROP permit term the permittee shall verify PM10 emission rates from EUSCALEBREAKER by testing at owner's expense, in accordance with Department requirements. No less than 30 days prior to testing, the permittee shall submit a complete test plan to the AQD Technical Programs

Unit and 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 to the AQD Technical Programs Unit and District Office within 60 days following the last date of the test.
IN COMPLIANCE. Testing was conducted in 2018 and 2023.

VI. MONITORING/RECORDKEEPING
1. Permittee shall periodically inspect the baghouse to determine the operational and physical condition of the baghouse at least once per quarter. The baghouse shall be inspected as necessary immediately after a malfunction or failure of the baghouse or the process equipment to determine the reason for the malfunction or failure. Written records of each inspection and corrective action taken, if any, shall be maintained.
IN COMPLIANCE. Records are attached. No ongoing issues noted.

2. The permittee shall perform a non-certified visible emission observation of the baghouse stack at least once a month during processing activity and keep a written record the results of the observation. The permittee shall initiate corrective action upon observation of visible emissions and shall keep a written record of each required observation and corrective action taken.
IN COMPLIANCE. No corrective action required.

VII. REPORTING NA

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 (inches)	Minimum Height Above Ground (feet)
1. SVCS_SBBH	48	110

DID NOT EVALUATE.

IX. OTHER REQUIREMENTS NA
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The following conditions apply to: EUNPKLTANKS
DESCRIPTION: Steel pickling line tank farm
Flexible Group ID: NA
POLLUTION CONTROL EQUIPMENT: Packed column scrubber using water to control hydrogen chloride (HCl) emissions from the pickling line tank farm

I. EMISSION LIMITS NA

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS
1. The permittee shall maintain and implement an Operation and Maintenance Plan (OMP) for the EUNPKLTANKS hydrogen chloride (HCl) storage tanks scrubber.
IN COMPLIANCE. The Operation and Maintenance Plan is attached.
2. The permittee shall not operate EUNPKLTANKS to load or unload tanks containing hydrochloric acid containing materials unless the water scrubber is installed, maintained, and operated in a satisfactory manner during such periods.
IN COMPLIANCE. Based on operating logs and maintenance records, scrubber appears to be maintained and operated properly.

IV. DESIGN/EQUIPMENT PARAMETERS
1. The permittee shall provide and operate, except during loading and unloading of acid, a closed-vent system for each EUNPKLTANKS hydrochloric acid storage vessel.
IN COMPLIANCE. Closed vent system is in place for each vessel.

2. Loading and unloading in EUNPKLTANKS shall be conducted either through enclosed lines or each point where the acid is exposed to the atmosphere shall be equipped with a local fume capture system, ventilated through an air pollution control device.
IN COMPLIANCE. Loading and unloading is conducted through enclosed lines. Lines were observed during the AQD inspection.

V. TESTING/SAMPLING NA

VI. MONITORING/RECORDKEEPING
Records shall be maintained on file for a period of five years.

1. The permittee shall keep a record of the liquid flow to the EUNPKLTANKS scrubber, daily. **IN COMPLIANCE. See attached excel spreadsheet. Each reading shown is instantaneous.**

2. The permittee shall monitor and record the pressure drop across the EUNPKLTANKS scrubber once per shift while the scrubber is operating in order to identify changes that may indicate a need for maintenance.
IN COMPLIANCE. See attached excel spreadsheet. Each reading shown is instantaneous. Note, there are only 2 shifts per day at the pickle line.

3. The permittee shall inspect, and keep records of inspection findings for each EUNPKLTANKS hydrogen chloride (HCl) storage vessel semiannually to determine that the closed-vent system and the air pollution control device are installed and operating when required.
IN COMPLIANCE. See attached inspection records. Tanks are inspected quarterly as per SPCC regulations.

VII. REPORTING NA

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 (inches)	Minimum Height Above Ground (feet)
1. SVNPKLTNKSCRUB	18	25

DID NOT EVALUATE. Did not measure stack height.

IX. OTHER REQUIREMENTS NA

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The following conditions apply to: EUNPKLLINE

DESCRIPTION: Steel pickling process line
Flexible Group ID: NA
POLLUTION CONTROL EQUIPMENT: Packed column scrubber using water to control hydrogen chloride (HCl) emissions from the process equipment.

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method
1. hydrogen chloride (HCl) (CAS No. 7647010)	6 ppmv from scrubber stack. Or A mass emission rate that corresponds to a	Test Protocol*	EUNPKLLINE	SC V.1

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method
	control efficiency of at least 99 percent reduction based upon inlet concentration			

*Test Protocol shall specify averaging time.

IN COMPLIANCE. The most recent stack test was conducted on 8/16/22. Results were as follows: HCl emission rate of 2 ppmv (prior test was 0.3ppmv) which is below the allowable limit of 6.0 ppmv HCl, and an hourly emission rate of 0.088 lb/hr (0.013 lh/hr prior test). The pickle line does not have a lb/hr limit.

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate unless the packed column scrubber is installed, maintained, and operated in a satisfactory manner.

IN COMPLIANCE. Scrubber appears to be operating properly based on flow rates observed during the inspection and the attached spreadsheet which show flow rates about the required minimums. Also, inspection and maintenance records are attached for 2022 and 2023 YTD.

2. The permittee shall maintain and implement the site-specific operating parameter values for a minimum scrubber makeup water flow rate and recirculation water flow rate established from conducted EUNPKLLINE performance tests as required by 40 CFR Part 63.1161(b). The permittee shall determine the average make up water flow rate and recirculation water flow rate during each performance test and shall maintain and implement that number as the minimum scrubber makeup water flow rate and recirculation water flow rate until the next performance test and a new number is established.

IN COMPLIANCE. Site specific operating parameters were re-established during the August 16 2022 stack test which is allowed by the Steel Pickling MACT. The stack test report indicated that the scrubber operated with an average recirculating flow rate of 35 m3/hr (34 m3/hr prior test) and make-up water flow rate of 5.26 m3/hr (5.32 m3/hr prior test) during testing so these are the new minimum operating parameters for the scrubber. The attached spreadsheet indicates compliance with the minimum values both before and after the August 2022 stack test. Note, values are instantaneous at 06:00 and 18:00.

V. TESTING/SAMPLING

1. At least once every two and a half years verification of the HCl emission rate from the EUNPKLLINE pickling line process water scrubber stack SVNPKLINESCRUB, by testing at owner's expense, in accordance with Department requirements, will be required. No less than 60 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test. Performance tests shall be conducted under such conditions as the Administrator specifies to the owner or operator based on representative performance of the affected source for the period being tested. Upon request, the owner or operator shall make available to the Administrator such records as may be necessary to determine the conditions of performance tests.

IN COMPLIANCE. The most recent stack tests were conducted on August 16, 2022, February 25, 2020, and August 23, 2017 which meet the once every 2.5 years requirement. For the most recent test, test plan was submitted on June 21, 2022 and test was conducted on August 16, 2022 so the notification did not met the 60 day requirement. Enforcement discretion is applied in this case. Test report was received on October 10, 2022 which was within 60 days of the stack test. Test appeared to be operated at representative conditions based on steel processed and tank temperatures and acid concentrations per tank.

2. The permittee shall conduct the performance test for the EUNPKLLINE pickling process and control device to either measure simultaneously the mass flows of HCl at the inlet and the outlet of the control device (to determine compliance with the applicable collection efficiency standard) or measure the concentration of HCl in gases exiting the process or the emission control device (to determine compliance with the applicable emission concentration standard).
IN COMPLIANCE. Testing was conducted to measure the concentration of HCl in gases exiting the emission control device. See August 16, 2022, test results for more information in the facility file.

3. Compliance with the applicable SC I.1 concentration standard or collection efficiency standard shall be determined by the average of three consecutive runs. Each run shall be conducted under conditions representative of normal process operations.
IN COMPLIANCE. Based on the August 16, 2022 test report, compliance was based on three consecutive runs.

4. During the EUNPKLLINE performance test, the permittee shall establish site-specific operating parameter values for the minimum scrubber makeup water flow rate and, if the scrubber operates with recirculation, the minimum recirculation water flow rate.
IN COMPLIANCE. Site specific parameters were set during the test. Minimum values established during the test are recirculating flow rate of 35 m3/hr and make-up water flow rate of 5.26 m3/hr.

5. During the EUNPKLLINE performance test, the permittee shall monitor each operating parameter continuously and record them with sufficient frequency to establish a representative average value for that parameter, but no less frequently than once every 15 minutes. The permittee shall determine the operating parameter monitoring values as the averages of the values recorded during any of the runs for which results are used to verify compliance with the emission concentration or collection efficiency per S.C. I.1.
IN COMPLIANCE. During the test, parameters were recorded once every 10 minutes. See sheet in the test report.

6. The permittee may conduct multiple performance tests to establish alternative compliant operating parameter values. Also, an owner or operator may reestablish compliant operating parameter values as part of any EUNPKLLINE performance test that is conducted subsequent to the initial test or tests.
IN COMPLIANCE. Operating parameters values were reestablished during each test. Facility has not conducted multiple tests to establish alternative compliant operating parameter values.

VI. MONITORING/RECORDKEEPING
1. The permittee shall install, operate, and maintain systems for the measurement and recording of the EUNPKLLINE scrubber makeup water flow rate and, if required, recirculation water flow rate. These flow rates must be monitored continuously and recorded at least once per shift while the scrubber is operating. Operation of the wet scrubber with excursions of scrubber makeup water flow rate and recirculation water flow rate less than the minimum values established during the EUNPKLLINE performance test or tests will require initiation of corrective action as specified by the maintenance requirements in 40 CFR 63.1160(b)(2).
IN COMPLIANCE. Flow rates are measured continuously and recorded at least once per shift. Flow monitors are calibrated annually. Calibration records are attached for 2021 and 2022. There are alarms in place based on instantaneous, 15 minute, 30 minute, and hourly flow values and certain conditions will trigger a line stop. Procedures are in place to address these circumstances and are outlined in the MAP and the attached email.

2. The permittee shall keep a record of the following information for EUNPKLLINE:

a. Operating parameters for the scrubbers established from the initial test conducted. **IN COMPLIANCE. Permittee maintains stack test reports containing this information.**
b. Occurrence and duration of each malfunction of the pickling operation. **IN COMPLIANCE. Facility submits malfunction reports on a semi annual basis. Facility also maintains a malfunction log. See attached.**

c. Occurrence and duration of each malfunction of the scrubber(s). **IN COMPLIANCE. Facility submits malfunction reports on a semi annual basis. Facility also maintains a malfunction log. See attached.**
d. All maintenance performed on the scrubber(s). **IN COMPLIANCE. Maintenance records requested were provided.**
e. Actions taken during periods of malfunction to minimize emissions in accordance with §63.1159(c) and the dates of such actions (including corrective actions to restore malfunctioning process and air pollution control equipment to its normal or usual manner of operation) **IN COMPLIANCE. Facility submits malfunction reports on a semi annual basis. This information would be contained in a malfunction report.**
f. All required measurements needed to demonstrate compliance with the standard and to support data that the source is required to report, including, but not limited to, EUNPKLLINE performance test measurements (including initial and any subsequent performance tests)and measurements as may be necessary to determine the conditions of the initial test or subsequent tests. **IN COMPLIANCE. This information appears to be contained in the stack test reports.**
g. All results of initial or subsequent EUNPKLLINE performance tests. **IN COMPLIANCE. Permittee maintains stack test reports containing this information.**
h. All documentation supporting initial notifications and notifications of EUNPKLLINE compliance status required by 40 CFR Part 63.9.
a. The permittee shall keep and maintain the following records for EUNPKLLINE for five years from date of each record of:
    1. Scrubber makeup water flow rate and recirculation water flow rate.
    2. Calibration and manufacturer certification that monitoring devices are accurate to within 5 percent.
    3. Each maintenance inspection and repair, replacement, or other corrective actions

IN COMPLIANCE. This information has been provided to AQD.

The permittee shall comply with the operation and maintenance requirements prescribed under 40 CFR § 63.6(e) of NESHAP Subpart A for the EUNPKLLINE pickling line and scrubber control device. **IN COMPLIANCE. Facility appears to be in compliance with this condition based on operation and maintenance records provided and reviewed as part of this inspection. All of these records were provided by the facility and/or are on file at the facility at least for the time period evaluated for this inspection from 2022- 2023 YTD.**

VII. REPORTING

1. Permittee shall report the results of any performance test as part of the notification of compliance status as required in 40 CFR 63.1163.
IN COMPLIANCE. Notice of compliance status (NOCS) was included with the October 10, 2022, stack test results.

2. No less than 60 days prior to testing, a complete stack test protocol must be submitted to AQD for approval and the time schedule of the testing to allow the AQD to have an observer present during the test. The final plan must be approved by the AQD prior to testing.
IN COMPLIANCE. For the most recent test, test plan was submitted on June 21, 2022 and test was conducted on August 16, 2022 so the notification did not met the 60 day requirement. Enforcement discretion is applied in this case as AQD was able to review and attend the test.

3. The permittee shall report EUNPKLLINE malfunctions in the following manner:
Reporting malfunctions. The number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded shall be stated in a semiannual report. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with §63.1159(c), including actions taken to correct a malfunction. The report, to be certified by the owner or operator or other responsible official, shall be submitted semiannually and delivered or postmarked by the 30th day following the end of each calendar half.

IN COMPLIANCE. Facility submits malfunction reports on a semi annual basis. No malfunctions have been reported during the time period reviewed (CY2022 – 2023 YTD).

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 (inches)	Minimum Height Above Ground (feet)
1. SVNPKLINESCRUB	30	110

DID NOT EVALUATE. Did not measure stack height.

IX. OTHER REQUIREMENTS

1. The permittee shall monitor emissions and operating and maintenance information for EUNPKLLINE in accordance with the National Emission Standards for Hazardous Air Pollutants as specified in 40 CFR Part 63 Subparts A and CCC. The permittee shall keep records of all source emissions and operating and maintenance information on file at the facility and make them available to the Department upon request **IN COMPLIANCE. Required records appear to be maintained by the facility and all records that were requested by AQD were received.**

2. The permittee shall maintain and implement a written Operation and Maintenance Plan (OMP) for the EUNPKLLINE pickle line scrubbers. The OMP for the pickle line scrubbers must be consistent with good maintenance practices and must at a minimum:

i. Require monitoring and recording the pressure drop across the scrubber once per shift while the scrubber is operating in order to identify changes that may indicate a need for maintenance. **IN COMPLIANCE. See attached spreadsheet. Pressure drop is an instantaneous reading. None of the values in the spreadsheet indicate a need for maintenance based on the acceptable pressure drop ranges set by manufacturer's specifications.**

ii. Require the manufacturer's recommended maintenance at the recommended intervals on fresh solvent pumps, discharge pumps, and other liquid pumps, in addition to exhaust system and scrubber fans and motors associated with those pumps and fans. **IN COMPLIANCE. See attached records. Maintenance appears to be conducted quarterly on the pumps, exhaust system, fans, and motors.**

iii. Require cleaning of the scrubber internals and mist eliminators at intervals sufficient to prevent buildup of solids or other fouling. **IN COMPLIANCE. Information on frequency was requested. This cleaning is performed biennial (every two years) unless identified as needed during the quarterly inspections and was last performed in 2022 (prior was October 2019). Nozzles were replaced in Sept 2022 (inspection attached).**

iv. Require an inspection of each scrubber at intervals of no less than 3 months with:

A. Cleaning or replacement of any plugged spray nozzles or other liquid delivery devices. **IN COMPLIANCE. A review of quarterly records contains the inspection of spray nozzles. July 2022 inspection indicates nozzles need to be replaced; September 2022 inspection indicates they were all replaced.**

B. Repair or replacement of missing, misaligned, or damaged baffles, trays, or other internal components. **IN COMPLIANCE. Internal components aside from sprays are the scrubber packing. Packing level is inspected and adjusted as needed.**

C. Repair or replacement of droplet eliminator elements as needed. **IN COMPLIANCE. See above. Mist eliminator part of routine inspections and maintenance.**

D. Repair or replacement of heat exchanger elements used to control the temperature of fluids entering or leaving the scrubber (if applicable). **NOT APPLICABLE (as noted in the inspection and maintenance records)**

E. Adjustment of damper settings for consistency with the required air flow. **IN COMPLIANCE. Damper settings are checked in the quarterly inspection and maintenance records.**

i. Require an alternate means of scrubber inspection, if the scrubber is not equipped with a viewport or access hatch allowing visual inspection. **NOT APPLICABLE. There is a viewport that was observed during the AQD inspection.**
ii. Require the initiation of the applicable corrective action procedures specified in the OMP within one (1) working day of the detection of an operating problem and the completion of all corrective actions as soon as practicable. **IN COMPLIANCE. Did not observe operational issues in the quarterly inspection records or in the once per shift flow rate and pressure drop records.**
iii. Require the maintenance of records containing the date of each inspection, the problem identified, a description of the repair, replacement, or other corrective action taken, the date of the repair, replacement, or other corrective action, and the signature of the responsible maintenance official.

IN COMPLIANCE. Records of inspections and maintenance were provided and appear to contain this information, including the signature of the responsible maintenance official. See attached records from 2022 to 2023 YTD.

3. Permittee may develop and implement alternative monitoring requirements for EUNPKLLINE subject to approval by the AQD District Supervisor.
NOT APPLICABLE. No alternative monitoring has been requested.

4. The permittee shall operate and maintain at all times each EUNPKLLINE emission source, including associated air pollution control equipment and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
IN COMPLIANCE. Based on a review of monitoring results, operation and maintenance procedures, and operation and maintenance records that were requested as part of this AQD inspection and the AQD inspection of the source, compliance was chosen.

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The following conditions apply to: EUNTANDMILL

DESCRIPTION: Tandem cold rolling mill

Flexible Group ID: NA
POLLUTION CONTROL EQUIPMENT: Oil mist eliminator

I. EMISSION LIMITS

Pollutant	Limit	Time Period / Operating Scenario	Equipment	Testing / Monitoring Method
1. PM10 (filterable)	0.004 gr/dscf	Test Protocol*	EUNTANDMILL	SC V.1
2. VOC	0.9 pph	Test Protocol*	EUNTANDMILL	SC VI.3

*Test Protocol shall specify averaging time.

IN COMPLIANCE. For PM-10, stack test was conducted in 2023. Awaiting results. Prior test was conducted in 2018 and results indicate compliance. the measured emissions were 0.001 gr/dscf of PM10 (filterable) and 0.002 gr/dscf PM10 total. The permit limit is 0.004 gr/dscf PM10 (filterable). This was reviewed by Dave Patterson, TPU, on October 31, 2018.

For the VOC limit, the value is back calculated based on usage and production hours. See attached records. VOC hourly values have not exceeded 0.9 pph.

II. MATERIAL LIMITS NA

III. PROCESS/OPERATIONAL RESTRICTIONS NA

IV. DESIGN/EQUIPMENT PARAMETERS

1. The permittee shall not operate EUNTANDMILL unless the mist eliminator is installed, maintained, and operated properly in order to reduce oil mist from the process.

PENDING. Mist eliminator is inspected by third party. See attached reports. AQD requested follow up information about the plan for replacing some of the filters. Here is the response received from Cliffs: "The filters have not been changed. The entire system will be reinspected soon (likely this month) and they will note if the filters have deteriorated any more. We did received preliminary stack test results that were around 50% of the limit."

V. TESTING/SAMPLING

1. At least once every ROP permit term verification of the PM10 emission rate from the EUNTANDMILL mist eliminator stack, by testing at owner's expense, in accordance with Department requirements, will be required. No less than 30 days prior to testing, a complete test plan shall be submitted to the AQD. The final plan must be approved by the AQD prior to testing. Verification of emission rates includes the submittal of a complete report of the test results to the AQD within 60 days following the last date of the test.

IN COMPLIANCE. Facility is testing once every 5 years. Testing occurred in 2018 and 2023. Note, only the PM10 limit requires testing.

VI. MONITORING/RECORDKEEPING

1. The permittee shall keep monthly records of the amount of rolling oil used in the EUNTANDMILL process.

2. The permittee shall keep records of the VOC content for each rolling oil used in the EUNTANDMILL tandem mill rolling process.

3. The permittee shall keep, in a satisfactory manner, monthly and previous 12-month records of VOC emission calculations for EUNTANDMILL based on the amounts of each rolling oil used and VOC content of each oil. The permittee shall keep all records on file at the facility for a period of at least five years and make them available to the Department upon request.

IN COMPLIANCE. See attached records.

VII. REPORTING NA

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 (inches)	Minimum Height Above Ground (feet)
1. SVNEWTCM_ME	114	9

DID NOT EVALUATE.

IX. OTHER REQUIREMENTS NA

FGANNEALFURNACES – NO LONGER OPERATING

DESCRIPTION 52 annealing furnaces (composed of 34 hydrogen nitrogen annealing furnaces and 18 hydrogen annealing furnaces) located in the Cold Mill Building.

Flexible Group ID: FGANNEALFURNACES

POLLUTION CONTROL EQUIPMENT NA

Based on attached records, annealing furnaces have not been in use since June 2020.

FGHSMFURANCES123 – NO LONGER OPERATING

DESCRIPTION: Three Slab reheat furnaces Nos. 1, 2 and 3 located in the Hot Strip Mill Building.

Emission Units: EUREHEATFURN1, EUREHEATFURN2, EUREHEATFURN3

NSPS/MACT

NSPS Dc. IN COMPLIANCE. The three hot water heaters on the subject to NSPS Dc as they were installed around 2012. The size is 12.4 MMBTU/hr each. Monthly natural gas records are being maintained. Facility

submitted a request to calculate natural gas usage per heater in an alternate way which was approved by AQD. See letter in facility file.
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Emergency Engines
Facility submitted log of hours of operation as required for engines. See attached.

MAERS REPORT REVIEW
MAERS report for 2022 was reviewed. No changes were made to the original submittal.

FUGITIVE DUST
There are no fugitive dust issues of concern related to the emission units evaluated in this report.

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

NAME Kalu Kisa DATE 10/30/23 SUPERVISOR April L. Wendling 10/31/23