



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, ILLINOIS 60604**

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Nacme Steel Processing LLC

FROM: Brittany Cobb, Environmental Engineer
AECAB (MI/WI)

THRU: Sarah Marshall, Section Supervisor
AECAB (MI/WI)

TO: File

BASIC INFORMATION

Facility Name: Nacme Steel Processing LLC

Facility Location: 429 W 127th St., Chicago, IL 60628

Date of Inspection: 12/9/2021

EPA Inspector(s):

1. Brittany Cobb, Environmental Engineer
2. Karina Kuc, Environmental Scientist

Other Attendees:

1. Bob Scott, General Manager
2. Matt Eich, Project Manager
3. Chris Downs, Maintenance Supervisor

Contact Email Address: meich@nmlp.com

Purpose of Inspection: To determine compliance with the Clean Air Act

Facility Type: Steel coil pickling facility

Regulations Central to Inspection: 40 CFR Part 63 Subpart CCC: National Emission Standards for Hazardous Air Pollutants for Steel Pickling (NESHAP Subpart CCC), 40 CFR Part 63 Subpart SSSS: National Emission Standards for Hazardous Air Pollutants for Surface Coating of Metal Coil (NESHAP Subpart SSSS), and any other applicable regulations and permits.

Arrival Time: 9:30 AM CT

Departure Time: 12:00 PM CT

Inspection Type:

- ☒ Unannounced Inspection
- ☐ Announced Inspection

OPENING CONFERENCE

- ☒ Presented Credentials
- ☒ Stated authority and purpose of inspection
- ☒ Provided Small Business Resource Information Sheet via email
- ☒ Provided CBI warning to facility

The following information was obtained verbally from Nacme Steel Processing LLC (Nacme) employees unless otherwise noted.

Process Description:

Nacme Steel (Facility) performs pickling on steel coils with hydrochloric acid (HCl). There are three raw acid tanks (14,000 gallons each), which contain 36% concentrated HCl, four shallow pickling tanks, which contain 12%, 9% 6% and 3% concentrated HCl, and four recirculation tanks. All the tanks are tied into a header. The steel is uncoiled and then moved through the four pickling tanks on ring rolls. HCl is injected into the sides of the system instead of the top. The pickling is performed through a cascade system, where the HCl solution is recirculated through external heat exchangers and recirculation tanks. The HCl solution also flows counter-current to the direction of steel movement. Raw HCl is added to the last tank which has the highest concentration. The acid concentrations decrease from the last tank to the first tank, from which the spent acid is discharged. The concentration of the spent acid is typically less than 2%. A surfactant rinse section follows the pickling section.

Hydrochloric acid is brought in about four times per week by truck and offloaded into one of the three storage tanks. The Facility is continuously adding small amounts of raw HCl from the storage tanks to the pickling line, approximately 2.8 gallons of HCl per ton of steel. On average the facility processes 800 – 1,000 tons of steel per day. Spent acid is also picked up by trucks weekly.

Emissions from the pickling line and raw HCl storage tanks are controlled with a wet scrubber.

Staff Interview:

Nacme typically operates 24 hours a day, 7 days a week. The facility is currently operating from Sunday at 11:00 PM to Saturday at 3:00 PM (136 hours per week) due to a shortage of employees. There are currently approximately 45 employees, usually there are 60.

The temperature of the steel recirculation tanks is recorded daily, the Facility aims to keep it right at or below 190°F. The pressure drop and water flow of the scrubber are also recorded regularly. The pressure drop for the past few years has been in between 6.1 inches water column

(in w.c.) and 12 in w.c. The scrubber water flow is typically 2.0 to 2.3 gallons per minute. At the time of the inspection, the pressure drop of the scrubber was at 10.7 in w.c. and the water flow was 2 gallons per minute.

Nacme performed a stack test on the scrubber in May 2021. In June 2021 there was an OSHA HCl study. The Facility performs daily inspections, semiannual calibrations on sensors and annual preventative maintenance. There have been no reported malfunctions, breakdowns or startup errors of the air pollution control equipment in the past five years. There is supposed to be an exchange volume of air in the building eight times per hour, but this is not happening due to neglect by the company, the fans are malfunctioning.

There has been approximately two million dollars' worth of repairs at the facility in 2021, which included refurbishing the hydrochloric acid storage tanks. There was also a rebuild of the steel pickling line in 2020, which allows the Facility to pickle four times faster. The previous line had 10-foot-deep baths for pickling instead of the current shallow tanks. The 2020 rebuild also included new fiberglass reinforced plastic and insulation. The Facility plans to rebuild the pits around the pickling line in January 2022 and automate the system controls in the future. Although there have been no recent ownership changes, Nacme is under new management since January 2021.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:

EPA inspectors were led on a tour of the facility by Bob Scott and Matt Eich. There was a lot of corrosion on the tanks, pipes, components, and area surrounding the pickling line (IMG_1366). EPA observed one of the HCl sensors on the wall near the recirculation tanks was not operating (IMG_1367). EPA observed the temperature of tank three to be 184.7°F, tank two was 164.2°F and tank one was 171°F. The fourth recirculation tank had a leak in it. EPA was informed the Facility drained it of HCl because of the leak and that the liquid leaking was water. EPA recorded the scrubber water flow rate to be 2 gallons per minute. EPA noticed a strong odor that smelled like acetone. EPA was informed that this smell was from relining the secondary containment for the HCl storage tanks. EPA then went outside and saw the recently refurbished storage tanks. The facility was using the tanks that the HCl is delivered in as temporary storage tanks (IMG_1369) and there was a temporary hose connected to the scrubber for these tanks.

Photos and/or Videos: were taken during the inspection.

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

1. Daily records of the pH of the pickling system.
2. Process flow diagram.

☐ Provided U.S. EPA point of contact to the facility

1. Daily (or more frequent if available) records (in Microsoft Excel format) of pressure drop across the scrubber from January 1, 2018 to December 10, 2021.
2. Daily (or more frequent if available) records (in Microsoft Excel format) of scrubber make-up water flow from January 1, 2018 to December 10, 2021.
3. Daily logs of the pickling tanks temperature for July 2021 and November 2021.
4. Copy of the Operation and Maintenance Plan.
5. 2018, 2019, 2020, and 2021 semiannual reports.
6. 2018, 2019, 2020 and 2021 preventative maintenance annual reports.
 - a. Date and description of any additional scrubber shutdowns since January 1, 2018.
7. Records of all malfunctions, breakdown or startup errors of the scrubber or turbo-tunnel enclosure since January 1, 2018.
8. Copy of the May 2021 stack test and the stack test performed prior to that.
9. Internal log for calculating monthly and yearly emissions, include all supporting documents.
10. SDS of surfactants and oils used.
11. SDS of Hydrochloric acid stored in the storage tanks.

Report Author: Brittany Cobb

Digitally signed by
Brittany Cobb
Date: 2022.01.04
16:24:52 -06'00'

Section Supervisor: SARAH MARSHALL Digitally signed by SARAH MARSHALL Date: 2022.01.05 10:59:56 -06'00'

APPENDICES AND ATTACHMENTS

A. Digital Image Log

Facility Name: Nacme Steel Processing
Facility Location: 429 W 127th St., Chicago, IL 60628
Date of Inspection: December 9, 2021

APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Brittany Cobb	2. Archival Record Location: <i>https://usepa.sharepoint.com/:f:/r/sites/R5_Work/r5erc/ecad/AECAB%20Library/Enf_Nacme_IL_21_Inspection/Photos?csf=1&web=1&e=Xmg6zt</i>
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Image Number	File Name	Date and Time (incl. Time zone and DST)	Description of Image
1	IMG_1366	12/9/2021 11:10 AM CT	HCl recirculation tank, corrosion on tank and components
2	IMG_1367	12/9/2021 11:16 AM CT	HCl sensor near recirculation tanks not in operation
3	IMG_1368	12/9/2021 11:31 AM CT	Refurbished HCl storage tank
4	IMG_1369	12/9/2021 11:32 AM CT	Temporary HCl storage tank, there is a temporary hooked up to scrubber

Note: The camera was set to the wrong time. The times in the table have been corrected.