REGION 5
CHICAGO, IL 60604

MEMORANDUM

SUBJECT: CLEAN AIR ACT INSPECTION REPORT
Wabash Castings, LLC, Wabash, Indiana

FROM: Linda H. Rosen, Environmental Engineer
AECAB (IL/IN)

THRU: Nathan Frank, Section Supervisor
AECAB (IL/IN)

TO: File

BASIC INFORMATION

Facility Name: Wabash Castings, LLC (Wabash Coatings)

Facility Location: 3837 West Mill Street, Wabash, Indiana

Date of Inspection: 10/24/2023

EPA Inspector(s):
1. Linda H. Rosen, Environmental Engineer
2. Emma Leeds, Environmental Engineer

Other Attendees:
1. Aaron Blum, Environmental, Health and Safety Manager, Wabash Castings
2. Pat Meredith, V.P. General Manager, Wabash Castings
3. Noah Weston, Air Quality Compliance Inspector, Indiana Department of Environmental Management

Contact Email Address: ablum@wabcast.com; pmeredith@wabcast.com

Purpose of Inspection: CAA inspection

Facility Type: aluminum foundry

Regulations Central to Inspection: National Emission Standard for Hazardous Air Pollutants for Aluminum, Copper, and Other Nonferrous Metals, which regulates metal hazardous air pollutants (HAP) and Title V Permit No. T169-43584-00042, issued March 11, 2022, which contains PSD minor limits for volatile organic compounds (VOC) and particulate matter (PM) emissions.

Arrival Time: 2:30 p.m.
Departure Time: 4:40 p.m.

Inspection Type:
☒ Unannounced Inspection
☐ Announced Inspection

OPENING CONFERENCE

☒ Presented Credentials
☒ Stated authority and purpose of inspection
☒ Provided Small Business Resource Information Sheet
☐ Small Business Resource Information Sheet not provided.
☒ Provided CBI warning to facility

The following information was obtained verbally from representatives of Wabash Castings unless otherwise noted.

Company Ownership: On April 1, 2021, Wisconsin Aluminum Company purchased the facility as a subsidiary, but the name stayed the same. In or around November 2021, Wabash Castings, Inc. became Wabash Castings, LLC.

Process Description:
The facility is an aluminum foundry that makes castings for various industries including automotive and farming. The process starts with cold box core making. Sand is mixed with resin parts 1 and 2 and the mixture is blown into a tool with a gas catalyst to form the core. Resin Parts 1 and 2 are urethane binders that act like “glue” and the catalyst is dimethylisopropylamine (DMIPA). The cores are assembled as needed for a particular casting. In mold making, the same sand is used but with clay and water so that it is considered “green sand.” The binder used in mold making is the clay instead of a resin. Kerosene is used as a mold release agent. The sand is recycled in mold making but in core making, the sand is taken to a class 4 landfill. All cores have molds but not all molds have cores.

There are 8 core box machines and 2 prototype machines. The two prototypes are controlled by one sulfuric acid scrubber and Core Box 1 and Core Box 2 are controlled by another sulfuric acid scrubber. All other core boxes have their own sulfuric acid scrubber for a total of 8 acid scrubbers. The acid scrubbers extract the amine from the gas for reuse. Emissions from the facility's one mold making machine are not directly controlled. The facility operates wet (non-acid) scrubbers that capture and control the particulate matter emissions from the plant's building air. These are called the East and West wet scrubbers or cyclones. There are hoods throughout the plant that capture the building air to these scrubbers.

A shaker dumps aluminum scrap received at the facility into one of two gas-fired reverberatory furnaces, each 140,000 pounds, installed prior to 1995. Scrap can also be charged through a door on the side of the furnace. After melting, the metal is tested for specifications and the bath is skimmed. The facility uses gravity transport launders to take the molten metal to one of two holding furnaces, each 4-6,000 pounds, installed prior to 1995. Molten metal is picked up by buckets from the holding furnaces and poured into molds. The process is continuous, not batch. All furnaces, melting and holding, are uncontrolled. About 20 minutes after pouring, the castings are removed from the mold. The shakeout system removes the green sand for recycling and the knockout process uses vibration to remove the core. The sand output from the knockout process goes to the Didion which is controlled by a baghouse. The castings are finished by sawing off the gates and risers.

Incoming scrap includes sows, ingots and recycled wheels that are considered "clean." The facility uses defective wheels from foundries and scrapyard wheels that have been burned clean by a third party. The facility purchases the scrap on the open market and there are no contracts. The facility also melts its own scrap.

Staff Interview: The facility operates the furnaces, core making and mold making during the first and third shifts. During the second shift, only maintenance and cleanup, including furnace cleanup, occurs.

The facility was not sure when or if stack testing was done on the scrubbers. For the acid scrubbers, the facility tracks pH and water level. The pH is recorded at the beginning and end of the shifts. If the pH is over an internal limit of 2, they adjust it by adding more acid. The permit limit is 5. The facility has an internal limit of 45 inches for the water level. They put more acid in when the level goes below that. For the wet, non-acid, scrubbers, the facility tracks pressure drop and water flow rate.

Stack testing on the furnaces was done at least 20 years ago. The facility conducts visible emission readings on all their stacks every day.

The facility believes they are major source for VOC emissions due to core making. They said they were not familiar with the NESHAP Subpart ZZZZZZ. They did not know if they were

considered a "large" or "small" foundry under that NESHAP. They melt 7-14 million pounds of metal per year.

The facility has a written management practices plan and incoming metal inspection procedures. The facility had a problem with one vendor mis-representing its scrap.

The facility uses cleaning solvents. They use AC Attack to clean the core boxes. They track cleaning materials by inventory.

TOUR INFORMATION

EPA Tour of the Facility: Yes

Data Collected and Observations:
The facility was not operating during the inspection because it was 2nd shift. We observed Core Boxes 1 and 2 which are controlled by one acid scrubber (Photo 1). We observed where the sand is mixed with resin and catalyst and blown into the tool (Photo 2). We observed the pH log (Photo 3). The term "NR" on the log means not running. We observed where clay and new and recycled green sand are mixed with water and pressed into the mold tool. A mold is made every 15 seconds. The core, if used, is set into the mold and the mold goes onto a conveyor. We saw the holding furnaces with two buckets used to pour molten metal into the molds (Photo 4). The holding furnaces' covers had gaps (Photo 5). We observed the east and west scrubbers (Photo 7) and the ductwork leading to them (Photo 8). We observed #2 reverberatory furnace, the launder, and the holding furnace line (Photos 6 and 10) as well as #1 furnace (Photo 9). Although the furnaces were not operating, there was metal in them. We observed "clean" wheels (Photo 11).

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

Field Measurements: were not taken during this inspection.

RECORDS REVIEW

1. pH log. This document was not taken from the facility. We took a photo of readings recorded on 10/23/23 (Photo 3).

CLOSING CONFERENCE

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

DIGITAL SIGNATURES

Report Author: Linda H. Rosen

Section Supervisor: NATHAN FRANK Digitally signed by NATHAN FRANK Date: 2023.12.20 13:30:00 -06'00'

APPENDICES AND ATTACHMENTS

1. Appendix A: Digital Media Appendix

APPENDIX A: DIGITAL IMAGE LOG

1. Inspector Name: Linda Rosen or Emma Leeds	**2. Archival Record Location:** Region 5's Electronic Records Center

Image Number	File Name	Date and Time	Description of Image
1	PA240083.JPG	2023:10:24 14:52:58	Core Boxes 1 and 2 controlled by acid scrubber (white tank in top right of photo)
2	PA240084.JPG	2023:10:24 14:55:15	Tool which is used to form core.
3	PA240085.JPG	2023:10:24 14:55:46	Scrubber pH log
4	PA240086.JPG	2023:10:24 15:03:35	Holding furnaces with buckets to pour into molds.
5	PA240087.JPG	2023:10:24 15:04:32	Holding furnaces with buckets to pour into molds. Gaps in cover.
6	PA240088.JPG	2023:10:24 15:06:33	Furnace to launder to holding furnace
7	PA240089.JPG	2023:10:24 15:09:35	East (further) and west (closer) wet scrubbers
8	PA240090.JPG	2023:10:24 15:10:51	Hoods and ducts that lead to wet (cyclone) scrubber
9	PA240091.JPG	2023:10:24 15:15:30	Furnace 1
10	PA240092.JPG	2023:10:24 15:15:40	Furnace 2
11	PA240093.JPG	2023:10:24 15:18:33	Clean wheels