



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Four Penn Center – 1600 John F Kennedy Blvd
Philadelphia, Pennsylvania 19103-2852

Report Title: Clean Air Act Inspection of Amsted Rail Company, Inc.
Inspection Date(s): 03/01/2023-03/01/2023
Regulatory Program(s): SIP, NESHAP, NSPS
Company Name: Amsted Rail Company, Inc.
Facility Name: Amsted Rail Company, Inc.
Facility Location: 2580 Frontage Rd
Petersburg, VA 23805
Latitude: 37.202615 **Longitude:** -77.363834
County/Parish: Petersburg city
AFS Number: VA0000005173000048
Permit Number: N/A
NAICS Code: 332991 **SIC:** 3562, 3499
Unique Project #: 3E23CA010A

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I. Introduction

The United States Environmental Protection Agency (EPA) conducted a Clean Air Act (CAA) inspection at Amsted Rail Company Inc. (Amsted Rail or Facility) to verify compliance with applicable State and Federal Regulations. The Virginia Department of Environmental Quality (VADEQ) was notified of the inspection on February 22, 2023, via email. On February 23, 2023, EPA notified the Facility of the planned inspection via phone and email. EPA emailed a list of records for review to Klay Foster, Environmental Engineer, Amsted Rail, prior to the inspection (see Attachment 1). These records are listed in the Records Review section of the report.

A. Summary of the Facility

Amsted Rail is located at 2580 Frontage Road, Petersburg, VA 23805. Amsted was founded in 1949 and commenced manufacturing tapered roller bearings and other components for the railroad industry in the 1960's. Amsted Rail is currently an employee-owned company with about 350 employees. The hours of operation are 24 hours per day, seven days a week. The Facility occupies a 140-acre property that contains seven different buildings. These buildings house manufacturing plants as well as a shipping and receiving warehouse, an engineering lab, and a research and development department. There is a separate building for the wastewater treatment operations. The main products being manufactured are cups, cones, rollers, and seals which are assembled to produce bearings for the undercarriage of rail cars. The Facility is closed for maintenance during the fourth of July week as well as during Christmas week.

Amsted Rail received a Minor Source Permit (Registration #:50292) from VADEQ issued on September 7, 2021.

Amsted Rail is classified as a synthetic minor source, they are subject to, or potentially subject to, the following federal regulations:

- 40 CFR 63: ZZZZ – National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
- 40 CFR 63: ZZZZ – National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources
- 40 CFR 63: XXXXXX – National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories
- 40 CFR 60 Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines

B. Inspection Opening Conference

At 9:01am on March 1, 2023, EPA inspectors arrived at the Facility for a CAA Inspection and conducted a brief opening conference. Amsted Rail was represented by Klay Foster - Environmental Engineer, Robert Ribbing - Director-Environmental Services, George Karalus - EHS Manager, Cathee Andrews - Human Resource Director, and Ryan Smith - Human Resource Manager. Also, John Reinhardt, Air Inspector, VADEQ was present. EPA inspectors, Stafford

Stewart, Parmatma Adhikari and Dean DeLuca, presented their credentials and identification card and explained the purpose of the visit was to conduct a CAA inspection to determine compliance with their permit and any applicable regulations. Additionally, EPA informed the facility representatives of their right to claim any confidential business information (CBI). At that time, Amsted Rail did not claim any photos or documentation as CBI. However, on March 9, 2023, after the inspection, EPA received electronic mail in which Amsted submitted a CBI claim. EPA and Amsted held a phone conference to discuss the CBI claim on March 15, 2023. Then, on March 17, 2023, EPA received a second electronic mail that identified four pictures to be claimed as CBI, these pictures will be treated as CBI.

II. Site Activity/Process Description

Amsted Rail is a railroad bearing manufacturing facility. The operations involve the forging of raw steel, which is then machined, heat treated, and ground to produce the cups and cones which are assembled to make bearings. Certain components associated with the production of the railroad bearing assembly such as bolts, end caps, and locking plates are outsourced and obtained prior to final assembly. Production and manufacturing support services takes place in several plants throughout the Facility. Plant 1 is used for machining, heat treating, grinding, assembling and phosphating. Plant 2 is a machine shop, and houses the engineering lab, there is no production in this building. Plant 3 also contains grinding, machining, phosphating, and assembly as well as shipping and receiving warehouse. The Production and Engineering Department as well as Operations Research and Development are also located in Plant 3. Forging, machining, and heat-treating processes are conducted in Plant 4. Plant 5 is used for the manufacturing of the seals used in the bearings, product Research and Development is conducted in Plant 6. There is also a separate building for the wastewater treatment plant operations.

The raw materials or feedstock used consist of different grades of non-galvanized steel that are trucked in from various international and domestic suppliers, other materials used in the production process such as rubber and phosphate additives are also trucked in from various suppliers. The production process involves introducing the feedstock into the forging process where the steel is conveyed into an electric induction heater to increase malleability prior to being pressed into the desired shape according to the required design specifications. For example, the production of cups involves forging the raw materials into a cylindrical shape, after which it is pressed into a ball then re-milled to meet the desired specifications, the product is then conveyed further down the production line for further shaping and then allowed to cool. The next step in the process is machining, in this step the forged material is shaped into the desired component that is ready to be assembled after heat treating. Heat treating is completed after machining to make the material stronger, more durable, and more resistant to wear. During this process the product is rendered hard on the outside but remains soft, almost molten, on the inside. After the heat-treating process, the product is conveyed for grinding, this is a finishing step, and the product is made ready for assembly. There is an additional procedure required to prepare the finished products for market, this is the phosphating process. Phosphating is surface

treatment in which the metallic surface of the component reacts with an aqueous phosphate solution. The finished product is subject to the phosphating process to provide corrosion protection to the material's surface. Phosphating also provides additional lubrication, enhances appearance, and allows additional coatings to adhere better to the part surface.

Rollers are among the components that are also produced at this Facility. Rollers are manufactured by a third party up to the heat-treating step, the grinding and assembly steps of the process take place at this site. All other components required for the bearing assembly such as bolts, end caps, cone assembly, cage and locking plates are outsourced. All finished products are shipped out by trucks. The main customers are rail car builders.

The air pollution control equipment (APC) used at this Facility consists of mist collectors attached to the grinding and machining equipment to minimize volatile organic compound (VOC) emissions, overspray filters attached to the spray booths in Plant 5 and a dust collector which is connected to three baghouses are used to control particulate matter. All other emission sources are controlled by best management practices or work practice standards to minimize emissions. Work practice standards include, minimizing spills, prohibiting the discharge of materials into sewers not connected to a treatment plant, and storage of materials in containers with covers. VOC sources on site include quench oil tanks, grinding lines, the cup and cone production lines, two spray booths, a Robond dip line, 13 aqueous parts washer and one Stoddard solvent parts washer, Stoddard solvents are organic solvents that come from the refining of crude oil. There are five emergency generators, four are diesel powered and one is powered by natural gas. There are no underground storage tanks, however there is a 500-gallon aboveground diesel storage tank and a 500-gallon aboveground gasoline storage tank that stores fuel for the trucks and emergency generators used on site

The opening conference concluded at 9:45 am.

III. Observations

EPA inspectors were led on a walkthrough of the Facility at 9:55 am by Klay Foster, Robert Ribbing, George Karalus, Ryan Smith, and Cathee Andrews of Amsted Rail. John Reinhardt of VADEQ was also present for the walkthrough. EPA inspectors stated that photos would be taken during the Facility walkthrough (Attachment 2).

The Facility tour began with an inspection of Plant 1. Klay Foster explained to the inspection team that grinding, heat treating, machining, phosphating and assembling of cups and cones as well as spray painting for maintenance occurs in this plant. Here the inspection team was able to observe bars of raw steel that are "scaled off" before processing. The inspection team also observed the roller lines that are used to convey the raw materials for forging. From the forge lines the material is conveyed for machining and is then taken by fork trucks in bins to be placed in a hopper for heat treating. The material is then conveyed into a furnace, powered by natural gas, and the molten material is quenched before being placed into a coolant, reheating is

sometimes needed to meet design specifications. The entire heat-treating operation is conducted with the use of robots. Robert Ribbing stated that temperature in the heat-treating furnace exceeds 1800 degrees Fahrenheit. Following heat treatment, the cooled product is conveyed to the grinding line where the inspection team was able to observe the cone grinding machine. Klay Foster explained that the operation is a closed process. The coolant is recycled, and the solid particles that are generated, which consists of pieces of the grinding wheels and shavings, are extracted into a trough which is connected to a "Henry filter", the filter captures the solids which is referred to as swarf. Swarf is conveyed and stored in roll offs prior to being landfilled.

After the grinding process the finished product (cups and cones) is conveyed to the phosphating process, the phosphating process involves the application of chemicals including phosphoric acid and zinc phosphate and provides lubrication as well as corrosion protection to the finished product. The inspection team was also able to observe the assembly operation where cones were visible. Klay Foster explained that two cones go into a single cup to form part of the bearings. The cup is the outer part of the bearing, and the cones are the inner part that contain rollers.

The next area inspected was Building 5, this building houses the wire welding operation. The wires observed are used to produce the rollers used in the bearing. Klay Foster stated that the wire welding operation has been discontinued at this site. There is also a phosphating line which performs the same function as the phosphating line seen in Plant 1. The inspection team was able to observe a Model 81.8 parts washer which uses an aqueous solvent, and the dry overspray filters that are used to control emissions from the spray booths that are in this building. A 700-kW diesel powered emergency-generator which was installed in 1999 was also observed. This emergency generator is used to support the heat-treating operation in the event of a catastrophic event since it takes greater than one to three days for this process to cool down. The number of operating hours logged on the generator was observed to be 698.3 hours. A Wheelabrator X14000 dust collector was also inspected, it is connected to three baghouses that exhausts to the inside of the building. The dust generated is collected in drums and is then placed in roll offs prior to being landfilled. The pressure drop readings observed on the gauges of the three baghouses were 0.2 psig, 1.4 psig and 0.5 psig.

Building four was the next area inspected. The Inspection Team was able to observe the forging process in this building. The raw material, which consist of raw steel bars are conveyed to an induction heater after which the heated material is conveyed to the forging press. The forged material is then allowed to cool prior to the machining process. Machining can occur in this building, or the forged material is taken by forklifts or trailers to other buildings for machining and further processing. Klay Foster explained how the cups are manufactured: cylinders are conveyed into the electric induction heater and are pressed into balls, the balls are then re-milled to meet diameter specifications and then allowed to cool. EPA inspectors asked about the haze-like conditions observed in the building that obscured visibility and whether there were any air pollution control (APC) devices in use during the forging process. Klay Foster stated there were no APC devices for this process, however he stated that the Facility was currently working on a

new air ventilation system. Klay Foster also stated that industrial hygiene studies conducted in the building demonstrated that the existing conditions were within the OSHA permissible exposure limits for particulates.

The walkthrough concluded at 12:00 PM.

IV. Records Review

The records review commenced after lunch at 1:15 pm. EPA inspectors reviewed documents requested in the February 23, 2023, email to Klay Foster (see Attachment 1). Records were provided at the time of the inspection by Klay Foster, George Karalus and Robert Ribbing. Below are the records requested and what was provided:

1. Process flow diagram and plot plan. *The Facility provided a copy of the site's "Master Layout" and "Drawing No. CD-700245" which showed the site layout and plot plan.*
2. A list of all air emissions sources and corresponding dates of installation. *The Facility provided a list of all air emission sources, however the dates of installation for all emission sources were not always evident, EPA will request that the Facility provide this information.*
3. A list of all air pollution control (APC) devices. *A list of all APC sources was provided, APC devices included filter mists, A-Mist Absolent oil mist collector, spray booths filter media and a dust collector that is connected to three baghouses.*
4. A list of all combustion sources, including but not limited to boilers, engines, furnaces, and heaters. *A list of all combustion sources was provided for review, the combustion sources identified were furnaces, generators, ovens, and the phosphate lines.*
5. A list of all volatile organic compound (VOC) emitting sources. *A list of the VOC sources was provided and included the quench oil tanks, the roller grinding lines, the cup and cone lines, the Henry filter, the machining lines, the spray booths, and the solvent parts washers.*
6. A list of all hazardous air pollutant (HAP) emitting sources. *The Facility listed the HAP emitting sources as the Robond aqueous dip coating processes and the emergency diesel generators.*
7. Provide a list of all applicable NESHAP or NSPS regulations for your air emission source(s): *The Facility provided records which stated that the applicable CAA regulations are: 40 CFR 63 Subpart ZZZZ, 40 CFR 63 Subpart XXXXXX, and 40 CFR 60 Subpart IIII. EPA inspectors asked the Facility if 40 CFR Part 63 Subpart ZZZZZ - National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources was applicable since part of their operations involved melting steel.*
8. For the emergency generators provide the following information:
 - a. The make, serial number, model number or other model designation, model year and date of installation. *This information was provided for review and was found in the Reference Air Binder at Tab ZZZZ.*

- b. The hours of operations for each month for the past 5 years. *This information was provided for review and was found in the Reference Air Binder at Tab ZZZZ.*
 - c. The rated capacity and type(s) of fuel used. *This information was provided for review and was found in the Reference Air Binder at Tab ZZZZ.*
 - d. Indicate and describe if each engine has manufacturer installed or add-on emission controls. *This information was provided for review and was found in the Reference Air Binder at Tab ZZZZ.*
9. The hourly, monthly, and annual throughput in lbs of welding wire for the welding operation for the past 5 years. *This information was provided for review and was found in the 2018 to 2021 Tabs for historical data in the Reference Air Binder.*
10. The monthly and annual throughput of natural gas for the combustion equipment for the past 5 years. *This information was provided for review and was found in the Reference Air Binder Tab "GHG".*
11. The monthly and annual throughput of VOC in the coatings (lbs/gal or tons/yr) used in each of the paint spray booths for the past 5 years. *This information was provided for review and was found in the 2018 to 2021 Reference Air Binder Tabs.*
12. The estimated emissions of VOC (lbs/hr or tons/yr) in the following operations for the past 5 years: quench oil operations, coolant system operations, and Robond dip coating operation. *This information was provided for review and was found in the 2018 to 2021 Reference Air Binder Tabs.*
13. Safety data sheets (SDS) showing VOC content and HAP content for each stain, coating, adhesive, thinner or reducer in use. *SDS were provided for review.*
14. The number of cups and cones processed through the coolant system and quench oil operations per year for the past 5 years. *This information was provided for review and was found in the 2018 to 2021 Reference Air Binder Data Tabs.*
15. The amount of chemicals processed annually through the Robond dip coating operation for the past 5 years. *This information was provided for review and was found in the 2018 to 2021 Reference Air Binder Data Tabs.*
16. Records of scheduled and unscheduled maintenance of APC equipment for the past 5 years. *This information was provided for review and was found in the Reference Air Binder "Spray Booth Filter", and "Maintenance" Tabs as well in the SAP software system and the Maintenance Connect software system where it is digitally stored.*
17. Results of visual emission evaluations for the past 5 years. *Visual emission evaluations from 2018 to the November 2021 are in the "Subpart XXXXXX" Tab in the Reference Air Binder.*
18. Any reports of occurrences of excess emissions, malfunctions, shutdown, or failure associated with APC equipment for the past 5 years. *The Facility representative, Klay Foster, stated that there have not been any excess emissions, malfunctions, shutdown, or failure in the past five years.*

19. A copy of the CAA inspection report conducted by the State on 2/23/2021. *The report was provided for review, it was located in the Reference Air Binder "Inspections" Tab. An electronic copy was also emailed to EPA.*

V. Closing Conference

After the records review, EPA inspectors, Klay Foster, Robert Ribbing, George Karalus, Cathee Andrews, and Ryan Smith of Amsted Rail, as well as John Reinhardt, of VADEQ had a brief closing conference to ask additional questions and discuss observations. The EPA inspectors noted that the investigation is on-going, and any areas of concern identified in the final reports do not necessarily reflect a violation or deviation, rather, they are areas that will require further investigation. EPA also noted that they would issue an inspection report within in 60 days, with a copy to the State. Simultaneously, EPA will perform a detailed review of records and may have additional questions. The inspection concluded at 3:00 pm.

The following have been identified as *potential* issues during the inspection. They are issues that require either further investigation by EPA or additional information or explanation by Amsted Rail.

- EPA will review applicability of 40 CFR Part 63 Subpart ZZZZZ – National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries Area Sources
- Copies of SDS for raw materials will be requested to determine applicability with 40 CFR Part 63 Subpart XXXXXX – National Emission Standards for Hazardous Air Pollutants Area Source Standards for Nine Metal Fabrication and Finishing Source Categories. This includes SDS for the material used for roller production. The Facility stopped maintaining records to demonstrate compliance with this rule in November 2021 when the ESAB Wire Welding Line ceased operations.
- A request will be made for the dates of installation for all emission sources currently in use, including but not limited to VOCs and particulate emissions.
- A review will be conducted of all emission sources to confirm the Synthetic Minor status of Amsted Rail.

VI. List of Attachments

- Attachment 1: Email correspondence to Klay Foster of Amsted Rail of records requested to review during inspection
- Attachment 2: Photo Log: Photos # 29 – 55. Amsted Rail Claimed CBI for four Photos, these photos # 32, 37, 38, and 44 will be handled as CBI.