Emissions Minimization Plan

Regulation 12, Miscellaneous Standards of Performance, Rule 13
Foundry and Forging Operations

United States Pipe and Foundry Company, LLC
District Site #A0083
1295 Whipple Road
Union City, CA 94587
May 7, 2021

☒ Public Copy
☐ Confidential Copy

Table of Contents

Responsible Manager Certification
12-13-404.1

I, as the Responsible Manager of this facility, hereby certify that as of this date, this Emissions Minimization Plan contains all elements and information required of a complete EMP pursuant to District Regulation Section 12-13-403 and that the information contained in this EMP is accurate.

Certified by: _____ *Dated:* 5-7-21

Henry W. Mentink, Plant Manager

Responsible Manager

Designation of Confidential Business Information

Describe the information you designate as "CONFIDENTIAL" that is trade secret or otherwise exempt under law from public disclosure. Specify what is "CONFIDENTIAL" and include specific section(s) and corresponding page number(s).

Name of Section / Page Number(s)	Description of Confidential Information

Company Description

United States Pipe and Foundry Company, LLC (US Pipe) owns and operates an iron foundry in Union City, California (UC) for the production of ductile iron pipe. Iron scrap is melted in a cupola furnace and the molten metal is cast into pipe using reusable molds.

US Pipe is classified as a Large Foundry and is subject to air emission regulations described in the Code of Federal Regulations, Title 40 of the Code of Federal Regulations, National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries Area Sources, Part 63, Subpart ZZZZZ.

The facility is also subject to the newly promulgated Bay Area Air Quality Management District (BAAQMD) Regulation 12-13: Miscellaneous Standards of Performance for Foundry and Forging Operations. The purpose of this Rule is to require the development of and compliance with Emissions Minimization Plans designed to minimize the fugitive emissions of particulate matter and odorous substances from foundries and forges operating within the District.

As part of Regulation 12-13 requirements, the facility reported to the BAAQMD the list of the operations, processes, and equipment used for its Metal Melting, Tapping and Mold and Core Making Operations which are subject to 40 CFR Part 63, Subpart ZZZZZ: NESHAP for Iron and Steel Foundries Area Sources, Section 63.10895(b). In addition, this facility submitted to the BAAQMD a copy of its written Operation and Maintenance Plan that was required by the US EPA Administrator pursuant to 40 CFR Part 63, Subpart ZZZZZ: NESHAP for Iron and Steel, Section 63.10896.

This Emission Minimization Plan (EMP) is developed pursuant to Regulation 12-13. This EMP details the management practices, measures, equipment and procedures that are employed or are scheduled to be implemented to minimize fugitive emissions of particulate matter and of odorous substances, as prescribed in the regulations, particularly in Sections 12-13-402 and 403.

As stipulated in the regulation, this EMP has to be reviewed by the BAAQMD Air Pollution Control Officer (APCO) for completeness. Once deemed complete, the APCO shall make the complete Plan available for public comment. Thus, this EMP must also be revised accordingly based on comments received from the public and APCO's recommendations, if any, for additional processes and procedures to further reduce or prevent fugitive emissions from the foundry based on technical and economic feasibility, and made in consideration of worker health and safety.

Company Organizational Chart and Schedule of Management Operators
12-13-403.1.3

A. *Company Organizational Chart-* Attach a copy of the organizational chart of the company, which describes the business structure and includes the name of the facility's Responsible Official. Label the attachment with the corresponding Attachment #.

Attachment # 1

B. *Schedule of Management Operators* - Provide the names and contact information of the Onsite Responsible Manager(s) and Onsite Alternate Contact(s) and their duty schedule.

Onsite Responsible Manager(s)

Name:
Title: Plant Manager
Phone:
Email:
Schedule/Shift:

Name:
Title: Operational Excellence Manager
Phone:
Email:
Schedule/Shift:

Onsite Alternate Contact(s)

Name:
Title: Maintenance Manager
Phone:
Email:
Schedule/Shift: (varies)

Name:
Title: Environmental Engineer
Phone:
Email:
Schedule/Shift:

Contents of the EMP

12-13-403

The owner or operator of the foundry or forge subject to Section 12-13-401 shall prepare a complete and accurate EMP that details the management practices, measures, equipment and procedures that are employed or scheduled to be implemented to minimize fugitive emissions of particulate matter and odorous substances for the operations subject to the EMP.

A. ***Operations Subject to EMP and Schedule of Operations***

B. ***Description of Operations*** - Facilities with operations under 12-13-402 must list and provide description of all process equipment, material usages, abatement and control equipment and monitoring parameters to reduce fugitive emissions of particulates and odors. Please provide information for all the following operations that apply.

C. ***Management Practices to Reduce Fugitive Emissions***- Facilities with operations under 12-13-402 must list and provide descriptions of all preventative maintenance activities, pollution prevention and source reduction measures to reduce fugitive emissions of particulates and odors. Provide schedules of activities conducted.

D. ***Description of Abatement and Control Equipment***- Facilities must provide a comprehensive list of all abatement and control equipment for operations subject to 12-13-402 and name the source(s) of operation it abates.

A. Operations Subject to EMP and Schedule of Operations

The EMP shall address all of the following operations that are conducted at a foundry or forge per 12-13-402.

Please check all facility operations that apply and provide the schedule of operation.

Operation		Schedule of Operations
☒ 402.1	Mold and Core Making Operations	
☒ 402.2	Metal Management	
☒ 402.3	Furnace Operations, including tapping and pouring	
☐ 402.4	Forging Operations	
☒ 402.5	Casting and Cooling Operation	
☐ 402.6	Shake Out Operations	
☒ 402.7	Finishing Operations	
☐ 402.8	Sand Reclamation	
☒ 402.9	Dross and Slag Management	

402.1 Mold and Core Making Operations

B. Description of Operations - MOLD AND CORE MAKING OPERATIONS

Section #	Equipment Name and Manufacturer /Model #	District S# and Applicable NESHAPs Section	NAME OF MATERIALS USED IN MOLDING OPERATIONS					ABATEMENT					
			Binders	Coatings	Adhesives	Mold Release Agents	Other	Source Abated	Abatement Required by Permit	A#	Type of Abatement and Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	RJ Machinery Co. Inc Model#2436	FS-53 (Exempt) N/A		None	None	None	None	☐ Yes ☐ No	☐ Yes ☐ No		None	☐ Yes ☒ No	
2	RJ Machinery Co. Inc Model#2436	FS-54 (Exempt) N/A		None	None	None	None	☐ Yes ☐ No	☐ Yes ☐ No		None	☐ Yes ☒ No	
3	RJ Machinery Co. Inc Model#2436	FS-55 (Exempt) N/A		None	None	None	None	☐ Yes ☐ No	☐ Yes ☐ No		None	☐ Yes ☒ No	
4	RJ Machinery Co. Inc Model#2436	FS-56 (Exempt) N/A		None	None	None	None	☐ Yes ☐ No	☐ Yes ☐ No		None	☐ Yes ☒ No	
5	RJ Machinery Co. Inc Model#2436	FS-57 (Exempt) N/A		None	None	None	None	☐ Yes ☐ No	☐ Yes ☐ No		None	☐ Yes ☒ No	
6	RJ Machinery Co. Inc Model#2436	FS-81 (Exempt) N/A		None	None	None	None	☐ Yes ☐ No	☐ Yes ☐ No		None	☐ Yes ☐ No	
7	Core Coating Model# Unknown	FS-58 (Exempt) N/A	None	None	None	None	None	☐ Yes ☐ No	☐ Yes ☐ No		None	☐ Yes ☐ No	

B. Description of Operations – MOLD AND CORE MAKING OPERATIONS

Provide information on binders used in mold and core making operations.

Section #	Name of Binder	Binder Mix Ratio	Name of Source(s) and/or District S# Where Binder Is Used	Product Specification per MSDS
1	Resin Coated Sand		S-53 (Exempt)	VOC CONTENT (%): 0.492 lb/ton of sand PHENOL CONTENT (%): 0.189 lb/ton of sand
2	Resin Coated Sand		S-54 (Exempt)	VOC CONTENT (%): 0.492 lb/ton of sand PHENOL CONTENT (%): 0.189 lb/ton of sand
3	Resin Coated Sand		S-55 (Exempt)	VOC CONTENT (%): 0.492 lb/ton of sand PHENOL CONTENT (%): 0.189 lb/ton of sand
4	Resin Coated Sand		S-56 (Exempt)	VOC CONTENT (%): 0.492 lb/ton of sand PHENOL CONTENT (%): 0.189 lb/ton of sand
5	Resin Coated Sand		S-57 (Exempt)	VOC CONTENT (%): 0.492 lb/ton of sand PHENOL CONTENT (%): 0.189 lb/ton of sand
6	Resin Coated Sand		S-81 (Exempt)	VOC CONTENT (%): 0.492 lb/ton of sand PHENOL CONTENT (%): 0.189 lb/ton of sand

C. Management Practices to Reduce Fugitive Emissions – MOLD AND CORE MAKING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for core and mold making operations.

Section #	Name of Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM
1	None		
2	None		
3	None		
4	None		
5	None		
6	None		
7	None		

C. Management Practices to Reduce Fugitive Emissions – MOLD AND CORE MAKING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Sweeping of ground	To cleanup dirt and spillages	Daily; once a day at end of production

402.2 Metal Management

B. Description of Operations - METAL MANAGEMENT			
Section #	Name of Non-Exempt Metal or Metal Alloy Used for Production	Metal Type	Method of Verification for Determining Chemical Composition
1	Scrap metals: Cut plate & structural steel; Foundry steel Busheling steel; Motor blocks less transmissions; Shredded auto bodies (frag).	☒ Ferrous ☐ Non-Ferrous	Once scrap metals have been melted and become a molten iron, cup samples are taken and analyzed for the metal chemistry in an Spectro machine.
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	
		☐ Ferrous ☐ Non-Ferrous	

B. Description of Operations - METAL MANAGEMENT

Describe the facility's metal inspection program, work practice standards and material acquisition plan/procedures upon receipt of scrap or unprocessed metal. Include any pollution prevention management practices and source reduction measures to ensure the metal received is clean.

US Pipe Union City Pipe Plant has a metallic scrap broker (Morris Iron and Steel Co., Inc) chosen as the exclusive agent for procuring scrap at U.S. Pipe's Union City plant. A Materials Acquisition Program has been developed that requires scrap to be free, to the extent practicable, of organics (such as plastics and petroleum-based oils) and HAP metals (such as mercury and lead).

For organics, the scrap supplier shall, to the extent practicable, remove plastics and ensure scrap materials are drained free of liquids. For HAP metals, the scrap supplier shall, to the extent practicable, remove accessible mercury switches from trunks and hoods of automotive bodies and also, to the extent practicable, remove lead components such as batteries and lead wheel weights.

Facility has no scrap certification program but has a scrap inspection and scrap materials acquisition program. U.S. Pipe representatives responsible for the handling and processing of scrap materials and familiar with scrap quality (melting supervisors, crane operators, crane followers, etc.) shall do a visual inspection on each shipment of scrap materials that arrives at U.S. Pipe plant in Union City. The U.S. Pipe inspectors shall use the Scrap Receiving Form in conducting their visual inspections prior to receiving the scrap delivery. The inspection shall consist of a visual observation of random scrap shipments to ensure that the scrap material, to the extent practicable, does not contain free flowing liquids, visible mercury switches, visible lead wheel weights, or visible battery parts. Scrap materials containing free-flowing liquids, visible mercury switches, visible lead wheel weights, or visible battery parts are rejected. If US Pipe representative's inspection warrants a scrap rejection, US Pipe will call the scrap broker about the rejection and the reasons for the rejection.

US Pipe employees are given verbal instructions (training) as needed to ensure they know and understand work practice standards and metal management procedures. A review of procedures with the employees is also done whenever there is a change in scrap specifications (e.g., a change in spec's for scrap sizes).

Sampling and analyzing of scrap metal as per delivery is not conducted; however, once scrap metals have been melted and become a molten iron, cup samples are taken and analyzed for the metal chemistry in an Spectro machine. If metal chemistry problem is encountered and the scrap metal delivered is the suspect, a sample is taken from the scrap pile to be analyzed for metal chemistry in an Specto machine.

C. Management Practices to Reduce Fugitive Emissions – METAL MANAGEMENT

Describe control measures to minimize fugitive emissions from scrap or unprocessed metal.

1. Footprint of the scrap metal pile has been reduced and scrap materials are stockpiled close to S-1 Cupola charging area. This measure eliminates the double movements of the scrap metal thus, reducing fugitive emissions from the extra movement of the scrap material from one pile to another pile.

2. Scrap delivery is limited to times between 6:00 AM and 2:00 PM only. By curtailing the scrap delivery time, the duration of fugitive emission during deliveries is reduced to eight hours only, instead of more than eight hours.

3. A water truck is used routinely for dust control at least once a month, or whenever the roads become dusty.

4. A street sweeper vehicle is used routinely to sweep the yard at least once a week, or whenever the roads become dusty.

5. The area between the A-13 baghouse and the slag shed has been paved.

402.3 Furnace Operations

B. Description of Operations - FURNACE OPERATIONS

Section #	Furnace Name and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Type of Operation	Source Abated	Type of Abatement Device	District A#	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	Cupola		☒ Melting ☐ Heat Treating	☒ Yes ☐ No	Afterburner Cupola Baghouse Ductile Baghouse	A-3, A-13 A-10	Combust carbon monoxide; combust any trace amounts of VOC or oil from engine blocks and scrap metals; control particulate matter emissions	☒ Yes ☐ No	Continuous temperature monitor; A-3 Afterburner temperature at 1550 deg F whenever S-1 Cupola is in operation Daily A-13 visible emission monitoring (Method 22); Ringelmann No.1 opacity <= 3 minutes aggregated in any hour Continuous A-13 Baghouse differential pressure monitor; maintain prerssure differential between 0.25 to 8 inchesof water column Daily preventive maintenance records for A-13 Monthly inspection of A-13 baghouse (NESHAP) Semi-annual opacity testing (Method 9) for fugitive emissions from furnace building (NESHAP) Weekly preventive maintenanace records for A-10 Weekly A-10 visible emission monitoring (Method 22); Ringelmann No.1 opacity <= 3 minutes aggregated in any hour A-13 Source test for Particulate Matter every five years
2	Annealing Oven	S-15 None	☐ Melting ☒ Heat Treating	☐ Yes ☐ No	None			☐ Yes ☐ No	Monthly visible emission monitoring (Method 22); Ringelmann No.1 opacity <= 3 minutes aggregated in any hour
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	

			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	
			☐ Melting ☐ Heat Treating	☐ Yes ☐ No				☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - FURNACE OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for furnace operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM
1	Afterburner-North American 214-8A	Clean/scrape dust buildup Replace thermocouples as needed	Clean every eight weeks
2	Baghouse-GMD Model #289-14-6WI	Baghouse inspection Baghouse cleaning cycles and bag changes Clean/empty hoppers	Daily inspection of the double flap airlocks for continuous operations; checking of screw conveyor if working; checking for system air leaks; checking for static pressure and baghouse differential pressure; checking the smokestack for any visibles;. The baghouse cleaning cycle is based on baghouse differential pressure. Baghouse will start cleaning when the preset diffrentail pressure (3 IWC) is attained, Daily cleaning/emptying of baghouse hoppers; sweeping of the floors and cleaning the area.
3	Baghouse-Harsell Baghouse (Custom Built)	Baghouse Inspection Clean/empty hoppers	Weekly inspection of the baghouse; checking if dampers open and

	Baghouse has no broken bag leak detectors		close; checking for compressed air leak; checking for excessive ID fan vibration; visual inspection of shakers;checking baghouse differential pressure. The baghouse cleaning cycle is based on timer. Baghouse will start cleaning at preset times: 3 seconds shake for one section and 10 minutes break; then 3 second shake for the second section and 10 minutes break, etc. (Drum Switch Cycle). Clean/empty at least once a year.

C. Management Practices to Reduce Fugitive Emissions - FURNACE OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Cleaning of baghouse berm area and pavement.	This is a housekeeping activity to keep the area clean from dust coming from loading/unloading of scrap metals and foundry operations.	Daily; once a day at end of production.

402.4 Forging Operations

B. Description of Operations - FORGING OPERATIONS										
Section #	Equipment Name and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Description of Use	Name of Lubricants and/or Oils	Other Materials Used	Source Abated	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	
						☐ Yes ☐ No			☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - FORGING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for forging operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - FORGING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity

402.5 Casting and Cooling Operations

B. Description of Operations - CASTING AND COOLING OPERATIONS									
Section #	Name of Pouring and Cooling Operations and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Cooling Time of Product or Source	Designated Locations of Cooling Operation	Source Abated	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	Casting Machine #171 (Model- Custom Built)	FS-44 District Exempt No Applicable NESHAPs	25 secs	Main Manufacturing Building - Casting Area	☐ Yes ☐ No	None		☐ Yes ☐ No	
2	Casting Machine #172 (Model-Custom Built)	FS-45 District Exempt No Applicable NESHAPs	25 secs	Main Manufacturing Building - Casting Area	☐ Yes ☐ No	None		☐ Yes ☐ No	
3	Casting Machine #173 (Model-Custom Built)	FS-46 District Exempt No Applicable NESHAPs	27 secs	Main Manufacturing Building - Casting Area	☐ Yes ☐ No	None		☐ Yes ☐ No	
4	Casting Machine #174 (Model-Custom Built)	FS-47 District Exempt No Applicable NESHAPs	35 secs	Main Manufacturing Building - Casting Area	☐ Yes ☐ No	None		☐ Yes ☐ No	
					☐ Yes ☐ No			☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - CASTING AND COOLING OPERATIONS

Describe the method to verify adequate cooling times are achieved to ensure minimization of fugitive emissions of particulates and odors prior to commencing shake out operations.

Our casting is done inside steel molds in the casting machines. The bell-shape-end of the pipe is the only part made of core sand mold. This sand mold is broken when the cast pipe is pulled out from the casting machine by means of a mechanical pipe puller at the end of the casting cycle. There is no shake-out operations.

Our casting machines have a cooling cycle by design and we do not have to wait an extra time to cool the sand mold. As soon as casting machine goes downhill after spinning the molten iron to make it hard enough, the cast pipe is pulled out from the steel mold by the mechanical pipe puller.

C. Management Practices to Reduce Fugitive Emissions - CASTING AND COOLING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for casting and cooling operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - CASTING AND COOLING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Sweeping/cleaning of the casting machines area	Clean the area to reduce dust and fugitives	Daily: Once a day at the end of production.

402.6 Shake Out Operations

B. Description of Operations - SHAKE OUT OPERATIONS									
Section #	Name of Shakeout Operations and Manufacturer/ Model #	District S# and Applicable NESHAPs Section	Describe Location of Shake Out Operation	Source Abated	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - SHAKE OUT OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for shake out operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - SHAKE OUT OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity

402.7 Finishing Operations

B. Description of Operations - FINISHING OPERATIONS

Section #	Type of Operation	District S# and Applicable NESHAPs Section	Describe Location of Finishing Operation	Number of Machines	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
1	☐ Grinding ☐ Welding ☒ Other: Cutting	S-12 (District Exempt) NESHAP Not Applicable	Main Manufacturing Building - Pipe Run Area	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	A-7	Baghouse	Capture particulate	☒ Yes ☐ No	Presure Drop Monitor. Bags are cleaned when pressure reaches 5.12 inches of water column.
2	☒ Grinding ☐ Welding ☐ Other:	S-13 (District Exempt) NESHAP Not Applicable	Main Manufacturing Building - Pipe Run Area	GRINDERS: 1 WELDERS: OTHER:	☒ Yes ☐ No	A-8	Baghouse	Capture particulate	☐ Yes ☒ No	None. Bags are cleaned manualy at end of production whenever this baghouse is used.
3	☒ Grinding ☐ Welding ☐ Other:	S-14 (District Exempt) NESHAP Not Applicable	Main Manufacturing Building - Pipe Run Area	GRINDERS: 1 WELDERS: OTHER:	☒ Yes ☐ No	A-18	Baghouse	Capture particulate	☒ Yes ☐ No	Presure Drop Monitor. Bags are cleaned when pressure reaches 6 inches of water column.
4	☐ Grinding ☐ Welding ☒ Other: Cutting	S-30 (District Exempt) NESHAP Not Applicable	Main Manufacturing Building - Pipe Run Area	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	A-8	Baghouse	Capture particulate	☐ Yes ☒ No	None. Bags are cleaned manualy at end of production whenever this baghouse is used.
5	☐ Grinding ☐ Welding ☒ Other: Sand Blasting	S-7 NESHAP Not Applicable	Main Manufacturing Building - near Casting Area	GRINDERS: WELDERS: OTHER: 1	☒ Yes ☐ No	A-5	Baghouse	Capture particulate	☐ Yes ☒ No	None. Bags are cleaned continuously during production and hopper is emptied daily at the end of production.
6	☒ Grinding ☐ Welding ☐ Other:	FS-59 (District Exempt) NESHAP Not Applicable	TR Flex Building	GRINDERS: 1 WELDERS: OTHER:	☒ Yes ☐ No	FA-22	Dust Collector	Capture particulate	☐ Yes ☒ No	None. Settling chamber is cleaned once a day at the end of production. Filters are cleaned once a week at the end of production.
7	☐ Grinding ☐ Welding ☒ Other: Surface Coating	S-17 (Surface Coater)	Paint and Packaging Area	GRINDERS: WELDERS: OTHER: 1	☐ Yes ☒ No				☐ Yes ☒ No	
	☐ Grinding ☐ Welding ☐ Other:			GRINDERS: WELDERS: OTHER:	☐ Yes ☐ No				☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - FINISHING OPERATIONS

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for finishing operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM
1	A-7 Baghouse-Donaldson Model # DFT2-4 Baghouse has no broken bag leak detectors	Baghouse cleaning cycles and filter bag change	Bags are cleaned when pressure reaches 5.12 inches of water column
2	A-8 Baghouse- Model LMC FSD-258 Baghouse has no broken bag leak detectors	Baghouse cleaning cycles and filter bag change	Bags are cleaned manualy at end of the day when baghouse is used.
3	A-18 Baghouse-Torit Downflo Model # DFT2-4 Baghouse has no broken bag leak detectors	Baghouse cleaning cycles and filter bag change	Bags are cleaned when pressure reaches 6 inches of water column.
4	A-8 Baghouse- Model LMC FSD-258 Baghouse has no broken bag leak detectors	Baghouse cleaning cycles and filter bag change	Bags are cleaned manualy at end of the day when baghouse is used.
5	A-5 Baghouse- Rees Model #3-700 Baghouse has no broken bag leak detectors	Baghouse cleaning cycles and filter bag change	Bags are cleaned continuously during production and hopper is emptied daily at the end of production.
6	FA-22 Dust Collector-Torit Model #84	Dust collector chamber and filter cleaning	Dust settling chamber is cleaned once a day at the end of production. Filters are

	Baghouse has no broken bag leak detectors		cleaned once a week at the end of production.
7	Not Applicable	Use of a low VOC (less than 1 lb/gal VOC) coating material.	Not Applicable

C. Management Practices to Reduce Fugitive Emissions - FINISHING OPERATIONS

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Cleaning of the Finishing area that includes the floors of the pipe grinders, pipe cutters and sand blaster.	The area is cleaned to reduce the amount of potential airborne material from the area	Monthly: Once a month.

402.7 Sand Reclamation

B. Description of Operations - SAND RECLAMATION

Section #	Name of Sand Reclamation Equipment and Manufacturer/Model #	District S# and Applicable NESHAPs Section	Describe Type of Sand Reclamation Equipment	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	
				☐ Yes ☐ No				☐ Yes ☐ No	

C. Management Practices to Reduce Fugitive Emissions - SAND RECLAMATION

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for sand reclamation operations.

Section #	Abatement Device and Manufacturer/Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - SAND RECLAMATION

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity

402.9 Dross and Slag Management

B. Description of Operations - DROSS AND SLAG MANAGEMENT

Section #	Material	Describe Location for Cooling of Material	Abated Source	A#	Type of Abatement Device	Purpose of Abatement	Abatement Monitored	Monitoring Parameters	Material Disposition
1	Dross	Dross-Not applicable	☐ Yes ☐ No				☐ Yes ☐ No		☐ Offsite Recycling ☐ Offsite Disposal ☐ Onsite Reprocessing
2	Slag	Cupola slag is a by-product material that comes out on top of the molten iron as it comes out from the Cupola after melting. The Cupola slag is skimmed off from a through by gravity and drops to a conveyor that conveys the slag into the ground outside the Melting building. The Cupola slag conveyor has a water hose that is used to cool the slag and to minimize dust. The cupola slag that accumulates on the ground is then stockpiled and sprinkled with water to further cool the slag and to minimize dust, as required. The desulfurization slag is another by-product material that comes out on top of the molten iron after the molten iron is treated with lime to remove the sulfur. The desulfurization slag is skimmed off from the treating ladle by gravity and drops to an open vessel inside the Melting building where it is cooled with ambient air. No water is used for the desulfurization slag. The vessel is then emptied outside the Melting building to further cool the slag with ambient air prior to its offsite shipment.	☐ Yes ☒ No				☐ Yes ☒ No		☒ Offsite Recycling ☒ Offsite Disposal ☐ Onsite Reprocessing

C. Management Practices to Reduce Fugitive Emissions - DROSS AND SLAG MANAGEMENT

Provide description of preventative maintenance (PM) activities including PM schedules and work practice standards for each abatement device for dross and slag operations.

Section #	Abatement Device and Manufacturer/ Model #	Description of Preventative Maintenance Activity and Work Practice Standards	Schedule of PM

C. Management Practices to Reduce Fugitive Emissions - DROSS AND SLAG MANAGEMENT

Provide description of other housekeeping measures to abate and/or minimize fugitive emissions of odors and/or particulate matter at sources or source areas.

Section #	Description of Housekeeping Measure	Purpose of Activity	Schedule of Activity
1	Use of water spray and water sprinkler	To cool the slag and to reduce dust	Daily: Once a day during operation
2	Stock piling of slag material.	To organize slag material into one pile prior to its offsite shipment. This reduces the size of the slag footprints by keeping one pile instead of several piles of materials.	Daily: Once a day during operation
3	Shipping of slag material offsite.	To maintain low inventory of slag material thus reducing the amount of potential airborne material	Daily: Shipping of the slag material daily when truck volume is attained and the material is no longer hot.
4	Use of a metal shed to store slag.	To reduce gutive emission	Daily: Storing of the slag material daily in the shed.

D. Description of Abatement and Control Equipment

Provide a comprehensive list of all abatement and control equipment for operations subject to 12-13-402 and identify the source(s) of operation in which it abates. If the abatement equipment abates multiple sources, provide a detailed description of how the abatement is designated to those sources.

Section #	Name of Abatement Equipment	District A#	Names of Source(s) Abated	District S#	Description of Abatement
1	Afterburner-North American 214-8A	A-3	Cupola	S-1	Captures particulates
2	Baghouse-REES Model #3-700	A-5	Mold Sandblast	S-7	Captures particulates
3	Baghouse-Harsell Model	A-7	Abrasive Cut-off Saw	S-12	Captures particulates
4	Baghouse-LMC Model FSD-258	A-8	Bevel and O.D. Grinder	S-13 & S-30	Captures particulates
5	Baghouse-Harsell Model	A-10	Ductile Treating	S-4	Captures particulates
6	Baghouse-GMD Model #289-14=6WI	A-13	Cupola	S-1	Captures particulates
7	Baghouse-Torit Downflo Model #DFT2-4	A-18	O.D. Grinder	S-14	Captures particulates
8	Baghouse-Saunco Model #S10-108-1449	A-20	Bell Blow Out Dust Collector	S-8	Captures particulates
9	Dust Collector-Torit Model #84	FA_22	TRF O.D. Grinder Dust Collector	FS-50	Captures particulates

Technical Data
12-13-403.1

A. *Process Flow Diagram* – Facilities must indicate all operations in Section 12-13-402, the flow of materials used and identify all monitoring of processes, abatement and controls to minimize emissions beginning from material receipt to achievement of final product. Identify all abatement and control devices by District source numbers according to District Permit or as exempt from District Permit. Label the attachment with the corresponding Attachment #.

Attachment # 2

B. *Facility Layout / Floor Plan* - Facilities must indicate all relative locations of processing equipment and monitoring and controls, all permitted and exempt sources identified in the process flow diagram per Section 12-13-403.1.1 and any other source(s) that may contribute to particulates and odors. Include all building walls, partitions, doors, windows, vents and openings and indicate all areas that have abatement for particulates and odors. Identify all metal melting and processing equipment by District source numbers according to District Permit or as exempt from District Permit. Label the attachment with the corresponding Attachment #.

Attachment # 3

Five-Year Review of the EMP: Schedule for Implementation of the EMP Elements and Fugitive Emissions Reductions 12-13-410

A. Provide a list of existing or current EMP elements in place during the 5-year review period (March 1, 2016 – February 28, 2021). Include a list of equipment, processes and procedures installed or implemented to reduce fugitive emissions and indicate the permit status if applicable. Specify the purpose for implementation and detail any employee training that was conducted. Any associated training materials shall be made available for Air District review upon request.

B. Provide a list of new or future EMP elements to be implemented following APCO approval of the EMP. Include a description, the purpose and schedule of the element(s) to be implemented.

A. 12-13-410 SCHEDULE FOR IMPLEMENTATION OF THE EMP ELEMENTS AND FUGITIVE EMISSIONS REDUCTIONS REALIZED WITHIN THE LAST 5 YEARS (MARCH 1, 2016 – FEBRUARY 28, 2021)							
Section #	**Identify Type of Operation per Section 12-13-402**	**Description of Equipment, Processes or Procedures Implemented Between March 1, 2016 and February 28, 2021**	**Permit Status**		**Implementation Date**	**Purpose of Implementation**	**Description of Employee Training**
1	Mold and Core Making Operations	Investigated the availability, efficiency and cost of alternative odor free core sand binders rather than installing an enclosure and abatement.	☐ A/C ☐ P/O ☒ N/A	Application # (if applicable):	January 2018	To investigate the availability, efficiency and cost of alternative odor free core sand binders rather than installing an enclosure and abatement. Annual VOC emissions from the core making process is estimated to be less than 1/2 ton per year. Core making is accomplished by heating resin coated sand in a core box. Finished cores are removed by hand and placed on a conveyor. Operators working the machines need to have clear line of sight and full access to the core machines, therefore enclosure would be challenging. We do not have a cost estimate for installing new enclosure, capture and control equipment. However, we believe installing new fugitive emissions capture and control equipment for core making operations is not reasonable for the minimal emissions reductions that would be realized.	
2	Furnace Operations	Installed a broken bag leak detector in the Cupola baghouse outlet duct work.	☐ A/C ☐ P/O ☒ N/A	Application # (if applicable):	Oct. 2016	To alert operations if emissions are coming from the stack due to a broken bag.	
3	Metal Management	Installed a new metal shed / enclosure with adequate equipment and personel access in the slag storage area. Evaluate if the shed / enclosure actually reduces fugitive emissions without causing production or personel safety issues.	☐ A/C ☐ P/O ☒ N/A	Application # (if applicable):	Dec 2019	To reduce fugitive dust.	

4	Metal Management	Paved selected unpaved areas such as the Shipping yard; area between baghose and lime slag shed.	☐ A/C ☐ P/O ☒ N/A	Application # (if applicable):	June 2016-Nov 2020	To reduce fugitive dust.	
5	Finishing Operations	Replaced broken glass windows in the Main manufacturing buildings including the Pipe Run area.	☐ A/C ☐ P/O ☒ N/A	Application # (if applicable):	July 2016 Nov 2020	To contain fugitive emission inside buildings	
6	Finishing Operation	Retired/scrapped old off-road vehicles in the plant.	☐ A/C ☐ P/O ☐ N/A	Application # (if applicable):	Nov 2016	To reduce emssion from exhaust of vehicles	
7	Mold and Core Making Operations	Used of a custom resin coated sand.	☐ A/C ☐ P/O ☒ N/A	Application # (if applicable):	Nov 2018	To reduce odor and to increase strength of the core sand material.	
8	Others	Considered including asphalt coating operations in the EMP. US Pipe has continued using a low-VOC content pipe coating at the Union City Foundry.	☐ A/C ☐ P/O ☒ N/A	Application # (if applicable):	January 2016	To reduce VOC emissions.	
			☐ A/C ☐ P/O ☐ N/A	Application # (if applicable):			

B. 12-13-410 NEW OR FUTURE EMP ELEMENTS TO BE IMPLEMENTED					
Section #	**Identify Type of Operation per Section 12-13-402**	**List Specific Elements to be Implemented Following APCO Approval of the Updated EMP**	**Projected Implementation Date**	**Description of Elements to be Implemented**	**Purpose of Implementation**
1	402.2 Metal Management	Replace old concrete pavement in the yard.	January 2022	Road paving projects in different areas of the Plant that will be spread over a period of time contingent on market condition.	To reduce fugive dust coming from the crevices of the old pavement.
2	402.7 Finishing Operations	Retire old off road vehicles used in the yard	December 2021	Old (Tier 0 or 1) forklifts and other off-road vehicleds will be retired; they have higher emission factors compared to newer (Tier 2, 3 or 4) vehicles.	To reduce fugitive dust coming from old forklifts and other off-road vehicles.
3	402.2 Metal Managementl	Install water spray/misting sytem on top of coke conveyor	June 2022	A low-pressure water spray/misting sytem will be installed on top of coke conveyor.	To reduce fugitive dust.
4	402.9 Dross and Slag Management	Investigate methods to improve handling of lime slag.	December 2023	Methods to improve handling of lime slag inside and outside the building will be investigated.	To reduce odor and fugitive dust.
5	402.5 Casting and Cooling Operation	Investigate the possibility of improving the capture effeciency of the A-20 Bell-blowout baghouse.	June 2022	The A-20 Bell-blowout baghouse inside the Main building will be evaluated on how to improve its capture effeciency.	To improve capture efficiency.

Appendix

Insert any attachments and supplemental information within the corresponding sections of the EMP or at the end of this document. Label each attachment with the corresponding Attachment #.

In the table below, list each Attachment # and provide the Page # and Section # (if applicable) of the EMP where the material is referenced.

Attachment #	Reference to Page # and Section # of EMP
1	Page #8, Section # 12-13-403.1.3 A
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #
	Page # , Section #

ATTACHMENT #1

A. COMPANY ORGANIZATIONAL CHART

UNITED STATES PIPE & FOUNDRY COMPANY, LLC