Capture System,
Baghouse Leak Detection,
& Control Device
Operation & Maintenance (O&M)
Preventive Maintenance Plan (PMP)
Scrap Certification & Selection Plan
Startup Shutdown & Malfunction Abatement (SSM)
Compliance Assurance Monitoring (CAM)
Mold Light-off

Plans

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Asama Coldwater Manufacturing, Inc.

Compliance Assurance Monitoring (CAM) Plan
Capture System, Baghouse Leak Detection & Control Devices

Operation & Maintenance Plan(O&M)

Preventive Maintenance Plan (PMP)

Scrap Certification & Selection Plan
Mold Light-off Plan

Startup Shutdown & Malfunction Abatement (SSM) Plan

1.0 INTRODUCTION

Asama Coldwater Manufacturing (ACM) operates an iron foundry located at 180 Asama Parkway, Coldwater, Michigan. In 2007, a new expansion foundry was constructed adjacent to the existing foundry. The construction of the new expansion foundry resulted in the facility becoming a major source of hazardous air pollutions (HAPS), and therefore subject to the applicable National Emission Standards for Hazardous Air Pollutants (NESHAP) for Iron and Steel Foundries, codified as 40 CFR Part 63 Subpart EEEEE. The facility became a major source on December 17, 2007 when the new foundry commenced startup.

These plans document certain responsibilities and procedures for the operation; maintenance and monitoring of air emission control equipment, and are consistent with malfunction planning requirements of the MACT Standard for Iron and Steel Foundries (40 CFR 63 §EEEEE) and Compliance Assurance Monitoring, or "CAM" requirements (40 CFR 64).

Specifically, 40 CFR 63.7710(b) requires that the owner "prepare and operate at all times according to a written operation and maintenance plan for each capture and collection system and control device for an emission source subject to an emission limit in Section 63.7690(a)". The operation and maintenance (O&M) plan for the new foundry was submitted in 2007. The O&M plan for the existing foundry was submitted in 2010. These plans have been updated and revised as needed.

Please note that this combined plan document also lists and provides information for the proper operation and maintenance of collection equipment as required by Michigan Rule 336.1911. There are overlapping requirements, so if a common requirement is addressed for one regulation, it will not be addressed for the other requirements. For example, the Rule 911 requirement for a preventative maintenance plan ("PMP") is already addressed as required by 63.7710 of MACT, so there will be no separate PMP listed here.

2.0 PROCESS DESCRIPTION

The following summary table is being used to provide the process descriptions for the emission units identified in this composite plan. This table has been submitted as part of the ROP renewal application in 2019. As part of this renewal, an update to emission unit IDs was requested to help simplify identification nomenclature which was found to be confusing over the years and link emission units to each respective foundry. Once the permit is finalized, the table will be updated.

UPDATED EMISSION UNIT SUMMARY TABLE

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
~~EUMPCC-S1~~ EU-GFMELTPOUR	George Fisher Foundry- Metal melting, pouring, and casting cooling process equipment with two electric induction furnaces with a combined daily average melting capacity of 8 tons per hour. Emissions from these processes are controlled by a 49,000 dscfm baghouse (BH# GF608). Previous EU ID - EUMPCC-S1	06/17/97 02/25/04	~~FGFOUNDRY-S1~~ FG-GFFOUNDRY ~~FGCAM_UNITS-S1~~ FG-CAMUNITS
~~EU-SANDSYSTEM-S1~~ EU-GFSANDSYS	George Fisher Foundry- Mold making, shakeout, and sand processing equipment. Emissions from these processes are controlled by a 66,000 dscfm baghouse (BH# GF610). Previous EU ID - EU-SANDSYSTEM-S1	06/17/97 02/25/04	~~FGFOUNDRY-S1~~ FG-GFFOUNDRY ~~FGCAM_UNITS-S1~~ FG-CAMUNITS
~~EUSHOTBLAST-S1~~ EU-SHOTBLAST	A shotblast machine with a mechanical pre-cleaner followed by a 7,500 scfm baghouse (BH# 603) that vents outside ~~on or~~ after August 14, 2006. Previous EU ID - EUSHOTBLAST-S1	06/17/97 08/14/06	NA
~~EU-MP-S1~~ EU-DSMELTPOUR	DISA Foundry- ~~Consists of~~ Two electric induction melting furnaces with an 11 ton holding capacity each, and a monorail pouring station with three ladles. Emissions from melting and pouring processes are controlled by associated hoods, enclosures, ductwork, and a 37,500 acfm baghouse (BH# DS602). Previous EU ID - EU-MP-S1	12/01/07 NA	~~FG-NEWFOUNDRY-S1~~ FG-DSFOUNDRY

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-MCS-S1 EU-DSCOOLSHAK	DISA Foundry - Consists of the Automated mold cooling conveyors and automated sand shakeout lines, including a flat deck shakeout system. Emissions from these processes are controlled by associated hoods, enclosures, ductwork, a baghouse (Baghouse #DS606), and a regenerative thermal oxidizer. The exhaust gas flow from this unit is approximately 61,200 acfm. Previous EU ID - EU-MCS-S1	01/01/07 06/20/13	FG-NEWFOUNDRY-S1 FG-DSFOUNDRY FGCAM_UNITS-S1 FG-CAMUNITS
EU-SS-S1 EU-DSMOLDSAND	DISA Foundry - Consists of the Molding machine and related sand handling equipment. Emissions from the mold making process are controlled by associated hoods, enclosures, ductwork, and a 56,900 acfm baghouse (BH #DS608). Previous EU ID - EU-SS-S1	12/01/07	FG-NEWFOUNDRY-S1 FG-DSFOUNDRY FGCAM_UNITS-S1 FG-CAMUNITS
EU-CCFBACK-S1 EU-DSCOOLSHOT	DISA Foundry - Consists of The back section of casting cooling conveyors and a shot blast machine. Emissions from this emission unit are controlled by associated hoods, enclosures, ductwork, and a 65,360 acfm baghouse (BH #DS604). Previous EU ID - EU-CCFBACK-S1	12/01/07	FG-NEWFOUNDRY-S1 FG-DSFOUNDRY FGCAM_UNITS-S1 FG-CAMUNITS
EUCOLDCLEANER-S1 EU-COLDCLEANER	Any cold cleaner that is grandfathered or exempt from Rule 201 pursuant to Rule 281(h), or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979. Previous EU ID - EUCOLDCLEANER-S1	06/17/97 NA	FG-COLDCLEANERS-S1
EUCONVEYOR-S1 EU-CONVEYOR	DISA Foundry - Casting cooling vibratory conveyor section that is covered and ventilated to a 28,000 dscfm baghouse (BH #DS604). Previous EU ID - EUCONVEYOR	01/01/04 NA	FG-RULE290-S1

Emission Unit ID	Emission Unit Description (Including Process Equipment & Control Device(s))	Installation Date/ Modification Date	Flexible Group ID
EU-EMERGEN1-S1	DISA Foundry - Diesel fired emergency power generator. Previous EU ID – no change	01/07/07	NA
EU-EMERGEN2-S1	Paint Line - Natural gas fired emergency power generator. Previous EU ID – no change	01/08/96	NA
~~EULine 1-S1~~ EU-PAINTLINE1	The GEOMET paint line systems consisting of a mixing room, a paint spray booth equipped with HVLP applicators and dry filter overspray control, and an induction cure process consisting of pre-curing and final cure steps for coating of metallic surfaces. Previous EU ID - EULine 1-S1	12/22/11	~~FG-COATING-S1,~~ ~~FG-MACT MMMM-S1~~ FG-MACTMMMM
~~EULine 2-S1~~ EU-PAINTLINE2	The GEOMET paint line systems consisting of a mixing room, a paint spray booth equipped with HVLP applicators and dry filter overspray control, and an induction cure process consisting of pre-curing and final cure steps for coating of metallic surfaces. Previous EU ID - EULine 2-S1	03/25/14	~~FG-COATING-S1,~~ ~~FG-MACT MMMM-S1~~ FG-MACTMMMM
~~EULine 3-S1~~ EU-PAINTLINE3	The GEOMET paint line systems consisting of a mixing room, a paint spray booth equipped with HVLP applicators and dry filter overspray control, and an induction cure process consisting of pre-curing and final cure steps for coating of metallic surfaces. Previous EU ID - EULine 3-S1	To Be Determined	~~FG-COATING-S1,~~ ~~FG-MACT MMMM-S1~~ FG-MACTMMMM

Emission Unit ID	Emission Unit Description (Process Equipment & Control Devices)	Installation Date / Modification Date	Flexible Group ID

EUGRINDER1	Reichmann grinder for automatic deburring of round parts including brake discs, clutch plates and other miscellaneous metal parts. The grinder is exhausted to a Waltz-Holtz Dustar 70,000 ACFM reverse air fabric filter collector. The fabric filter collector will be used for future in plant environment control.	With Permit Approval*	FGGRINDERS
EUGRINDER2	Reichmann grinder for automatic deburring of round parts including brake discs, clutch plates and other miscellaneous metal parts. The grinder is exhausted to a Waltz-Holtz Dustar 70,000 ACFM reverse air fabric filter collector. The fabric filter collector will be used for future in plant environment control.	With Permit Approval*	FGGRINDERS

FLEXIBLE GROUP SUMMARY TABLE

The descriptions provided below are for informational purposes and do not constitute enforceable conditions.

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
~~FG-FOUNDRY-S1~~ FG-GFFOUNDRY	Flexible group that includes two emissions units. Previous FG ID - FG-FOUNDRY-S1	~~EUMPCC-S1~~ EU-GFMELTPOUR ~~EUSANDSYSTEM-S1~~ EU-GFSANDSYS
FG-COLDCLEANERS-S1	Any cold cleaner that is grandfathered or exempt from Rule 201, pursuant to Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979. Previous FG ID – no change	~~EUCOLDCLEANER-S1~~ EU-COLDCLEANER
FG-RULE290-S1	Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201, pursuant to Rules 278 and 290. Previous FG ID – no change	~~EUCONVEYOR-S1~~ EU-CONVEYOR

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGCAM_UNITS-S1 FG-CAMUNITS	The equipment in this flexible group is subject to Compliance Assurance Monitoring, 40 CFR 64.6. Previous FG ID - FGCAM_UNITS-S1	EUMPCC-S1 EU-GFMELTP EUSANDSYSTEM-S1 EU-GFSANDSYS EU-MCS-S1 EU-DSCOOLSHAK EU-SS-S1 EU-DSMOLDSAND EU-CCFBACK-S1 EU-DSCOOLSHOT
FG-NEWFOUNDRY-S1 FG-DSFOUNDRY	All emission units of the new expansion foundry. Previous FG ID - FG-NEWFOUNDRY-S1	EU-MP-S1 EU-DSMELTPOUR EU-MCS-S1 EU-DSCOOLSHAK EU-SS-S1 EU-DSMOLDSAND EU-CCFBACK-S1 EU-DSCOOLSHOT
FG-COATINGS-S1 FG-PAINTLINES	Three GEOMET paint line systems each consisting of a mixing room, a paint spray booth equipped with HVLP applications and dry filter overspray control, and an induction cure process consisting of pre-curing and final cure steps for coating of metallic surfaces. Previous FG ID – FG-COATINGS	EULine1-S1 EU-PAINTLINE1 EULine2-S1 EU-PAINTLINE2 EULine3-S1 EU-PAINTLINE
FG-SOURCE-S1	All metallic surface coating lines and all associated purge and cleanup operations at the stationary source. This includes any metallic surface coating line covered by this or any other general permit or any permit to install issued pursuant to Rule 201, and any metallic surface coating line exempt from the requirement to obtain a PTI pursuant to Rule 287 and/or Rule 290. Previous FG ID – no change	NA

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FG-MACT MMMM-S1 FG-MACTMMMM	Each new, reconstructed, and existing affected source described in 40 CFR 63.3881(a)(1), including the subcategories listed in 40 CFR, Part 63, Subpart MMMM, 40 CFR 63.3881(a)(2) through (6), meeting the applicability requirements of 40 CFR 63.3881(b), which is engaged in the surface coating of miscellaneous metal parts and products. The affected source includes the collection of all the items listed in 40 CFR 63.3882(b)(1) through (4). Surface coating is defined by 40 CFR 63.3881, as the application of coating to a substrate using, for example, spray guns or dip tanks. Surface coating also includes associated activities, such as surface preparation, cleaning, mixing, and storage if they are directly related to the application of the coating. The 40 CFR, Part 63, Subpart MMMM, does not apply to surface coating or a coating operation that meets any of the criteria of 40 CFR 63.3881(c)(1) through (17). Previous FG ID - FG-MACT MMMM-S1	EULine1-S1 EU-PAINTLINE1 EULine2-S1 EU-COATLINE2 EULine3-S1 EU-COATLINE3

Flexible Group ID	Flexible Group Description	Associated Emission Unit IDs
FGGRINDERS	Two Reichmann grinders for automatic deburring of round parts including brake discs, clutch plates and other miscellaneous metal parts. The grinders are exhausted to a Waltz-Holtz Dustar 70,000 ACFM reverse air fabric filter collector. The fabric filter collector will be used for future in plant environment control.	EUGRINDER1 EUGRINDER2

2.1 Existing Foundry (George Fischer "GF")

The particulate emissions from the processes in the existing foundry process are controlled by two baghouses:

- The melting, pouring and casting cooling equipment
- The mold making, shakeout and sand processing equipment

2.1.1 Melting, Pouring and Casting Cooling Process Equipment (EUMPCC)

The metal melting, pouring, and casting process, identified as EUMPCC, includes two (2) electric induction furnaces with a nominal combined daily average melting capacity of 8 tons per hour. The emissions from the melting operations are captured with hoods over the furnaces and routed to a baghouse (SV-MPCC).

The molten metal from the furnaces is poured into ladles and transferred to a pouring station via a monorail system. At the pouring station, hot iron is poured into sand molds. A hood is located at the pouring station to collect emissions generated during the pouring process. Emissions from the pouring station collection hood are routed through the SV-MPCC baghouse.

Once the molten metal has been transferred into the sand molds, the metal will immediately begin to cool and harden. Emissions generated during mold cooling are captured by a collection hood and routed to the SV-MPCC baghouse.

2.1.2 Mold Making, Shakeout and Sand Processing Equipment (EUSANDSYSTEM)

After the appropriate cooling time, the sand mold/metal combinations enter a shakeout system where the sand is separated from the metal castings. This system first includes vibrating conveyors that are used to loosen the metal castings from the sand molds. After the conveyors, the sand molds and castings will enter a vibrating drum.

Following the vibrating drum, the loose sand and sprues and castings pass through a sand separator, where the sprues and castings are removed from the used sand. The sprues are then transferred back to the common metal holding area for re-melting, while the castings proceed to the cleaning and finishing operations.

The sand is separated from sprues and castings are sent to the sand system for recovery and re-use in the mold production process. The sand from the shakeout process are first screened and cleaned. After the screening process, the sand is then routed to a sand-cooling unit that uses air to cool the sand prior to re-mixing in a sand muller to form a mixture with seacoal that is used to construct new sand molds.

The conveyors that feed the shakeout process, the vibrating drum, and the downstream sand system equipment have associated hoods and enclosures designed to capture the process emissions. The emissions are then routed to the SVSS baghouse.

2.2 New Foundry (DISA)

The particulate emissions from the processes in the “new” foundry process are controlled by four baghouses. The automated cooling and shakeout line is also controlled by a regenerative thermal oxidizer (RTO) downstream of the EU-MCS baghouse to provide additional control of volatile organic hazardous air pollutant (VOHAP) emissions:

- The melting and pouring equipment
- The front portion of the casting cooling line and sand shakeout equipment
- The sand mold making and sand processing equipment
- The back portion of the casting cooling line and finishing equipment

2.2.1 Metal Processing and Pouring (EU-MP)

The two (2) Inductotherm electric induction furnaces are each rated at a holding capacity of about 11 tons (equivalent to 10 metric tons). Each melting furnace is capable of achieving a maximum melt rate of approximately 9 tons per hour. However, the nominal combined melt rate for the furnaces, based on the daily average capacity of downstream equipment, is 16.5 tons per hour.

The emissions from the furnace melting operations will be captured and routed to the dedicated MP baghouse (SV-MP).

The molten metal from the furnaces is transferred to ladles and to a single pouring station via a monorail system. At the pouring station, hot iron is poured into vertically-parted green sand molds. A side draft collection hood is located at the pouring station to collect emissions generated during the pouring process. Emissions from the pouring station collection hood will be routed to the MP baghouse (SV-MP).

2.2.2 Automated Mold Cooling and Sand Shakeout System (EU-MCS)

Once inside the sand molds, the metal will immediately begin to cool and harden. Immediately following the pouring station, the sand molds enter the "mold cooling" section of the automatic mold conveyor. The mold cooling section of the conveyer is enclosed and emissions generated are captured by several cooling hoods and routed to the MCS baghouse and RTO (SV-MCS). The TRITON-55.95 RTO was installed downstream of the EU-MCS baghouse on July 1, 2013.

. The metal and sand molds remain together while traveling down the conveyer until they are sufficiently cooled and hardened. After the appropriate cooling time, the sand mold/metal combinations enter a flat deck shakeout system. Similar to the mold cooling conveyer, the flat deck shakeout system is enclosed and emissions generated in this process are collected using fan assisted draft hoods and are routed to the MCS baghouse and RTO. In addition, hot sand from the parts on the shakeout system falls through to the "hot end" return sand conveyer which directs the sand back towards the storage silo and mold making process area. There are several emissions pickup points along the "hot end" of the return sand conveyer system that are considered part of the automated shakeout process and consequently considered part of the EU-MCS emission unit and routed to the MCS baghouse and then to the RTO (SV-MCS).

The used sand and sprue/castings are separated from the sand molds once they leave the flat deck shakeout system. After exiting the flat deck shakeout system, the sprue/castings enter the front section of the castings cooling conveyor system. This conveyer system is equipped with several draft hoods.

The first exhaust pickup hood is used as recycled air, which is sent to and reused by a cooling machine (heat exchanger) that has no external exhaust. The next exhaust hoods associated with the castings cooling operation are collected and routed to the MCS baghouse and RTO (SV-MCS).

All emissions associated with the equipment that are subject to the NESHAP VOC limitation (20 ppmv), which comprises the EU-MCS emission unit only, are collected and routed to the MCS baghouse and RTO (SV-MCS).

2.2.3 Sand Mold Making and Sand System (EU-SS)

The equipment associated with green sand mold production includes the molding machine and other related equipment. Emissions from the mold production process are captured and routed to the SS baghouse (SV-SS) for control of PM.

Emissions from the "cool end" of the sand return system are also routed to the SS baghouse. Return sand is collected from all areas of the shakeout system, including the sand separator, which separates the sand from the metal parts and sprue, and from the Didion. The "hot end" of the return sand system is exhausted to the MCS baghouse, whereas the "cool end" is routed to the SS baghouse. Once the sand is returned to the processing area, it is screened and reused.

The exhaust gases collected from the sand system equipment (i.e. "cool end" sand return conveyor belts, bucket elevators, rotary screen, sand cooler, and sand muller) are routed to the SS baghouse.

2.2.4 Castings Cooling and Finishing (EU-CCFBACK)

After going through the front section of the casting cooling conveyor system, the metal castings continue through additional cooling areas (EU-CCFBACK) of the conveyer system, and additional exhaust hoods continue to collect emissions from the castings (i.e. residual sand) as the castings progress towards the finishing operations. All the exhaust hoods associated with the casting cooling line and finishing operations that are downstream of the above mentioned exhaust hoods are collectively routed to the (SV-CCF2) baghouse. This includes the exhaust from the shot blast machine, which uses metallic shot to clean the castings (i.e. remove any residual sand and any surface defects/spurs).

2.3 Miscellaneous Processes

There are multiple processes in the plant that utilized for finishing the castings from both the George Fisher and DISA Foundries.

2.3.1 Grinders

A new process was installed in 2019. This includes two totally enclosed Reichmann grinders for automatic deburring of round parts including brake discs, clutch plates and other miscellaneous metal parts. The grinders are exhausted to a Waltz-Holtz Dustar 70,000 ACFM reverse air fabric filter collector. The dust collector is oversized for this process but will be used to address silica hot spots if needed in the future for in plant environment control.

2.3.2 – Paint Lines

Three GEOMET paint line systems each consisting of a mixing room, a paint spray booth equipped with HVLP applications and dry filter overspray control, and an induction cure process consisting of pre-curing and final cure steps for coating of metallic surfaces. Please note: At this time only two lines have been installed.

2.3.3 Cold Cleaners

Any cold cleaner that is grandfathered or exempt from Rule 201, pursuant to Rule 281(h) or Rule 285(r)(iv). Existing cold cleaners were placed into operation prior to July 1, 1979. New cold cleaners were placed into operation on or after July 1, 1979.

2.3.4 Rule 290 Sources

Any emission unit that emits air contaminants and is exempt from the requirements of Rule 201, pursuant to Rules 278 and 290. A sand conveyor is included in this list of sources at this time.

3.0 COMPLIANCE ASSURANCE MONITORING/ POLLUTION CONTROL EQUIPMENT DESCRIPTION

ACM believes that pollution control equipment for their emissions units will adequately remove pollution from the exhaust gases prior to discharge to the ambient air on a continuous basis. ACM has determined that sufficient monitoring of baghouse control equipment for controlling particulate is being performed to satisfy the requirement of the CAM regulations of 40 CFR Part 64 for emission units in the two foundries; EUSANDSYSTEM, EU-MCS, EU-CCFBACK, and EU-SS. The furnace emission units in both foundries EU-MP and EU-MPCC are subject to the Subpart EEEEE MACT standards for particulate. They are being monitored in a similar fashion as the emission units subject to CAM.

ACM has also installed an RTO for additional control of VOC emissions from EU-MCS in the DISA Foundry in order to meet the VOHAP limit of 20 parts per million by volume (ppmv) as specified in 40 CFR Part 63, Subpart EEEEE. The baghouse on EU-MCS is monitored under CAM, but the VOC emissions from the emission unit are monitored under MACT. No other emission units have enough uncontrolled VOC emissions to meet the criteria to be subject to CAM.

The required monitoring to document compliance is described below. This section outlines the pollutant limits and pollution control equipment added if necessary, for the existing foundry (George Fisher "GF"); and the new foundry (New Foundry "DISA") and miscellaneous sources; including background, applicable regulations, control technology, and monitoring approaches.

ACM's dust collectors are pulse-jet baghouses. The cleaning cycle (pulse jet) is initiated whenever the differential pressure is above a certain set point. The dislodged dust falls from the filter bag into the compartment's hopper where it drops into a portable container. The performance of the dust conveying system is critical to proper and efficient operation of the entire dust collector. High dust levels in the hoppers would allow dust re-entrainment from the hoppers back into the filter bags. This would result in premature filter bag failure and high-pressure drops. The function of the cleaning cycle is to control the pressure drop across the filter bags. In the automatic mode, differential pressure activates the cleaning cycle. When the differential pressure reaches a pre-set value, the cycle starts and continues until the compartment has been cleaned. If a high differential pressure still exists after all compartments have been cleaned, a second complete cleaning cycle is initiated. In addition to the automatic mode, a manual mode of cleaning can be used. The manual mode can be used for troubleshooting a compartment or cleaning a compartment that was not adequately cleaned in the automatic mode.

As discussed in this document, operating parameters have been selected to be monitored to ensure peak performance of the RTO and associated equipment for additional control of VOC emissions from EU-MCS in the DISA Foundry. Some of these parameter monitoring is covered in the O&M Section.

3.1 Existing Foundry (George Fischer “GF”)

Background

A fabric filter baghouse is utilized to control particulate and metal HAP emissions from EUMPCC and EUSANDSYSTEM. The design specifications for the baghouses on these emission units are provided in Table 3.1-1. The permit limits for all pollutants on these emission units are provided in Tables 3.1-2 through 3.1-5. These tables include the Potential to Emit for each pollutant as well as the most recent compliance stack test results and the determination if each emission unit is subject to CAM.

The monitoring approach for baghouses is described in Table 3.1-6. The particulate and metal HAPS are limited by NESHAPS from the furnaces in EUMPCC. Based on this limit and the required monitoring to determine compliance, it is believed this emission unit is not subject to CAM. The particulate from the furnaces is also regulated by the state for both emission units. The EUSandsystem would be subject to CAM because it would be a major source if it were uncontrolled based on AP-42 emission factor of 6 pounds of PM10 uncontrolled per 48,000 tons metal (GF Foundry melt limit) per year.

Both emission units also have limits for carbon monoxide (CO) and volatile organic compounds (VOC) based on state regulations however there are no add on pollution control equipment for these pollutants. Neither of these emission units have the potential to emit over major source levels using 7872 hours per year (GF Foundry operational limit), uncontrolled so therefore are not subject to CAM

Both units are also subject to opacity limits from stacks under state regulations. The EUMPCC is limited to fugitive visible emission from the structure under federal regulations. The continued correct operation of the baghouses will allow the opacity to remain in compliance. The proper operation of the fan drawing the correct amount of air into the baghouses from the hoods over the equipment in these emission units will allow the plant to demonstrate compliance with the MACT requirement to have less than 20% visible emissions from the structure housing EUMPCC.

Regulations

MI-ROP-N5814-2015 – Current Active ROP

Control Technology

Particulate emissions from the furnaces and sand system are collected via hood, enclosure, and duct work prior to going into the fabric filter baghouses. The clean, filtered gases pass through the induced draft fan and are discharged through the exhaust stack. The baghouses and exhaust fan system also control opacity and visible emissions from the structure. There are no controls for CO or VOCS on these emission units.

Table 3.1-1 EUMPCC and SANDSYSTEM Particulate Control Baghouse Control - Design Specifications

Parameter	MPCC	SANDSYSTEM
MACT Limit	0.005 gr/dscf of PM or 2.1 pph of PM	NA
State Limit	0.005 gr/dscf or 2.1 pph of PM	0.005 gr/dscf or 2.8 pph of PM
Compliance Stack Test 5/2015	0.044 pph	0.138 pph
Design Volumetric Flow (acfm)	43,050	66,000
Contaminant	Particulate	Particulate
Cleaning Type	Pulse Jet	Pulse Jet
Design Temperature	100° F	100° F
Gas Temp. Range	Ambient to 150° F	Ambient to 150° F
Design Pressure (in. WG)	4" 5"	4" 5"
Minimum Pressure Drop	1.5"	1.5"
Maximum Pressure Drop	10"	10"
Number of Cells	2	2
Filter Bags per Cell	645	645
Filter Cloth Area per Compartment	10,131 ft^2	10,131 ft^2
Outlet Particulate Loading (gr/dscf)	0.005	0.005
Bag Leak Detection System	Yes	Yes
Pressure Drop Indicator	Yes	Yes
Fan Amperage Gauge	Yes	Yes
PTE – 7872 hrs * pph (stack test) with Control	0.17 TPY (with control)	0.54 TPY (with control) 210 TPY (without control)
Subject to CAM?	No	Yes
Subject to MACT Limit	Yes	No

Table 3.1-2 EUMPCC and SANDSYSTEM Carbon Monoxide Control No Air Pollution Control Equipment

Parameter	MPCC	SANDSYSTEM
MACT Limit	NA	NA
State Limit	57.5 pph CO	7.5 pph CO
Compliance Stack Test 5/2015	14.12 pph CO	4.64 pph CO
PTE – 7872 hours * pph (stack test)	55.58 TPY CO	12.67 TPY CO
Subject to CAM?	No	No

Table 3.1-3 EUMPCC and SANDSYSTEM Volatile Organic Compounds
No Air Pollution Control Equipment

Parameter	MPCC	SANDSYSTEM
MACT Limit	NA	NA
State Limit	10.0 pph VOC	6.0 pph VOC
Compliance Stack Test-5/2015	4.64 pph VOC	2.33 pph VOC
PTE – 7872 hours * pph (stack test)	18.26 TPY VOC	9.17 TPY VOC
Subject to CAM?	No	No
Subject to MACT?	No	No

Table 3.1-4 EUMPCC and SANDSYSTEM Opacity - (Baghouse control)

Parameter	MPCC	SANDSYSTEM
MACT Limit	NA	NA
State Limit	10%	5%
Compliance Stack Test-5/2015	Passed Method 9	Passed Method 9
PTE – 7872 hours * pph (stack test)	NA	NA
Subject to CAM?	Adequate control of PM will control opacity	Adequate control of PM will control opacity
Subject to MACT?	No	No

Table 3.1-5 EUMPCC and SANDSYSTEM Visible Emissions /Structure - (Baghouse Fan)

Parameter	MPCC	SANDSYSTEM
MACT Limit	20% opacity (except for one 6-minute average per hour of not more than 27% opacity)	NA
State Limit	See Opacity	See Opacity
Compliance Stack Test-5/2015	Passed Method 9	Passed Method 9
PTE – 8760 hrs * pph	NA	NA
Subject to CAM?	Adequate control of exhaust fan will control fugitive emissions from structure	Adequate control of exhaust fan will control fugitive emissions from structure
Subject to MACT?	Yes	No

Table 3.1-6 Monitoring Approach for PM - EUMPCC & SANDSYSTEM

A. Indicators	
	a. BAG LEAK DETECTOR in stack/ Triboelectric System with monitor and alarm b. Photohelic Gauges c. Fan Amperage Gauges
	Visible Emission Stack Inspection is performed during daylight hours and documented
B. Indicator Range	
	Normal operating range is 10pA to 60pA for the bag leak detector. The alarm will trigger outside the normal operating ranges. Range set by particle detector vendor. Photohelic set point ranges are 1.5" to 10" based on baghouse vendor settings Normal range is between 2" and 5" set by maintenance department. Staff required to notify EHS staff if >8" Note: Photohelic gauges serve as indicators of bag condition and lifespan and potential blinding or plugging. Fan amperage range based on proper fan operation (range 140-200 amps) and exhaust system design.
C. Performance Criteria	
i. Data Representative ii. Verification of Operational Status iii. QA/QC Practices iv. Monitoring Frequency v. Data Collection Procedures	a. The data is collected at the emission point. The probe is located inside the baghouse exhaust duct. The Triboelectric signal is shown on the data screen and recorded. The bag leak detection system equipment is inspected each shift and documented on a PM check sheet. b. The bag leak detection system (BLDS) includes an inspection against the Fan Motor Amperage and Damper Position Visual-Alarm. c. An alarm function test will be performed and recorded on the daily PM inspection Sheet. d. The Triboelectric probe will be inspected every 3 months in accordance with section 4.3.4 e. The Triboelectric signal is continuously displayed for monitoring f. EHS will be notified immediately when an alarm occurs for investigation and or repair. The BLDS equipment is inspected and PM is conducted each month and documented. The BLDS inspection reports are reviewed by the EHS Engineer. g. I. The reason for alarm will be recorded on the daily PM inspection sheet. II. A start and end time of the alarm will be recorded against the purpose of the alarm

	III. A visible emission inspection will be performed and recorded if outside conditions allow.

3.2 New Foundry (DISA)

Background

Four (4) baghouses utilized to control particulate emissions from the DISA foundry equipment emission units, EU-MP, EU-MCS, EU-SS and EU-CCFBACK. Each of the four 4 dust collectors is a continuous automatic, suction type baghouse manufactured by US Air Filtration, Inc. ACM also operates an RTO for further control of VOHAP emissions from EU-MCS.

The design specifications for the baghouses on these emission units are provided in Table 3.2-1. The permit limits based on state regulations or MACT for all pollutants for these emission units are provided in Tables 3.2-2 through 3.2-5. These tables include the Potential to Emit for each pollutant as well as the most recent compliance stack test results and the determination if each emission unit is subject to CAM or MACT.

The monitoring approach for baghouses is described in Table 3.2-5. The particulate and metal HAPS are limited by NESHAPS from the furnaces in EU-MP. Based on this limit and the required monitoring to determine compliance, it is believed this emission unit is not subject to CAM. The particulate from the furnaces is also regulated by the state. The other three emission units are subject to CAM because they would be a major sources for PM if they were operated without control based on removal of control equipment with an estimated overall capture and control of 99% for particulate.

The emission units EU-MP and EU-MCS both have limits for carbon monoxide (CO) and volatile organic compounds (VOC) and EU-SS has VOC limits along with particulate based on state regulations. EU-MCS has MACT limits and controls for VOC. There are no add on pollution control equipment for CO on any emission units. Neither of these emission units have the potential to emit over major source levels of CO, uncontrolled so therefore are not subject to CAM.

All emission units are subject to opacity limits as a flexible group from the structures housing the DISA foundry as per MACT regulations. The proper operation of the fans and exhaust systems drawing the correct amount of air into the baghouses from the hoods over the equipment in these emission units will allow the plant to demonstrate compliance with the MACT requirement to have less than 20% visible emissions from the buildings or structures.

Regulations

MI-ROP-N5814-2015 – Current Active ROP

Emission Limits:	PM-10	27.0 tpy	12 month rolling time period
Material Limit:	Metal	115,500 tpy	12 month rolling time period

Control Technology - Baghouses

The design specifications for each baghouse and values for PM are provided in Table 3.2-1. One main induced draft (ID) fan provides the suction for moving the fume and dust-laden gases through each of the four control systems. Each fan is of the backward incline design. The Monitoring Approach for each baghouse is described in Table 3.2-6.

Table 3.2-1 EUMP, EUMCS, EUSS and EUCCFBACK Particulate Control Baghouse Design Specifications

Parameter	EU-MP Baghouse	EU-MCS Baghouse	EU-SS Baghouse	EU-CCFBACK Baghouse
MACT Limit	0.001 gr PM/dscf	**NA**	**NA**	**NA**
State Limit	PM10 – 0.30 pph	PM10 2.47 pph	PM10 2.30 pph	PM10 2.64 pph
Compliance Stack Tests 5/2015	PM10 – 0.117 pph	PM10 – 0.671 pph	PM10 - 0.283 pph	PM10 – 0.419 pph
Design Flow (ACFM)	37,500	61,200	56,900	65,360
Contaminant	Fume & Dust	Fume	Sand	Dust
Cleaning Type	Pulse Jet	Pulse Jet	Pulse Jet	Pulse Jet
Design Temp (°F)	200	100	100	100
Gas Temp Range	Ambient to 250 °F	Ambient to 150 °F	Ambient to 150 °F	Ambient to 150 °F
Design Pressure (in. WG)	4” to 5”	4” to 5”	4” to 5”	4” to 5”
Max Pressure Drop Across Baghouse (in. WG)	10	10	10	10
Min Pressure Drop Across Baghouse (in. WG)	1.5	1.5	1.5	1.5
Fan Amperage Range	130 – 170	125 – 165	120-145	135-165
Number of Cells	1	1	1	1
Filter Bags per Cell	645	645	645	645
Filter Cloth Area per Cell	10,131 ft^2	10,131 ft^2	10,131 ft^2	10,131 ft^2
Outlet Particulate Loading (gr/dscf)	0.001	0.005	0.005	0.005
Bag Leak Detection?	Yes	Yes	Yes	Yes
PTE – 8760 hours * pph (stack test)	0.51 TPY Controlled	293.9 TPY Uncontrolled*	123.9 TPY Uncontrolled*	183.52 TPY Uncontrolled*
Subject to CAM?	No	Yes	Yes	Yes
Subject to MACT?	Yes	No	No	No

* = Uncontrolled value = stack test value /0.01 (for 99 % capture/control)

Table 3.2-2 EUMP, EUMCS, EUSS and EUCCFBACK Carbon Monoxide Control No Air Pollution Control Equipment

Parameter	EU-MP Baghouse	EU-MCS Baghouse	EU-SS Baghouse	EU-CCFBACK Baghouse
MACT Limit	NA	NA	NA	NA
State Limit	CO 44.55 pph	CO 62.70 pph	NA	NA
Compliance Stack Tests 5/2015	CO 6.97 pph	CO 23.05 pph	NA	NA
PTE – 8760 hours * pph (stack test)	CO 30.5 TPY	CO 101 TPY	NA	NA
Subject to CAM?	No	No * Portion of CO from RTO	NA	NA
Subject to MACT?	No	No	NA	NA

Control Technology – Regenerative Thermal Oxidizer

ACM installed an RTO in order to meet the VOHAP limit of 20 ppmv from EU-MCS. The RTO is a TRITON-55.95 manufactured by Catalytic Products International (CPI).

Exhaust from EU-MCS is drawn into the RTO by a system booster fan and is directed into one (1) of two (2) regenerator columns where the exhaust stream is heated to 1,300 ^{o}F or more. The heated exhaust stream then exits the regenerator column and flows into the combustion chamber where oxidation of volatile organic compounds (VOCs) takes place. Oxidation of VOCs in the exhaust stream converts VOCs into carbon dioxide (CO_2) and water vapor. The Even –Flo manifolds to the RTO have a small volume, and this is very important to ensure a high VOC destruction rate efficiency (DRE). The combusted VOCs are then routed to the other regenerator column for supplemental heating purposes.

The design of the RTO allows for continuous VOC destruction and fully automatic operation. It provides for very low burner heating demands and static pressures. The regenerator temperature profiles are continually analyzed, and valve timing is frequently adjusted to maximize the system's thermal rate efficiency. The RTO is also designed to have high operating reliability, therefore requiring nominal maintenance. The RTO is also equipped with a continuous emission monitoring system that monitors and records the VOC ppm emissions.

The equipment specifications for the RTO installed on EU-MCS are presented in Table 3.2-3 below.

Table 3.2-3. RTO Equipment Specifications [1]

Parameter	Design Value
Total Process Volume (scfm)	55,000
Normal Operating Temperature (ºF)	1,300 - 1,600 (Design Value)
Maximum Operating Temperature (ºF)	2,000 (Design Value)
Maximum VOHAP Concentration	20 ppm
Fuel Type	Natural Gas 1,000 BTU/cubic foot
Maximum Fuel Supply	9,000 cfh @ 5-10 psig

Table 3.2-4 EUMP, EUMCS, EUSS and EUCCFBACK Volatile Organic Compound Control
No VOC Air Pollution Control Equipment for EU-MP, EU-SS and EU-CCFBBACK
RTO control for VOCs on EU-MCS

Parameter	EU-MP Baghouse	EU-MCS Baghouse	EU-SS Baghouse	EU-CCFBACK Baghouse
MACT Limit	NA	VOHAPS 20 ppmv	NA	NA
State Limit	VOC 5.28 pph	VOC 15.49 pph	NA	NA
Compliance Stack Tests 5/2015	VOC 1.38 pph	VOC 7.4 ppm 2.51 pph	NA	NA
PTE – 8760 hours * pph (stack test)	VOC 6.04 TPY	VOC 10.99 TPY (controlled)	NA	NA
Subject to CAM?	No	No	NA	NA
Subject to MACT?	No	Yes	NA	NA

Table 3.2-5 EUMP, EU-MCS, EU-SS AND EUCCFBACK Visible Emissions /Structure - (Baghouse Fan)

Parameter	EU-MP Baghouse	EU-MCS Baghouse	EU-SS Baghouse	EU-CCFBACK Baghouse
MACT Limit	< 20% - Structures	< 20% - Structures	< 20% - Structures	< 20% - Structures
State Limit	NA	**NA**	NA	NA

Compliance Stack Tests 5/2015	NA	NA	NA	NA
PTE – 8760 hours * pph (stack test)	NA	NA	NA	NA
Subject to CAM?	No	No	No	No
Subject to MACT?	Yes	Yes	Yes	Yes

Table 3.2-6 PM Monitoring Approach EU-MP for MACT and EU-MCS, EU-SS and EU-CCFBACK

A. Indicators	
	d. BAG LEAK DETECTOR in stack/ Triboelectric System with monitor and alarm e. Photohelic Gauges f. Fan Amperage Gauges
	Visible Emission Structure Inspection is performed during daylight hours and documented
B. Indicator Range	
	Normal operating range is 10pA to 60pA for the bag leak detector. The alarm will trigger outside the normal operating ranges. Range set by particle detector vendor. Photohelic set point ranges are 1.5" to 10" based on baghouse vendor settings Normal range is between 4" and 5" set by maintenance department. Staff required to notify EHS staff if >8" Note: Photohelic gauges serve as indicators of bag condition and lifespan and potential blinding or plugging. Fan amperage range based on proper fan operation (range 140-200 amps) and exhaust system design.
C. Performance Criteria	
vi. Data Representative vii. Verification of Operational Status viii. QA/QC Practices	h. The data is collected at the emission point. The probe is located inside the baghouse exhaust duct. The Triboelectric signal is shown on the data screen and recorded. The bag leak detection system equipment is inspected each shift and documented on a PM check sheet. i. The bag leak detection system (BLDS) includes an inspection against the Fan Motor Amperage and Damper Position Visual-Alarm. j. An alarm function test will be performed and recorded on the daily PM inspection Sheet.

ix. Monitoring Frequency x. Data Collection Procedures	k. The Triboelectric probe will be inspected every 3 months in accordance with section 4.3.4 l. The Triboelectric signal is continuously displayed for monitoring m. EHS will be notified immediately when an alarm occurs for investigation and or repair. The BLDS equipment is inspected and PM is conducted each month and documented. The BLDS inspection reports are reviewed by the EHS Engineer. n. IV. The reason for alarm will be recorded on the daily PM inspection sheet. V. A start and end time of the alarm will be recorded against the purpose of the alarm VI. A visible emission inspection will be performed and recorded if outside conditions allow.

Control Technology – Regenerative Thermal Oxidizer

ACM installed an RTO in order to meet the VOHAP limit of 20 ppmv from EU-MCS. The RTO is a TRITON-55.95 manufactured by Catalytic Products International (CPI).

Exhaust from EU-MCS is drawn into the RTO by a system booster fan and is directed into one (1) of two (2) regenerator columns where the exhaust stream is heated to 1,300 ^{o}F or more. The heated exhaust stream then exits the regenerator column and flows into the combustion chamber where oxidation of volatile organic compounds (VOCs) takes place. Oxidation of VOCs in the exhaust stream converts VOCs into carbon dioxide (CO_2) and water vapor. The Even –Flo manifolds to the RTO have a small volume, and this is very important to ensure a high VOC destruction rate efficiency (DRE). The combusted VOCs are then routed to the other regenerator column for supplemental heating purposes.

The design of the RTO allows for continuous VOC destruction and fully automatic operation. It provides for very low burner heating demands and static pressures. The regenerator temperature profiles are continually analyzed, and valve timing is frequently adjusted to maximize the system's thermal rate efficiency. The RTO is also designed to have high operating reliability, therefore requiring nominal maintenance.

The equipment specifications for the RTO are presented in Table 3.2-7 below.

Table 3.2-7 RTO Equipment Specifications [1]

Parameter	Design Value
Total Process Volume (scfm)	55,000

Parameter	Design Value
Normal Operating Temperature (ºF)	1,300 - 1,600 (Design Value)
Maximum Operating Temperature (ºF)	2,000 (Design Value)
Maximum VOHAP Concentration	20 ppm
Fuel Type	Natural Gas 1,000 BTU/cubic foot
Maximum Fuel Supply	9,000 cfh @ 5-10 psig

[1] See Section 4.6 for specific operating values determined from stack testing.

The vendors of the CEMS unit perform three compliance gas audits (CGA) a year (on a quarterly basis). Once a year , a Relative Accuracy Test Audit (RATA) is performed in the fourth quarter.

Table 3.2-6 VOC Monitoring Approach EU-MCS for MACT

A. Indicators	
	Environment SA GR52M Hydrocarbon Monitor
B. Indicator Range	
	THC Analyzer - Range: 0-50 ppm
C. Performance Criteria	
xi. Data Representative	The hydrocarbon data is collected at the emission point. EHS will be notified immediately when an alarm occurs for investigation and or repair. The CGA and RATA Reports are reviewed by the EHS Engineer and submitted to the EGLE AQD within 30 days following the end of the quarter.
xii. Verification of Operational Status	A start and end time of the alarm will be recorded against the purpose of the alarm. The reason for alarm will be recorded in the data logger and also on the daily PM inspection sheet. The information will be compiled for the Excess Emission Report.
xiii. QA/QC Practices	The vendors of the CEMS unit perform three cylinder gas audits (CGA) per year (one per quarter) and annual Relative Accuracy Test Audit (RATA) is performed in the fourth quarter. These are conducted in accordance with 40 CFR Part 60 Appendix F guidelines. ACM staff evaluate automatic calibration. If reading (error %) reads > +/- 5%,a manual calibration should be performed
xiv. Monitoring	Continuous THC monitoring performed by monitor. Daily calibrations

	Frequency	performed by staff along with evaluation of gas cylinder status.
xv.	Data Collection Procedures	Daily PM sheet for CEM & RTO Continuous data logger for THC monitor

3.3 Miscellaneous Sources

PROCESS DESCRIPTION

FGGrinders - Automatic Grinders

Two Reichmann enclosed automatic grinders for deburring of round parts including brake discs, clutch plates and other miscellaneous metal parts have been added as part of the finishing system. The grinders are exhausted to a Waltz-Holtz Dustar 70,000 ACFM reverse air fabric filter collector. The fabric filter collector will also be used for future in plant environment control.

EUConveyors –

This is a casting cooling vibratory conveyor section that is covered and ventilated to a 28,000 dscfm baghouse

EUShotblast

A shotblast machine with a mechanical pre-cleaner followed by a 7,500 scfm baghouse that vents outside. This unit has a particulate limit

FGPaintLine

These are water-based paint lines subject to Subpart MMMM. The paint lines comply with Subpart MMMM by using compliant materials in the process and state limits process to 10 tons VOC per year.

Table 3.2-1 EUMP, EUMCS, EUSS and EUCCFBACK Particulate Control Baghouse Design Specifications

Parameter	FG-Grinders Baghouse	EU-Conveyor Baghouse	EU-Shotblast	FG-Paint Line- Dry Filter
MACT Limit	**NA**	**NA**	**NA**	**NA**

State Limit	PM10 – 0.30 pph	Rule 290 1000 lbs uncontrolled 500 lbs controlled	0.001 lbs PM/1000 lbs of exhaust gas	**NA**
Compliance Stack Tests 5/2015	NA	NA	NA	NA
Design Flow (ACFM)	70, 000	28,000	7,500	
Contaminant	Fume & Dust	Fume	Sand	
Cleaning Type	Pulse Jet	Pulse Jet	Pulse Jet	
Design Temp (°F)	100	100	100	
Gas Temp Range	Ambient to 150 °F	Ambient to 150 °F	Ambient to 150 °F	Ambient to 150 °F
Design Pressure (in. WG)	2” to 5”	2” to 5”	2” to 5”	
Max Pressure Drop Across Baghouse (in. WG)	10	10	10	
Min Pressure Drop Across Baghouse (in. WG)	1.5	1.5	1.5	
Fan Amperage Range	NA	NA	NA	
Number of Cells	1	1	1	
Bag Leak Detection?	Yes	Yes	Yes	
PTE	89.9 TPY Uncontrolled	6 TPY Uncontrolled	89.9 TPY Uncontrolled*	14.93 Uncontrolled
Subject to CAM?	No	No	No	No
Subject to MACT?	No	No	No	No

4.0 OPERATION AND MAINTENANCE

The air pollution control systems will be operated and maintained at all times in a manner consistent with good air pollution control practices for minimizing emissions. Each piece of the capture and collection system (hoods, dampers, ductwork, etc) and control device (baghouse, RTO) will be operated according to this written O&M plan, as required by 40 CFR 63.7710(b), at all times.

According to the requirements of 40 CFR 63.7710(b), this O&M plan addresses the following elements found in Table 4- 1.

Table 4-1. Operation and Maintenance Requirements

Description	Section
Monthly inspections of the capture systems	Section 4.1
Preventative maintenance plan for the baghouses and RTO	Section 4.2
Site-specific monitoring plan for the bag leak detection systems	Section 4.3
Mold vent ignition procedures or determination	Section 4.4
Operating limits that are appropriate and reliable indicators of performance for the capture system for VOHAPS (note, this applies to the MCS capture system only)	Section 4.5
Monitoring Plan for the RTO	Section 4.6
Corrective action plan for each baghouse	Section 6.2

4.1 Monthly Equipment Inspections of the Capture System

ACM will perform equipment inspections of the capture systems as follows:

1. Monthly inspections of equipment used to ensure proper performance (i.e., pressure sensors, dampers, damper switches).
2. Monthly inspections of the physical appearance of the equipment related to the capture systems. Any defects found during an inspection will be repaired as soon as practicable.

4.2 Preventative Maintenance

Preventative maintenance plans for the baghouses and RTO are discussed in the following subsections.

4.2.1 Baghouses

The baghouses will operate according to a preventative maintenance plan. This plan includes a preventative maintenance schedule that is consistent with the manufacturer's instructions for routine and long-term maintenance and operability. In addition to the manufacturer's instructions, ACM will perform the following maintenance activities according to 40 CFR 63.7740(c) (specifically for each baghouse that is applied to meet a PM or total metal HAP limit in 40 CFR Part 63, Subpart EEEEE):

1. Monitor the pressure drop across each baghouse cell each day to ensure pressure drop is within the normal operating range identified in the manual.
2. Confirm that dust is being removed from hoppers through weekly visual inspections or other means of ensuring the proper functioning of removal mechanisms.
3. Check the compressed air supply for pulse-jet baghouses each day.
4. Monitor cleaning cycles to ensure proper operation using an appropriate methodology.
5. Check bag cleaning mechanisms for proper functioning through monthly visual inspections or equivalent means.
6. Make monthly visual checks of bag tension to ensure that bags are not kinked (kneed or bent) or lying on their sides.
7. Confirm the physical integrity of the baghouse through quarterly visual inspections of the baghouse interior for air leaks.
8. Inspect fans for wear, material buildup, and corrosion through quarterly visual inspections, vibration detectors, or equivalent means.

4.2.2 Regenerative Thermal Oxidizer

The RTO will operate according to a preventative maintenance plan. Maintenance requirements for the RTO are described in detail in the operator manuals supplied with the RTO. The RTO will require minimal maintenance due to its designed high uptime reliability. The maintenance requirements for the RTO, as described in the operator manuals, are linkage tightening, bearing lubrication and normal fan maintenance. These parameters will be checked in accordance with the preventative maintenance plan.

ACM will also implement a daily checklist of items specific to proper RTO operation. This includes verifying the combustion chamber temperature and the differential pressure to the RTO. The checklist is contained in Appendix A.

4.3 Bag Leak Detection System Monitoring Plan

ACM shall operate and maintain the bag leak detection system (BLDS) according to this site-specific monitoring plan at all times (40 CFR 63.7710(b)(4)). ACM uses a bag leak detection system (BLDS) based on the Triboelectric effect. The BLDS sensor is powered by a Programmable Logic Controller (PLC), is installed in the exhaust stack, and produces a continuous analog output signal. The output data will be recorded and stored electronically.

The BLDS will be operated and maintained according to the manufacturer's recommended procedures and EPA-454/R-98-015: EPA Fabric Filter Bag Leak Detector Guidance. This includes performing the following routine maintenance activities (items 2 and 3 pertain to triboelectric monitors only):

1. Perform a BLDS response test on a monthly basis.
2. Perform an electronics drift check on a monthly basis.
3. Perform an annual setup if the monitor’s settings have not been adjusted within a year’s time.

In the event that an alarm is triggered, corrective action must be initiated within 1 hour of the alarm to determine cause of the alarm and initiate corrective action to resolve the problem within 24 hours of the alarm. The corrective action must be completed as soon as practicable. Corrective actions are listed in Section 6.2. A spare parts inventory list will be kept on file.

4.3.1 Installation of Bag Leak Detection System

The sensor is mounted in the exhaust stack more than two diameters downstream of any flow disturbance. This installation complies with guidelines in EPA-454/R-98-015 to avoid locations susceptible to dust buildup, vibration, and high voltage or current sources.

4.3.2 Initial and Periodic Adjustments

The sensor is supplied with a logarithmic output mode providing the 4-20 mA signal. The sensor output mode is adjusted to achieve appropriate sensitivity that best captures the range of outputs from normal cycles, cleaning cycles, and alarm levels.

Part of initial set up includes functional test using a small sample of dust. This dust is introduced into the stack using a port upstream of the sensor. The output alarm setting is adjusted and confirmed to reliably trigger an alarm signal using this test method.

4.3.3 Operation of Bag Leak Detection System

Operation of the leak detection system does not require any special actions. This system is wired to be powered whenever the MP baghouse fan motor is on.

4.3.4 Routine maintenance of Bag Leak Detection System

Routine maintenance includes visual inspection of the sensor probe to look for water leakage (rain) and potential dust build-up on the leading edge of probe. Inspection is performed every 6 months. Inspections will be performed after any alarm condition, including bag breakage or other malfunction.

4.3.5 Bag Leak Detection System Recordkeeping

The data from the Triboelectric sensor is recorded on the daily PM inspects sheets.

4.5 Operating Limit Parameters for the MCS Capture System

Fan motor amperage will be monitored to indicate the level of ventilation draft. This parameter has been selected because it can be continuously monitored and because it represents the performance of the capture system, given the manual damper settings. The amperage is a parametric value for exhaust flow, which will indicate performance of the capture system for a set damper position. The fan amperage will be monitored by an ammeter and recorded. The damper positions serving the VOHAP capture system will be manually set and are not expected to change seasonally. Damper settings will be fixed after startup, system balancing, and compliance testing. They will be inspected monthly to ensure that the fixed settings have been maintained.

Exhaust flow will also be monitored from the baghouse to the RTO to ensure it is being captured efficiently and routed to the RTO. This is achieved through a magnahelic which records the inlet and outlet differential pressure.

4.5.1 Continuous Monitoring System (CMS)

ACM will operate and maintain a Continuous Parameter Monitoring System (CPMS) for the MCS capture system to meet the requirements of §63.7740(a). The parameter that is monitored is the fan motor amperage (indicating the level of ventilation draft). Dampers that are manually set and remain in the same position are exempt from the requirement to install and operate a CPMS according to §63.7740(a)(2). The results of each inspection, calibration, and validation check will be recorded according to §63.7741(a)(3).

ACM will also operate and maintain a Continuous Emissions Monitoring System (CEMS) to measure and record the concentration of VOC emissions from EU-MCS. The CEMS and CPMS (as well as the BLDS from Section 4.3) are subject to the CMS requirements of 40 CFR 63, Subpart A.

4.5.2 Operation and Maintenance of Each CMS

1. Each CMS will be operated and maintained at all times, including periods of startup, shutdown, and malfunction, as specified in this section and in a manner consistent with good air pollution control practices for minimizing emissions. (63.8(c)(l))
2. Parts necessary for routine repairs of the CMS will be kept readily available. This list will be maintained on-site. (63.8(c)(l)(ii))
3. A written startup, shutdown, and malfunction plan as required §63.8(c)(l)(iii) has been included in Section 6.0.
4. Each CMS will be installed and operated consistent with §63.8(c)(3). The CEMS for the RTO will be operated and maintained according to Performance Specification 8 in 40 CFR Part 60, Appendix B.
5. When the CMS is out of control, ACM will take the necessary corrective action and will repeat all necessary tests which indicate that the system is out of control. ACM will take corrective action and conduct retesting until the performance requirements are within the applicable limits. The beginning of the out-of-control period is the hour the performance check is conducted (e.g., calibration drift) that indicates an exceedance of the established performance requirements. The end of the out-of-control period is the hour following the completion of corrective action and successful demonstration that the system is within the allowable limits. During the period the CMS is out of control, recorded data will not be used in data averages and calculations, or to meet any data availability requirement established under this part. (63.8(c)(7))
    a. The CEMS is considered out of control if:
        i. The zero (low-level), mid-level (if applicable), or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard; or
        ii. The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy audit, relative accuracy test audit, or linearity test audit.
    b. The CPMS (for fan amperage) is considered out of control if the amperage is outside of the range specified in Table 3-2.

c. The BLDS is considered out of control when readings indicate a problem that cannot be validated via inspection, or vice versa, or when no data is available.

6. If a CMS is out of control as defined above, ACM will submit all information concerning out-of-control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emissions and continuous monitoring system performance report required in $63.10(e)(3). (63.8(c)(8))

Each applicable CMS will be operated according to this site specific monitoring plan which requires continuous operation, completing a minimum of one cycle of operation for each successive 15-minute period and collecting a minimum of three of the required four data points to constitute a valid hour of data as well as providing valid hourly data for 100 percent of every averaging period. Each CMS will determine and record the hourly average of all recorded readings and the 3-hour average of all recorded readings.

ACM will also implement a daily checklist of items specific to proper CEMS operation. This includes verifying the gas pressure, calibration drift and trends. The checklist is contained in Appendix A.

4.6 Regenerative Thermal Oxidizer Monitoring Plan

ACM is required to have a monitoring plan for the RTO. In accordance with 40 CFR §63.7690(c) the plan must contain following:

1. Control device description: Refer to Sections 3.2.2 for a detailed description of the RTO.
2. Performance test results from EU-MCS:
   a. VOHAP emissions = 5.11 ppmv -2013, 7.4 ppmv - 2015
3. This document serves as an O&M Plan for the RTO. Refer to Section 4.2.
4. Operating parameters will be monitored on a continuous basis to verify the RTO is operating properly and that VOHAP emissions from EU-MCS are in compliance with the 20 ppmv limit. The RTO's is equipped with a control and monitoring system called the Temperature Safety System (TSS). This system allows for fully automatic operation of the RTO, provides self – diagnostics, and ultimately protects the oxidizer. The TSS will verify the following operating parameters and associated limits (these limits have been verified by stack testing performed on September 5, 2013 and April 28, 2015):
   a. The RTO combustion chamber temperature will operate between 1,300 ^{o}F – 1,600 ^{o}F.
   b. The exhaust stream will be in the combustion chamber for approximately 0.5 seconds to ensure VOC destruction.
   c. Posi-Seal Valves in the RTO must be positioned correctly at all times for precise VOC destruction and thermal exchange effectiveness.

A control operator will monitor the TSS at all times the RTO is in operation.

5.0 WORK PRACTICE STANDARDS

5.1 Scrap Certification Program

ACM purchases and uses only* metal ingots, pig iron, slitter, or other materials that *do not* include post-consumer automotive body scrap, post-consumer engine blocks, post-consumer oil filters, oily turnings, lead components, mercury switches, plastics or free organic liquids.

5.2 Scrap Selection & Inspection Program

*If ACM must purchase and use any of the scrap materials prohibited in the Scrap Certification Program, it must follow a Scrap Selection & Inspection Program for that scrap material. This program requires that the foundry develop and operate at all times under a *written* plan to minimize, to the extent practicable, the amount of organics and HAP metals in the charge materials. It *requires all of the following*:

1. For induction furnaces: specifications provided to suppliers that require depletion (to the extent practicable) of the presence of oil filters, plastic parts, organic liquids, and a program to ensure the scrap materials are drained of free liquids.
2. A materials acquisition program specifying that the scrap supplier remove accessible mercury switches from the trunks and hoods of any automotive bodies contained in the scrap and remove accessible lead components such as batteries and wheel weights. You must obtain and maintain onsite a copy of the procedures used by the scrap supplier for either removing accessible mercury switches or for purchasing automobile bodies that have had mercury switches removed, as applicable.
3. Procedures for visual inspection of a representative portion, but not less than 10 percent, of all incoming scrap shipments to ensure the materials meet the specifications. The inspection procedures must:
    a. Identify the location(s) where inspections are to be performed for each type of shipment. The selected location(s) must provide a reasonable vantage point, considering worker safety, for visual inspection.
    b. Include recordkeeping requirements that document each visual inspection and the results.
    c. Include provisions for rejecting or returning entire or partial scrap shipments that do not meet specifications and limiting purchases from vendors whose shipments fail to meet specifications for more than three inspections in one calendar year.
    d. Load rejection criteria that include visible: mercury switches, lead acid batteries, lead wheel weights, plastic components (not removed to the extent practicable), free liquids (not drained to the extent practicable), lead pipes. Issues with non-compliant loads and vendors are handled by the department handling materials acquisition.

This Scrap Selection and Inspection Plan must be kept onsite and be readily available to all plant personnel with materials acquisition or inspection duties.

5.3 Mold Vent Ignition Assurance (63.7710(b)(6))

Mold vents in both foundries ignite automatically, meaning they ignite more than 75 percent of the time without an auxiliary ignition source and the flame is present for at least 15 seconds. Records of this determination must be maintained.

6.0 STARTUP, SHUTDOWN, AND MALFUNCTION PROVISIONS

6.1 Definitions:

Excess Emission: for the purposes of this plan, an Excess Emission is an abnormal condition, start-up, shutdown, or a malfunction that results in emissions in excess of any applicable standard or limitation (MACT or permit limit).

Abnormal: for the purposes of this plan, Abnormal refers to an **unusual** operating condition (such as a malfunction) that could result in a discharge of emissions greater than is allowable under a rule or permit.

Normal: for the purposes of this plan, Normal refers to conditions that usually occur during the start-up or shutdown of subject process or pollution control equipment and that are consistent with safety and good air pollution control practices for minimizing emissions.

The SSM Planning requirements are subjective in that documentation and response is only required when Excess Emissions occur, and Excess Emissions are not be easily recognized. A process or pollution control device will be presumed to comply with all applicable emission standards and limitations during start-up and shutdown if operated normally.

6.2 Malfunction Response:

A record must be kept for every Abnormal event, including:

1. the time of the event,
2. the equipment involved,
3. a full description of the condition,
4. a full description of the corrective action,
5. actions taken to minimize emissions during malfunction,
6. the duration of the event, and
7. a determination of whether or not this plan was followed. This may be in the form of a work order or checklist.

CONTACT ENVIRONMENTAL ENGINEERING IMMEDIATELY UPON DISCOVERY OF ANY MALFUNCTION OR ABNORMAL CONDITION, START-UP, OR SHUTDOWN.

If there is excessive visual opacity from the stack of the collector or if the operating parameters are repeatedly out of range, Maintenance will:

a. Determine the extent of the damage and direct repairs and inspections of the malfunctioning unit and estimate the level of time and effort required to repair the unit.
b. If the equipment cannot be repaired during normal operation, the affected process equipment will be shut down until the repairs can be made.
c. Maintenance is responsible for documenting the repairs and that the recordkeeping and reporting requirements are met.

Specific corrective actions for malfunctions are based on Maintenance determination and are made as soon as practicable after their occurrence.

The malfunctions covered must include malfunctioning process equipment, air pollution control systems, and monitoring systems.

6.3 Start-up and Shutdown Procedures:

6.3.1 Procedure for Start-up:

1. Start the pollution control equipment prior to beginning production
2. Ensure all appropriate* operation parameters are within specified ranges, such as:
    a. Differential pressure
    b. Blower motor amperage
    c. RTO combustion chamber temperature
3. Begin production and ensure parameters remain with specified ranges
4. Immediately notify maintenance of any abnormal conditions

6.3.2 Procedure for Shut-down:

1. Wait until production has ceased
2. Shut down pollution control equipment

6.4 Reportable Malfunction Determination:

If a system malfunction occurs that is NOT on the following list, or a period of excess emissions occurs, records must be kept that an abnormal condition occurred, the duration of the abnormal condition, and confirmation that the Plan was followed. This will likely be in the form of a work order issued through Maintenance.

Specific corrective actions for malfunctions are based on Maintenance determination and are made as soon as practicable after their occurrence.

The malfunctions covered must include malfunctioning process equipment, air pollution control systems, and monitoring/CPMS systems.

Some possible operating problems for the collectors include:

1. The bags get too full
2. Garbage, like paper, is collected by the equipment and plugs the screen
3. Booster does not get started
4. Air lock plugging or failure
5. Pulsars stick

6.5 Corrective Actions

Corrective actions may include, but are not limited to:

1. Inspecting baghouse for leaks, torn or broken bags or filter media, or any condition that may cause excess emissions.
2. Sealing off defective bags or filter media.
3. Replacing defective bags or filter media or otherwise repairing the control device.
4. Sealing off a defective baghouse compartment.
5. Cleaning the bag leak detection system probe or otherwise repairing the bag leak detection system.
6. Implementing process changes.
7. Shutting down the process producing the particulate emissions.

If a malfunction occurs that is not on this list, the problem will be logged and reported to the Agency as an Immediate SSM Report (see reporting requirements).

The list of possible abnormal conditions may be revised periodically without prior approval of the Agency. All versions of the plans must be kept electronically on site indefinitely. Each revision must be reported in the Semiannual Compliance Report. If the Plan fails to address a failure, it must be revised within 45 days after the event to correct the deficiency. A written notice must be provided to the Agency if the revision "alters the scope or the activities at the source which are deemed to be startups, shutdowns, or malfunctions".

6.6 Malfunction Reporting:

The following table summarizes the reporting requirements for ACM.

Table 6-1. Reporting Requirements

Agency (Rule)	Excess Duration	HAP Excess Duration	Verbal Report Within	Written Report Within
Federal (63.6(e)(3))	Any – and SSM Plan Not Followed		2 days	7 days
Michigan (R336.1912)	2 hours	1 hour	2 days	10 days

6.6.1 Immediate SSM Report

Required if a SSM occurred that was not consistent with the SSM Plan, or the SSM Plan was not followed, and an emission limit was exceeded or an operating limit parameter not met as a result.

The immediate report must consist of a phone call or fax to the Agency within 2 working days after the event occurred. It must be followed by a letter, delivered or postmarked within 7 working days after the end of the event, which contains the following:

- Name, title, and signature of a responsible official certifying its accuracy.
- Explanation of the circumstances surrounding the event.
- The reasons for not following the SSM Plan.
- Description of all excess emissions and/or parameter monitoring exceedances which are believed to have occurred.

7.0 RECORDKEEPING

ACM will keep the following records for a period of five years following the date of each occurrence, measurement, maintenance, corrective action, report, or record:

1. A copy of each notification and report necessary to comply with this subpart, including all documentation supporting any initial notification or notification of compliance status.
2. Documentation of the occurrence and duration of each startup or shutdown when the startup or shutdown causes an exceedance of an emission limit.
3. Documentation of the occurrence and duration of each malfunction of operation, baghouse, RTO or monitoring equipment.

4. All maintenance performed on the baghouses, RTO and monitoring equipment.
5. Documentation of the actions that are inconsistent with the actions specified in the plan taken during periods of startup, shutdown or malfunction.
6. All information necessary to demonstrate compliance with the provision of the plan when all actions taken during the startup, shutdown, or malfunction are consistent with the provisions of the plan.
7. Documentation of each period during which the BLDS is malfunctioning or inoperative, including out of control periods.
8. All required measurements needed to demonstrate compliance with a relevant standard, including 15-minute averages BLDS data, raw performance testing and evaluations measurements, that support data that the source is required to report and data recorded from unavoidable breakdowns and out-of-control periods.
9. All required measurements needed to demonstrate compliance with a relevant standard (including, but not limited to, 15-minute averages of BLDS data, raw performance testing measurements, and raw performance evaluation measurements, that support data that the source is required to report).
10. All performance test results, BLDS performance evaluations, and opacity and visible emission observations.
11. All measurements that may be necessary to determine the conditions of performance tests.
12. All calibration checks, adjustments, and maintenance associated with BLDS calibration checks.
13. The total process operating time during the reporting period.
14. All procedures that are part of the quality control program developed and implemented for the BLDS.
15. Records of the annual quantity of each chemical binder or coating material used to make molds and cores, the Material Data Safety Sheet or other documentation that provides the chemical composition of each component, and the annual quantity of HAPS used at the foundry.
16. Previous versions of the performance plan.
17. Records of the date and time that each deviation started and stopped and whether the deviation occurred during a period of startup, shutdown, or malfunction, or during another period.
18. Records of the times the bag leak detection system alarm sounded, and for each valid alarm, the time you initiated corrective action, the corrective action taken, and the date on which the corrective action was completed.

The above listed records will be maintained through a combination of hard copies and electronic files as allowed by §63.10(b)(l).

8.0 REPORTING REQUIREMENTS

ACM will report the following information:

1. Company name and address.
2. Responsible official name, title, and signature.
3. Statement by a responsible official certifying the truth, accuracy, and completeness of the content of the report.
4. Date of report.
5. Beginning and ending dates of the reporting period.

6. Responses and actions consistent with the startup, shutdown, and malfunction (SSM) Plan. Each response to a process or control system startup, shutdown, or malfunction that complies with the provisions of the plan are included in semiannual Startup, Shutdown, and Malfunction Reports to the United States (U.S.) Environmental Protection Agency (EPA). The semiannual reports to U.S. EPA will also confirm that the response actions taken during the reporting period conformed to the applicable requirements of the Startup, Shutdown, and Malfunction Plan and will include:
    a. Identification of the startup, shutdown, or malfunction event(s).
    b. A statement that the provisions of the plan were implemented during the startup, shutdown, or malfunction.
7. If there were no deviations from the emission limitations, work practice standards, or operation and maintenance requirements, ACM will include a statement that there were no deviations during the reporting period.
8. If there were no periods during which the CPMS, CEMS, and BLDS was out of control, ACM will include a statement that there were no periods during which the CPMS, CEMS, and BLDS were out of control during the reporting period.
9. For each deviation from an emissions limitation (including an operating limit) that occurs for which a CMS (including a CPMS or CEMS) is not being used to comply with an emissions limitation or work practice standard, the compliance report will contain the following information, including periods of startup, shutdown, and malfunction.
    a. The total operating time of each emissions source during the reporting period.
    b. Information on the number, duration, and cause of deviations (including unknown cause) as applicable and the corrective action taken.
10. For each deviation from an emissions limitation (including an operating limit) or work practice standard where a CMS (including a CPMS or CEMS) is being used to comply with the emissions limitation or work practice standard in this subpart, ACM will include the following information, including periods of startup, shutdown, and malfunction.
    a. The date and time that each malfunction started and stopped.
    b. The date and time that each CMS was inoperative, except for zero (low level) and high-level checks.
    c. The date, time, and duration that each CMS was out-of-control, including the specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances that occurs during periods other than startups, shutdowns, and malfunctions of the affected source.
    d. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of startup, shutdown, or malfunction or during another period.
    e. A summary of the total duration of the deviations during the reporting period and the total duration as a percent of the total source operating time during that reporting period.
    f. A breakdown of the total duration of the deviations during the reporting period into those that are due to startup, shutdown, control equipment problems, process problems, other known causes, and unknown causes.
    g. A summary of the total duration of continuous monitoring system downtime during the reporting period and the total duration of continuous monitoring system

downtime as a percent of the total source operating time during the reporting period.

h. A brief description of the process units.
i. A brief description of the CMS.
j. The date of the latest CMS certification or audit.
k. A description of any changes in the CMS, processes, or controls since the last reporting period.

11. If a startup, shutdown, or malfunction during the semiannual reporting period was not consistent with the startup, shutdown, and malfunction plan, ACM will submit an immediate startup, shutdown, and malfunction report according to the requirements of 40 CFR 63.10(d)(S)(ii).

Any time an action taken during a startup or shutdown causes an exceedance to any applicable emission limitation, or malfunction (including actions taken to correct a malfunction) and is not consistent with the procedures specified in the Startup, Shutdown, and Malfunction plan, an initial report will be submitted within 2 working days after commencing actions inconsistent with the Startup, Shutdown, and Malfunction plan. The initial report must document the actions taken for that event and must consist of a telephone call or facsimile to the Administrator. The initial report must be followed by a letter that is delivered or postmarked within 7 working days after the end of the event. The letter must contain the name, title, and signature of the responsible official who is certifying its accuracy, explaining the circumstances of the event, the reasons for not following the startup, shutdown, and malfunction plan, describing all excess emissions and/or parameter monitoring exceedances which are believed to have occurred (or could have occurred in the case of malfunctions), and actions taken to minimize emissions.

9.0 PLAN REVISION

The Startup, Shutdown, and Malfunction Plan will be revised to address reasonable revision requests required by U.S. EPA or MDEQ due to a determination that any of the following apply to the plan:

1. A startup, shutdown, or malfunction event that is not addressed in the plan has occurred.
2. The provisions for correcting malfunction process or emissions control equipment are inadequate.

9.1 Copies of the Plan

A current copy of the plan will be kept onsite for the life of the foundry and be available by inspection upon request. Any previous versions of the plan will be kept on file for five (5) years from the date of revision (40 CFR 63,6(e)(3)(v)).

Date Issued	Revision No.	Revised by	Summary of Changes

11/13/2008	0	NTH	Original Issue – New Foundry
12/10/2010	0	NTH	Original Issue – Existing Foundry
8/31/2012	1	Goldenberg Schneider	Combined separate O&M plans, added other air pollution control plan requirements, updated information
3/14/2013	2	Paul McClure	Revised 3.0. Updated CAM for PM control and Monitoring Approach in section 3.1 & 3.2
4/17/2013	3	Paul McClure	Added monitoring approach for EUMPCC, EU-MP baghouses.
10/30/2013	4	NTH	Incorporated RTO into plan
Date Issued	**Revision No.**	**Revised by**	**Summary of Changes**
1/10/2014	5	NTH/Paul McClure	Updated combustion temps of RTO; added baghouse design specifications and monitoring approach for EUSANDSYSTEM; updated baghouse design specifications for EU-SS and EU-CCFBACK; added monitoring approaches for EU-MCS, EU-SS and EU-CCFBACK; updated daily inspection check sheets (Appendix A).
11/6/2015	6	ACM/AWCG	Administrative Updates: 1. Updated ROP Number 2. Updated Test Results Apr-May, 2015 3. Updated daily inspection check sheets to comply with ISO System Format/ID
Date Issued	**Pending Revisions.**	**Revised by**	**Summary of Changes**
12/13/2017	Pending	ACM	Grinder PTI 184-17 issued
7/9/2018	Pending	ACM	Grinders Start -Up
6/4/2019	Pending	ACM / C. Marsh	Updated daily inspection check sheets
6/1/2020	Pending	ACM/Network	Planned stack testing

Pending Revisions: Incorporation of PTI #184-17 into ROP No. MI-ROP-N5814-2015 Renewal

Appendix A