

# Metal Technologies Inc. - Ravenna Ductile Iron

## RDI Air Pollution Control Plan

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 1 of 9 Pages

### 1. General

- 1.1. Various air pollution regulations require operating, maintenance, and malfunction plans to be developed, implemented, and maintained. This Work Instruction satisfies the regulatory plan requirements applicable to RDI.
- 1.2. Any malfunction or deviation, excursion, exceedance, etc. from operating parameters stated in this plan or permit must be responded to in the manner prescribed by this plan.
  - 1.2.1. Regardless of what steps are taken to respond to malfunctions, deviations, excursions, exceedances, etc., emphasis shall be on eliminating increased levels of pollution and restoring operation of the emission unit and pollution control device to normal as soon as possible.
- 1.3. Additional information can be found in the facility's air permit.
- 1.4. This Air Pollution Control Plan shall be reviewed annually (and upon revisions) by the Plant Manager, Maintenance Manager, Manufacturing Manager, Facility Environmental Representative, and Director of Environmental Engineering. This review shall be completed using SharePoint's Controlled Documents routing feature.
- 1.5. All revisions shall remain available indefinitely.

### 2. National Emission Standards for Hazardous Air Pollutants for Iron and Steel Foundries (40 CFR 63.7680 to 63.7765), also known as "MACT"

- 2.1. Purpose: Maximum Achievable Control Technology ("MACT") standards have been developed as required by the 1990 Clean Air Act Amendments. The purpose of the MACT standards is to reduce Hazardous Air Pollutant ("HAP") emissions in the US. The standards include emissions limits (contained in facility's air permit) as well as operation and maintenance requirements as listed herein.
- 2.2. Applies to:
  - 2.2.1. Scrap & Charge Handling, Iron Charging, Preheater, Melting, Pouring, Fugitive Emissions
- 2.3. Scrap Certification & Selection Plan (40 CFR 63.7700)
  - 2.3.1. MTI foundries purchase and use 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. Any post-consumer engine blocks, post-consumer oil filters, or oily turnings that are processed and/or cleaned to the extent practicable such that the materials do not include lead components, mercury switches, chlorinated plastics, or free organic liquids can be included in this certification. The raw material specifications, which specify these requirements, are located in the MTI Operating System SharePoint Library as controlled documents. Adherence to this practice satisfies 63.7700(a-b), and therefore RDI is not subject to 63.7700(c).
  - 2.3.2. Of particular interest to MTI foundries is the use of "oily turnings" that have been processed and/or cleaned to the extent practicable as noted above. In order to comply with this standard, MTI purchases only turnings which conform to the raw materials specifications noted above. Use of internally-processed borings (i.e. wet borings that are dried by our internal dryer process) is permitted as long as the processed borings meet the same raw material specifications (noted above) as the purchased dry borings.
- 2.4. Operating & Maintenance (O&M) Plan (40 CFR 63.7710)
  - 2.4.1. Emission units, air pollution control equipment, and monitoring equipment must always be operated and maintained in a manner consistent with good air pollution control practices for minimizing emissions.

# **Metal Technologies Inc. - Ravenna Ductile Iron**

## **RDI Air Pollution Control Plan**

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 2 of 9 Pages

- 2.4.2. At a minimum, equipment must be operated, monitored, and inspected according to the following requirements (see Appendices A & B to see how requirements are met). Any abnormal observations, readings, etc. require repair as soon as practicable.
  - 2.4.2.1. Daily record of differential pressures;
  - 2.4.2.2. Weekly confirmation of dust removal from hoppers
  - 2.4.2.3. Daily compressed air checks
  - 2.4.2.4. Periodic monitoring of cleaning cycles
  - 2.4.2.5. Monthly check of bag cleaning mechanisms for proper function through visual inspection or equivalent means
  - 2.4.2.6. Monthly inspections of equipment important to the total capture system (pressure sensors, dampers, damper switches)
  - 2.4.2.7. Monthly visual inspection of integrity of equipment (e.g., displaced hoods, restricted/dented/pierced ducts, fans, etc.)
  - 2.4.2.8. Mold vent gases must self-ignite >75% of the time or additional ignition procedures must be implemented.
- 2.5. Site-Specific Bag Leak Detection Monitoring Plan (40 CFR 63.7710(b)(4))
  - 2.5.1. Purpose: Bag leak detection systems (Broken Bag Detectors, "BBDs") require each sensor/monitor to be installed, maintained, operated, and monitored per a site-specific plan due to the unique characteristics of each pollutant stream.
  - 2.5.2. Installation
    - 2.5.2.1. The bag leak detection system is installed according to the procedures outlined in the Auburn Systems, LLC (now FilterSense) Instruction Manual.
  - 2.5.3. Initial & Periodic Adjustment & Maintenance
    - 2.5.3.1. Monitoring and alarm settings are set according to MTI's "Broken Bag Detector Alarm Setting Protocol" (maintained on RDI's Environmental SharePoint Library) by the corporate environmental department.
      - 2.5.3.1.1. This document includes monitoring data, equipment information, and the rationale for alarm setpoints.
      - 2.5.3.1.2. Each BBD has a unique protocol document. All are saved on RDI's Environmental SharePoint Library.
    - 2.5.3.2. No adjustments may be made without state notification, except quarterly seasonal adjustments:
      - 2.5.3.2.1. If seasonal changes in temperature, humidity, etc. give cause for changing the alarm setpoint, the "Broken Bag Detector Alarm Setting Protocol" must be used and maintained as a record.
  - 2.5.4. New BBDs use a technology that does not require all of the QA procedures that are listed in the EPA BBD Guidance Document EPA-454/R-98-015, therefore they are not completed. For example, drift checks and electronics zero checks are not needed per manufacturer's guidance due to the digital nature of the units. The manufacturer's guidance is maintained on RDI's SharePoint site.
  - 2.5.5. BBDs are maintained through:
    - 2.5.5.1. Monthly visual inspection, cleaning, and response tests
    - 2.5.5.2. Annual inspection and zero check
  - 2.5.6. Required BBD spare parts inventory
    - 2.5.6.1. 1 full spare unit including sensor probe and monitor (if equipped)

**RDI Air Pollution Control Plan**

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 3 of 9 Pages

- 2.5.6.2. Sufficient communications cable and hardware to replace in the event of malfunction, damage, etc.
- 2.5.7. Alarm response
  - 2.5.7.1. When an alarm is triggered, the following must be documented in the Bag Leak Detection Alarm Log or equivalent.
    - 2.5.7.1.1. time the alarm sounds
    - 2.5.7.1.2. equipment involved
    - 2.5.7.1.3. description of event
    - 2.5.7.1.4. time investigation of cause commences (WITHIN 1 HOUR)
    - 2.5.7.1.5. time corrective action is initiated to correct the cause (WITHIN 24 HOURS)
    - 2.5.7.1.6. time corrective action completed (AS SOON AS POSSIBLE)
  - 2.5.8. Possible corrective actions (not exhaustive):
    - 2.5.8.1. *If the CA taken does not match on of the following options, Corporate Environmental must be notified in order to determine if it is a reportable incident.*
    - 2.5.8.2. Inspecting the baghouse
    - 2.5.8.3. Checking for visible emissions
    - 2.5.8.4. Sealing off defective filter media or eliminating the pulsing of that row
    - 2.5.8.5. Replacing defective filter media
    - 2.5.8.6. Sealing off a defective compartment
    - 2.5.8.7. Cleaning or repairing the BBD system
    - 2.5.8.8. Making process changes
    - 2.5.8.9. Shutting down the process
  - 2.5.9. Alarms with no known cause:
    - 2.5.9.1. When an alarm is triggered, then goes off on its own (so called “phantom” or “false” alarms), a WO shall be created to visually inspect the interior of the baghouse for signs of dust in the clean side.
    - 2.5.9.2. The purpose of this inspection is to confirm that there no underlying problems with the baghouse.
    - 2.5.9.3. This WO must be completed during the next shutdown of the process.
    - 2.5.9.4. If dust or other abnormality is found during the inspection, it must be logged and remedied according to the APCP.
  - 2.5.10. Data monitoring and storage
    - 2.5.10.1. The bag leak detector output is stored electronically. The output is continuously monitored by the alarm mechanism, and a data point is stored at least every 10 seconds.
    - 2.5.10.2. Data from periods of malfunction, adjustment, or calibration shall not be used for monitoring and compliance verification.
- 2.6. Start-up and shutdown
  - 2.6.1. Start-up procedure:
    - 2.6.1.1. Start pollution control equipment prior to beginning production
    - 2.6.1.2. Ensure all appropriate operating parameters are within specified ranges, such as differential pressure and BBD signal
    - 2.6.1.3. Begin production and ensure parameters remain within limits
    - 2.6.1.4. Immediately notify Maintenance Manager of any abnormal conditions
  - 2.6.2. Shutdown procedure:
    - 2.6.2.1. Wait until production has ceased

**RDI Air Pollution Control Plan**

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 4 of 9 Pages

2.6.2.2. Shut down pollution control equipment

**3. Compliance Assurance Monitoring (CAM) Plan (40 CFR 64)**

- 3.1. Purpose: CAM is intended to provide a reasonable assurance of compliance with applicable requirements under the Clean Air Act (CAA) for large emission units that rely on pollution control equipment to achieve compliance. CAM accomplishes this by establishing monitoring requirements for emission units and their associated air pollution control equipment to ensure continuous, proper operation.
- 3.2. Applies to: Furnaces, Pouring, Cooling, Shakeout, Blast Machines, Sand System, West Blast (Seneca) baghouse, East & West Melt baghouses, and East & West Sand baghouses
- 3.3. CAM operating/monitoring requirements are listed in Appendix A.
- 3.4. Upon detecting any excursions from the requirements in Appendix A, RDI will follow the alarm response steps noted in 2.5.7 and 2.5.8 of this Plan (including records kept) and restore operation of the emission unit and pollution control system to its normal or usual manner of operation as expeditiously as practicable.
- 3.5. CAM Plans are required to contain background, monitoring approach, performance criteria, and justification information for each emission unit/control device subject to CAM.
  - 3.5.1. RDI maintains this information in its Environmental SharePoint Library.

**4. Risk Management Plan (RMP) (40 CFR 68)**

- 4.1. Purpose: Federal provisions for the prevention of chemical accidents.
- 4.2. Not applicable – RDI does not maintain quantities of any substances listed in 40 CFR 68 above their threshold quantities.

**5. Air Pollution Control Equipment Preventive Maintenance Plan (PMP)**

- 5.1. RDI maintains a PMP for inspecting, maintaining, and repairing all emission control devices.
- 5.2. The PMP is developed and administered using the Odyssey PM program. The program includes:
  - 5.2.1. Identification of individuals responsible for inspecting, maintaining, and repairing emission control devices;
  - 5.2.2. Description of the items or conditions that will be inspected and the inspection schedule; and
  - 5.2.3. Identification and quantification of necessary replacement parts that must be maintained in inventory for quick replacement.
  - 5.2.4. Appendix B lists the emission control devices included in the PMP as well as their associated PM tasks.

**6. Spare Parts Inventory**

- 6.1. An inventory of spare parts shall be kept on site for each fabric filter collector.
  - 6.1.1. Required spares:
    - 6.1.1.1. Broken bag detector components to restore operation in the event of a failure
    - 6.1.1.2. Differential pressure gauge and tubing
    - 6.1.1.3. Fabric filter bags
    - 6.1.1.4. Filter bag cages
    - 6.1.1.5. Pulse timer board
  - 6.1.2. Recommended spares:
    - 6.1.2.1. Pulse valves
    - 6.1.2.2. Blower motors & drive belts
    - 6.1.2.3. Auger chains, bushings & bearings
    - 6.1.2.4. Rotary air locks

# Metal Technologies Inc. - Ravenna Ductile Iron

## RDI Air Pollution Control Plan

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 5 of 9 Pages

6.1.2.5. Electrical/communications components

### 7. Associated documents/resources

- 7.1. Environmental SharePoint Site
- 7.2. Environmental SharePoint Library
- 7.3. WI-EN-004 RDI Air Pollution Control Plan Supporting Information
- 7.4. RDI Title V Air Permit MI-ROP-N5866-2019

Revision Date	Description of Changes
3/1/2021	Updated format to comply with new ISO 14001 EMS

# Metal Technologies Inc. - Ravenna Ductile Iron

## RDI Air Pollution Control Plan

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 6 of 9 Pages

### Appendix A: Monitored Parameters

Control Equipment	Emission Unit	Regulation	Parameter	Frequency	Range	Control
East & West Melt Baghouses	EU-PREHEATER & EU-MELTING	NESHAPS; CAM; state	1) Broken Bag Detectors 2) Differential Pressure 3) Visible Emissions 4) Compressed Air Supply	1) Continuous, recorded at least every 10 seconds 2) Continuous, recorded daily 3) Daily 4) Continuous	1) per BBD plan 2) East Melt: 1-10"; West Melt: 2-10" 3) Observed/Not Observed 4) >85 psi	1) automatic 2) SOP – 1 <sup>st</sup> Shift Dust Collector Reading 3) SOP – 1 <sup>st</sup> Shift Dust Collector Reading 3) PM 38999 4) automatic*
Inoculation Baghouse	EU-INOCULATION	State	1) Differential Pressure 2) Visible Emissions	1) Continuous, recorded daily 2) Daily	1) 1-8" 2) Observed/Not Observed	1) SOP – 1 <sup>st</sup> Shift Dust Collector Reading 2) SOP – 1 <sup>st</sup> Shift Dust Collector Reading
East & West Sand Baghouses	EU-POURING; EU-COOLING; EU-SHAKEOUT; & EU-SANDSYSTEM	NESHAPS; CAM; state	1) Broken Bag Detectors 2) Differential Pressure 3) Visible Emissions 4) Compressed Air Supply	1) Continuous, recorded at least every 10 seconds 2) Continuous, recorded daily 3) Daily 4) Continuous	1) per BBD plan 2) East Sand: 2-10"; West Sand: 2-10" 3) Observed/Not Observed 4) >85 psi	1) automatic 2) SOP – 1 <sup>st</sup> Shift Dust Collector Reading 3) SOP – 1 <sup>st</sup> Shift Dust Collector Reading 3) PM 38999 4) automatic*
West Blast (Seneca) Baghouse	EU-CLEAN	CAM; state	1) Differential Pressure 2) Visible Emissions	1) Continuous, recorded daily 2) Daily	1) 2-10" 2) Observed/Not Observed	1) SOP – 1 <sup>st</sup> Shift Dust Collector Reading 2) SOP – 1 <sup>st</sup> Shift Dust Collector Reading
Desprue Baghouses	n/a	Exempt	1) Differential Pressure 2) Visible Emissions	1) Continuous, recorded daily 2) Daily	1) 2-10" 2) Observed/Not Observed	1) SOP – 1 <sup>st</sup> Shift Dust Collector Reading

# Metal Technologies Inc. - Ravenna Ductile Iron

## RDI Air Pollution Control Plan

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 7 of 9 Pages

						2) SOP – 1 <sup>st</sup> Shift Dust Collector Reading
Fugitives	FG-MACT EEEEE	NESHAPS	Method 9 Opacity	6 months	<20% 6-min ave (one 6-min ave/hr up to 27%)	Environmental Task List
N/A	FG-RULE287(c)	state	Rust Inhibitor Usage	Monthly	<200 gal/mo	Rolling Totals Tracker

\*Compressed air is monitored plant-wide through the use of alarms which notify plant personnel when the pressure falls out of range. 40 CFR 63.7740(c)(3) requires daily check of air supply for pulse-jet baghouses. RDI utilizes the alarms to ensure the continuous plant-wide supply of compressed air.

# Metal Technologies Inc. - Ravenna Ductile Iron

## RDI Air Pollution Control Plan

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 8 of 9 Pages

### Appendix B: Compliance Matrix

Equipment	Regulation	Requirement	Min Frequency	Control**
Duct Work	I	Duct Airflow Testing and Review	Annual	8105
Each Dust Collector	MS	Differential Pressure Readings	Daily	SOP
Each Stack	MS	Visible Emissions Readings	Daily	SOP
Sand System DCs	MS	Mechanical & Visual Inspections	Weekly	2118
Melt System DCs	MS	Mechanical & Visual Inspections	Weekly	2152
West Blast DC	MS	Mechanical & Visual Inspections	Weekly	2155
East Desprue DC	I/Exempt	Mechanical & Visual Inspections	Weekly	2182
West Desprue DC	I/Exempt	Mechanical & Visual Inspections	Weekly	2183
Inoculation DC	S	Mechanical & Visual Inspections	Weekly	2184
Ventilation System Dampers	MS	Mechanical & Visual Inspections	Monthly	4008, 4140
Sand System DCs	MS	Mechanical & Visual Inspections	Monthly	4118
Melt System DCs	MS	Mechanical & Visual Inspections	Monthly	3151
West Blast DC	MS	Mechanical & Visual Inspections	Monthly	2854
East Desprue DC	I/Exempt	Mechanical & Visual Inspections	Monthly	3182
West Desprue DC	I/Exempt	Mechanical & Visual Inspections	Monthly	3183
Inoculation DC	S	Mechanical & Visual Inspections	Monthly	3184
Sand System DC	MS	BLDS Clean & Test	Monthly	4116
Melt System DC	MS	BLDS Clean & Test	Monthly	4152
Inoculation System DC	I	BLDS Clean & Test	Monthly	4162
E Desprue System DC	I	BLDS Clean & Test	Monthly	4164
W Desprue System DC	I	BLDS Clean & Test	Monthly	4166
W Blast DC	I	BLDS Clean & Test	Monthly	4160
All DCs	I	Gauge Checks	Monthly	4189
Cell DC	I/Exempt	Mechanical & Visual Inspection	Quarterly	5225
All Broken Bag Detectors	IM	BBD System Zero Check	Annual	8106
Differential Pressure Gauges	MCS	Calibration or Replacement	Semiannual	4117



# Metal Technologies Inc. - Ravenna Ductile Iron

## RDI Air Pollution Control Plan

DCN: WI-EN-003

Revision Date: 3/2/2021

Page 9 of 9 Pages

All DC's	M	Confirm dust removal systems operating	Weekly	SOP – Bag Disposal For DC Form
n/a	M	Method 9 Opacity Readings	Semiannual	ETL
n/a	S	Rolling Air Emissions and Totals	Monthly	ETL
n/a	MCS	Deviation/Certification Reports	Semiannual	ETL
n/a	MS	Compliance Certification	Annual	ETL
n/a	S	MAERS report	Annual	ETL
n/a	S	MAERS Fee Pmt	Annual	Invoice
n/a	I	APCP Review/Update	Annual	ETL
n/a	MCS	Malfunction report	As needed	n/a
n/a	IM	BBD Alarm Response	As needed	n/a

\*I=Internal requirement; M=MACT O&M requirement; C=CAM Plan requirement; S=State and Permit requirements

\*\*PM number; ETL=Environmental Task List