

*Site-Specific Monitoring Plan  
for  
Continuous Parametric Monitoring Systems*



*Empire Iron Mining Partnership*

*July 2019*

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# Site Specific Monitoring Plan

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## 1. Purpose

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Cleveland-Cliffs' Empire Iron Mining Partnership facility is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Taconite Iron Ore Processing [40 Code of Federal Regulations (CFR) Part 63 Subpart RRRRR]. This regulation is commonly referred to as the Taconite MACT. The regulation requires the development and implementation of a Site Specific Monitoring Plan for the Continuous Parametric Monitoring Systems (CPMS) that are used for compliance with the Taconite MACT (40 CFR 63.9632(b)). The plan must be available for inspection upon request by the facility's permitting authority. The plan must be completed and implemented by the Taconite MACT compliance date of October 30, 2006.

This plan is applicable to CPMS that is used to demonstrate compliance with the Taconite MACT. This includes the CPMS used on indurating furnace(s) for Good Combustion Practices (GCP) and on pollution control equipment used to control particulate emissions from the following sources:

- Ore Crushing and Handling Emission Units;
- Indurating Furnace(s); and
- Finished Pellet Handling Emission Units.

The general purpose of the site-specific monitoring plan is to address the installation, performance, operation and maintenance, quality assurance, and recordkeeping and reporting procedures. In addition to the general requirements, this document also addresses roles, responsibilities, and revisions.

## 2. Responsibilities

The following is a summary of the responsibilities for each position involved in the implementation of the SSM Plans.

Document Section	Description of Requirement	Responsible Person(s)
5	Installation Requirements	Electrical Engineer/Instrumentation Dept
6	Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system	Electrical Engineer/Instrumentation Dept
7	CPMS calibrations	Instrumentation Dept
7	CPMS calibration recordkeeping	Instrumentation Dept
8 + 9	CPMS spare parts	Maintenance / Instrumentation Dept
8	CPMS monitoring systems status before performance tests	Environmental Dept
8	Determining CPMS "out of control" periods	Environmental Dept
8 + 10	Recordkeeping for CPMS "out of control" periods and CPMS "down time"	Environmental Dept
9	CPMS preventative maintenance	Maintenance / Instrumentation Dept
9	CPMS preventative maintenance recordkeeping	Maintenance / Instrumentation Dept
9	CPMS data recording and calculations	Environmental Dept
9	Corrective actions for CPMS	Maintenance / Instrumentation Dept
10	CPMS monitoring data recordkeeping	Environmental Dept
10	CPMS reporting (per the SSM Plan)	Environmental Dept

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### 3. Definitions

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*Administrator* means the regulatory agency that is responsible for the administration of the Taconite MACT regulation; this could be EPA, State of MI EGLE (MDEQ).

*Bypass* means to route gas around a control device.

*CEMS* means continuous emissions monitoring system, such as a NO<sub>x</sub> or SO<sub>2</sub> system.

*CMS* means continuous monitoring system, and could be used to describe CEMS and CPMS.

*COMS* means continuous opacity monitoring system.

*CPMS* means continuous parametric monitoring system.

*CFR* means Code of Federal Regulations.

*Dynamic Wet Scrubber* means an air emissions control device which utilizes a mechanically powered fan to cause contact between the process exhaust gas stream and the scrubbing liquid which are introduced concurrently into the fan inlet.

*EGLE* means State of Michigan Department of Environment, Great Lakes, & Energy.

*EPA* means United States Environmental Protection Agency.

*ESP* means electrostatic precipitator.

*Finished Pellet Handling* means the transfer of fired taconite pellets from the indurating furnace to the finished pellet stockpiles at the plant. Finished pellet handling includes, but is not limited to:

- Furnace discharge or grate discharge;
- Finished pellet screening;
- Finished pellet transfer; and
- Finished pellet storage.

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The atmospheric pellet cooler vent stack and gravity conveyor gallery vents designed to remove heat and water vapor from the structure are not included as part of the finished pellet handling affected source.

*GCP* means the Good Combustion Practices.

*HAPS* means Hazardous Air Pollutants.

*Indurating* means the process whereby unfired taconite pellets, called green balls, are hardened at high temperature in an indurating furnace. Types of indurating furnaces include straight-grate indurating furnaces and grate-kiln indurating furnaces.

*MACT* means Maximum Achievable Control Technology.

*Malfunction* means any sudden, infrequent, and not reasonably preventable failure of air pollution control and monitoring equipment, process equipment, or a process to operate in a normal or usual manner which causes, or has the potential to cause, the emission limitations in an applicable standard to be exceeded. Failures that are caused in part by poor maintenance or careless operation are not malfunctions. Malfunctions are specifically defined in the SSM Plan.

*MDEQ* means the Michigan Department of Environmental Quality (EGLE).

*O&M Plan* means the Operation and Maintenance Plan.

*Ore Crushing and Handling Emission Units* means the process whereby dry taconite ore is crushed and screened. Ore crushing and handling includes, but is not limited to:

- Dry crushing operations (e.g. primary, secondary, and tertiary crushing);
- Dry ore conveyance and transfer points;
- Dry ore classification and screening;
- Dry ore storage and stockpiling;
- Dry milling;
- Dry cobbing (i.e. dry magnetic separation); and

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- Grate feed.

Ore crushing and handling specifically excludes any operations where the dry crushed ore is saturated with water, such as wet milling and wet magnetic separation.

*Shutdown* means the cessation of operation of an affected source or portion of an affected source for any purpose.

*SOP* means standard operating procedure.

*SSM Plan* means Startup, Shutdown, and Malfunction Plan.

*Startup* means the setting in operation of an affected source or portion of an affected source for any purpose.



## 4. Continuous Parametric Monitoring Systems Covered by this Plan

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This Plan has been developed for two categories of CPMS.

### 4.1 Wet Scrubbers

The following table contains CPMS utilized by wet scrubbers to monitor the parameters.

**Table 4.1 –Wet Scrubber**

Control Equipment Description	Process Description	Scrubber Flow Meter	Scrubber Pressure Drop Indicator
Wet Scrubbers	Ore Crushing and handling, finished pellet handling	Yamatate Mag-flow meter	Rosemount Differential Pressure Transmitter, 0-25 in H <sub>2</sub> O

### 4.2 Indurating Furnaces with Dry ESPs

The following table lists the indurating furnaces that utilize dry ESPs as particulate matter control equipment that are covered by this plan.

**Table 4.2 – Indurating Furnaces with Dry ESPs**

Air Permit ID Number	Control Equipment Description	Process Description	Opacity Meter
SVUNIT2FURNACE	Unit 2 Dry ESP	Grate-Kiln Pelletizing Unit 2	Sick/Maihak OMD 41 Opacity Monitor
SVUNIT3FURNACE	Unit 3 Dry ESP	Grate-Kiln Pelletizing Unit 3	Sick/Maihak OMD 41 Opacity Monitor
SVUNIT4FURNACE	Unit 4 Dry ESP	Grate-Kiln Pelletizing Unit 4	Sick/Maihak OMD 41 Opacity Monitor

### 4.3 Indurating Furnaces with Good Combustion Practices

The following table lists the indurating furnaces for the facility. The indurating furnaces are all required to follow Good Combustion Practices and, therefore, are covered by this plan.

**Table 4.3 – Indurating Furnaces with Good Combustion Practices**

<b>Air Permit ID Number</b>	<b>Control Equipment Description</b>	<b>Process Description</b>	<b>GCP Monitoring Parameters</b>
SVUNIT2FURNACE	Unit 2 Dry ESP	Grate-Kiln Pelletizing Unit 2	See GCP located in O & M Plan
SVUNIT3FURNACE	Unit 3 Dry ESP	Grate-Kiln Pelletizing Unit 3	See GCP located in O & M Plan
SVUNIT4FURNACE	Unit 4 Dry ESP	Grate-Kiln Pelletizing Unit 4	See GCP located in O & M Plan

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## 5. Installation Requirements

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The requirements presented in this section of the Site-Specific Monitoring Plan apply to all of the CPMS presented in the tables which are presented in section 4.

Per 40 CFR 63.9632(b)(1), the Site-Specific Monitoring Plan must address the following:

*Installation of the CPMS sampling probe or other interface at a measurement location relative to each affected emission unit such that the measurement is representative of control of the exhaust emissions (e.g. on or downstream of the last control device).*

In order to comply with this requirement, this facility has followed standard industry practices for the installation of monitoring equipment in order to ensure that the measurement is representative.

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## 6. Performance and Equipment Specifications

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The requirements presented in this section of the Site-Specific Monitoring Plan apply to all of the CPMS presented in the tables, which are presented in section 4.

Per 40 CFR 63.9632(b)(2), the Site-Specific Monitoring Plan must address the following:

*Performance and equipment specifications for the sample interface, the parametric signal analyzer, and the data collection and reduction system.*

In order to comply with this requirement, this facility has followed these procedures for the installation of scrubber instrumentation to ensure representative measurement:

- **Sample Interface:**
  - **Water Flow Meters:** Water flow meters were installed using the manufacturers specifications taking into account access, safety and a suitable flow meter environment.
  - **Differential Pressure Transmitters:** Differential pressure transmitters were installed based on proximity to the process, minimizing piping, easy access, personnel safety, practical field calibration and a suitable transmitter environment.
- **Parametric Signal Analyzer:**
  - **Water Flow Meter:** Yamatake MagneW Two-wire PLUS
  - **Differential Pressure Transmitters:** Rosemount Differential Pressure Transmitter, 0-25 in H<sub>2</sub>O
- **Data Collection and Reduction System:**
  - **Data Collection and Reduction System:** Data is collected in a Distributive Control System (DCS) that is fed to a OSI PI system historian. Cirrus software is used to reduce and manage the data from the OSI PI system.

## 7. Performance Evaluation Procedures

The requirements presented in this section of the Site-Specific Monitoring Plan apply to all of the CPMS presented in the tables, which are presented in section 4.

Per 40 CFR 63.9632(b)(3), the Site-Specific Monitoring Plan must address the following:

*Performance evaluation procedures and acceptance criteria (e.g., calibrations)*

In order to comply with this requirement, this facility has implemented the following procedures for performance evaluation procedures:

**Table 7.1 – CPMS Calibration Frequency and Calibration Acceptance Criteria**

Measurement Type	Instrument Type	Calibration Frequency	Calibration Acceptance Criteria
<b>Flow Meters</b> (Wet Scrubbers):	Yamatake Mag-flow meter	NA	Factory Calibrated
<b>Pressure Drop Indicators</b> (Wet Scrubbers)	Rosemount Differential Pressure Transmitter, 0-25 in H <sub>2</sub> O	Yearly	NA
<b>Opacity Monitors</b> (dry ESPs)	Sick/Maihak OMD 41 Opacity Monitor	Daily (Zero and Span)	CD less than 4x
	Sick/Maihak OMD 41 Opacity Monitor	Quarterly (Performance Evaluation)	See 40 CFR Part 60 Appendix B PS-1
	Sick/Maihak OMD 41 Opacity Monitor	Annually (Zero Alignment)	Re-align meter

Additional details regarding the performance evaluation procedures are provided in the appendices.

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## 8. Operation and Maintenance

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The requirements presented in this section of the Site-Specific Monitoring Plan apply to all of the CPMS presented in the tables which are presented in section 4.

Per 40 CFR 63.9632(b)(4), the Site-Specific Monitoring Plan must address the following:

*Ongoing operation and maintenance procedures in accordance with the general requirements of 63.8(c)(1), (3), (4)(ii), (7), and (8).*

These sections of the regulation address the following:

**40 CFR 63.8(c)(1):** *The owner or operator of an affected source shall maintain and operate each Continuous Monitoring System (CMS) as specified in this section, or in a relevant standard, and in a manner consistent with good air pollution control practices.*

- (i) *The owner or operator of an affected source must maintain and operate each CMS as specified in 63.6(e)(1) [Presented below].*
- (ii) *The owner or operator must keep the necessary parts for routine repairs of the affected CMS equipment readily available.*
- (iii) *The owner or operator of an affected source must develop and implement a written startup, shutdown, and malfunction plan for CMS as specified in 63.6(e)(3).*

**40 CFR 63.8(c)(3):** *All CMS shall be installed, operational, and data verified as specified in the relevant standard either prior to or in conjunction with conducting performance tests in 63.7. Verification of operation status shall, at a minimum, include completion of the manufacturers written specifications or recommendations for installation, operation, and calibration of the system.*

**40 CFR 63.8(c)(4)(ii):** *All CEMS for measuring emissions other than opacity shall complete a minimum of once cycle of operation (sampling, analyzing, and data recording) each successive 15-minute period.*

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**40 CFR 63.8(c)(7):**

- (i) *A CEMS is out of control if –*
  - (A) *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 relevant standard; or*
  - (B) *The CMS fails a performance test audit (e.g., cylinder gas audit), relative accuracy test audit, or linearity test audit; or*
  - (C) *The COMS CD exceeds two times the limit in the applicable performance specification in the relevant standard.*
- (ii) *When the CMS is out of control, the owner or operator of the affected source shall take the necessary corrective action and shall repeat all necessary tests which indicate that the system is out of control. The owner or operator shall take corrective action and conduct retesting until the performance requirements are below the applicable limits. The beginning of the out-of-control period is the hour the owner or operator conducts a performance test (e.g., calibration drift) that indicates an exceedence of the performance requirement established under this part. 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 shall not be used in data averages and calculations or to meet any data availability requirement established under this part.*

**40 CFR 63.8(c)(4)(ii):** *The owner or operator of a CMS that is out of control as defined in paragraph (c)(7) of this section shall submit all information concerning out-of-control periods, including start and end dates and hours and descriptions of corrective actions taken, in the excess emission and continuous monitoring system performance report required in 63.10(e)(3).*

**40 CFR 63.6(e)(1):** *Operation and Maintenance Requirements*

- (i) *At all times, including periods of startup, shutdown, and malfunction, the owner or operator must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent*

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*with safety and good air pollution control practices for minimizing emissions. During a period of startup, shutdown, or malfunction, this general duty to minimize emissions requires that the owner or operator reduce emissions from the affected source to the greatest extent which is consistent with good air pollution control practices. This general duty to minimize emissions during periods of startup, shutdown, or malfunction does not require the owner or operator to achieve emission levels that would be required by the applicable standard at other times if this is not consistent with safety and good air pollution control practices, nor does it require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operation and maintenance procedures (including the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section) review of operation and maintenance records, and inspection of the source.*

- (ii) Malfunctions must be corrected as soon as practicable after their occurrence in accordance with the startup, shutdown, and malfunction plan required in paragraph (e)(3) of this section. To the extent that an unexpected event arises during a startup, shutdown, or malfunction, an owner or operator must comply by minimizing emissions during such startup, shutdown, and malfunction event consistent with safety and good pollution control practices.*
- (iii) Operation and maintenance requirements established pursuant to section 112 of the Act are enforceable independent of emission limitations of other requirements in relevant standards.*

In order to comply with this requirement, this facility has implemented the following procedures:

- **Spare Parts:** This facility maintains the necessary spare parts for routine repair of the monitoring equipment required by the Taconite MACT. The facility spare parts that typically take 1 week or less to order are set up as an order on demand. Spare parts necessary for routine maintenance that typically take longer than a week to receive are stocked in the warehouse. Spare parts are also addressed in Appendix A.



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- **Startup, Shutdown, and Malfunction Plan:** This facility has developed and implemented an SSM Plan for all of the equipment that is regulated by the Taconite MACT regulation. Additional details regarding this requirement are found in the SSM Plan.
- **Monitoring Prior to Performance Testing:** Prior to conducting performance testing as required by the Taconite MACT regulation, all required monitoring systems are installed, operational, and data verified. Verification of operation status shall, at a minimum, include completion of the manufacturers written specifications or recommendations for installation, operation, and calibration of the system.
- **Sampling Frequency:** All required monitoring equipment completes at least one sampling cycle (sampling, analyzing, and data recording) each successive 15-minute period.
- **Out-of-Control Periods:** As required in the regulation, this facility takes the necessary corrective actions to repair the CPMS. During the period the monitoring equipment is out of control, the facility does not use the recorded data in data averages and calculations or to meet any data availability requirement.

The out-of-control periods, as defined in 40 CFR 63.8(c)(7)(i) addresses continuous opacity monitoring systems (COMS). Except for opacity meters which could be used for dry ESPs, these definitions do not apply to Taconite MACT monitoring. The definition of “out of control” is typically based on daily calibration drift checks for COMS. However, the type of monitoring equipment that is used for compliance with the taconite MACT do not typically involve frequent periodic drift tests because the equipment is not designed for that purpose. Therefore, the facility has developed the following general definition of an out of control period for the CPMS for this facility:

- *The beginning of the out-of-control period* is defined by the facility as the hour that the CPMS reading is noted to be operating outside of the quality control limits. This can include a review of operating data in order to identify events, such as power outages, that may have caused the meter to go out of control.
- *The end of the out-of-control period* is defined by the facility as the hour following the completion of corrective action and successful demonstration that the system is within the allowable quality control limits.

In addition, the facility has developed specific definitions for “out of control” for each type of monitoring equipment. These definitions are based on the general premise of defining when the data is “good” versus when the data is “bad”. The definitions are presented in Table 8.1 and in Appendix A.

**Table 8.1 – CPMS Definitions of “Out of Control”**

<b>Measurement Type</b>	<b>Instrument Type</b>	<b>Definition of “Out of Control”</b>
<b>Flow Meters</b> (Wet Scrubbers, Dynamic Wet Scrubbers):	Yamatake Mag-flow meter	The data is considered “out of control” for this equipment if the flow rate is out of the normal range.
<b>Pressure Drop Indicators</b> (Wet Scrubbers, Dynamic Wet Scrubbers)	Rosemount Differential Pressure Transmitter, 0-25 in H <sub>2</sub> O	The data is considered “out of control” for this equipment if the pressure drop is below 0 in. H <sub>2</sub> O or above 24 in. H <sub>2</sub> O.
<b>Opacity Meters</b> (dry ESPs)	Sick/Maihak OMD 41 Opacity Monitor	The data is considered “out of control” if the zero, or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification.

- **Reporting Out-of-Control Periods:** The facility reports out of control periods as required by the regulation. Reporting procedures are presented in section 10 of this document.
- **Operation and Maintenance during SSM Events:** This facility has developed and implemented an SSM Plan for all of the equipment that is regulated by the Taconite MACT regulation. The plan includes procedures for operating in a manner “consistent with safety and good air pollution control practices for minimizing emissions. Additional details regarding this requirement are found in the SSM Plan.

Additional details regarding the operation procedures are provided in the appendices.

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## 9. Data Quality Assurance

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The requirements presented in this section of the Site-Specific Monitoring Plan apply to all of the CPMS presented in the tables which are presented in section 4.

Per 40 CFR 63.9632(b)(5), the Site-Specific Monitoring Plan must address the following:

*Ongoing data quality assurance procedures in accordance with the general requirements of 63.8(d).*

This section of the regulation addresses the following:

**40 CFR 63.8(d):** *Quality control program.*

- (1) *The results of the quality control program required in this paragraph will be considered by the Administrator when he/she determines the validity of monitoring data.*
- (2) *The owner or operator of an affected source that is required to use a CMS and is subject to the monitoring requirements of this section and a relevant standard shall develop and implement a CMS quality control program. As part of the quality control program, the owner or operator shall develop and submit to the Administrator for approval upon request a site-specific performance evaluation test plan for the CMS performance evaluation required in paragraph (e)(3)(i) of this section, according to the procedures specified in paragraph (e). In addition, each quality control program shall include, at a minimum, a written protocol that describes procedures for each of the following operations:*
  - (i) *Initial and any subsequent calibration of the CMS;*
  - (ii) *Determination and adjustment of the calibration drift of the CMS;*
  - (iii) *Preventive maintenance of the CMS, including spare parts inventory;*
  - (iv) *Data recording, calculations, and reporting;*

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- (v) *Accuracy audit procedures, including sampling and analysis methods; and*
  - (vi) *Program of corrective action for a malfunctioning CMS.*
- (3) *The owner or operator shall keep these written procedures on record for the life of the affected source or until the affected source is no longer subject to the provisions of this part, to be made available for inspection, upon request, by the Administrator. If the performance evaluation plan is revised, the owner or operator shall keep previous (i.e., superseded) versions of the performance evaluation plan on record to be made available for inspection, upon request, by the Administrator, for a period of 5 years after each revision to the plan. Where relevant, e.g., program of corrective action for a malfunctioning CMS, these written procedures may be incorporated as part of the affected source's startup, shutdown, and malfunction plan to avoid duplication of planning and recordkeeping efforts.*

In order to comply with this requirement, this facility has implemented the following procedures:

- **Initial and any subsequent calibration of the CMS**  
Calibration and adjustment procedures are performed based on manufacturers specifications and operating experience (are presented in Appendix B).
- **Determination and adjustment of the calibration drift of the CMS**  
Calibration and adjustment procedures are performed based on manufacturers specifications and operating experience (are presented in Appendix B).
- **Preventive maintenance of the CMS, including spare parts inventory;**  
Preventative maintenance procedures are conducted based on standard industry practices and facility maintenance experience. Additional details regarding preventative maintenance are presented in the appendices.  
  
The spare parts inventory is maintained based on manufacturer recommendations and has been adjusted based on facility maintenance experience. Additional details regarding the spare parts inventory is presented in the appendices.
- **Data recording, calculations, and reporting;**

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Data recording is conducted as follows:

- Data is collected in a Distributive Control System (DCS) that is fed into the OSI PI system historian. Cirrus software is used to reduce and manage the data from the OSI PI system.

Calculations of the appropriate averages are conducted as follows:

- Averages are calculated based on the arithmetic mean.

Recordkeeping and reporting is addressed in section 10.

- **Accuracy audit procedures**

Performance evaluation procedures were addressed in Section 7.

- **Program of corrective action for a malfunctioning CMS**

Corrective action procedures are addressed in the SSM Plan. Resources that the facility uses for corrective actions for malfunctioning monitors include manufacturer guidelines and maintenance personnel training and experience.

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## 10. Recordkeeping and Reporting Procedures

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The requirements presented in this section of the Site-Specific Monitoring Plan apply to all of the CPMS presented in the tables which are presented in section 4.

Per 40 CFR 63.9632(b)(6), the Site-Specific Monitoring Plan must address the following:

*Ongoing recordkeeping and reporting procedures in accordance with the general requirements of 63.10(c), (e)(1), and (e)(2)(i).*

These sections of the regulation address the following:

**40 CFR 63.10(c):** *Additional recordkeeping requirements for sources with continuous monitoring systems. In addition to complying with the requirements specified in paragraphs (b)(1) and (b)(2) of this section, the owner or operator of an affected source required to install a CMS by a relevant standard shall maintain records for such source of—*

- (1) *All required CMS measurements (including monitoring data recorded during unavoidable CMS breakdowns and out-of-control periods);*
- (2) *[Reserved]*
- (3) *[Reserved]*
- (4) *[Reserved]*
- (5) *The date and time identifying each period during which the CMS was inoperative except for zero (low-level) and high-level checks;*
- (6) *The date and time identifying each period during which the CMS was out of control, as defined in §63.8(c)(7);*
- (7) *The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during startups, shutdowns, and malfunctions of the affected source;*

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- (8) *The specific identification (i.e., the date and time of commencement and completion) of each time period of excess emissions and parameter monitoring exceedances, as defined in the relevant standard(s), that occurs during periods other than startups, shutdowns, and malfunctions of the affected source;*
- (9) *[Reserved]*
- (10) *The nature and cause of any malfunction (if known);*
- (11) *The corrective action taken or preventive measures adopted;*
- (12) *The nature of the repairs or adjustments to the CMS that was inoperative or out of control;*
- (13) *The total process operating time during the reporting period; and*
- (14) *All procedures that are part of a quality control program developed and implemented for CMS under §63.8(d).*
- (15) *In order to satisfy the requirements of paragraphs (c)(10) through (c)(12) of this section and to avoid duplicative recordkeeping efforts, the owner or operator may use the affected source's startup, shutdown, and malfunction plan or records kept to satisfy the recordkeeping requirements of the startup, shutdown, and malfunction plan specified in §63.6(e), provided that such plan and records adequately address the requirements of paragraphs (c)(10) through (c)(12).*

**40 CFR 63.10(e)(1):** *Additional reporting requirements for sources with continuous monitoring systems – General. When more than one CEMS is used to measure the emissions from one affected source (e.g., multiple breechings, multiple outlets), the owner or operator shall report the results as required for each CEMS.*

**40 CFR 63.10(e)(2)(i):** *Reporting results of continuous monitoring system performance evaluations. (i) The owner or operator of an affected source required to install a CMS by a relevant standard shall furnish the Administrator a copy of a written report of the results of the CMS performance evaluation, as required under §63.8(e), simultaneously with the results of the performance test required under §63.7, unless otherwise specified in the relevant standard.*

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In order to comply with this requirement the facility maintains the following records for a minimum of 5 years:

- All required monitoring data. This includes monitoring data from the beginning of startup until the end of shutdown, as defined in the SSM Plan. This includes monitoring data recorded during unavoidable CPMS breakdowns and out-of-control periods. Records are maintained as follows:
  - Records are maintained electronically in the Cirrus System
- The date and time identifying each period during which the monitoring system was inoperative. These records are maintained electronically in the Cirrus System.
- The date and time identifying each period during which the CMS was out of control, as defined in Section 8. These records are maintained electronically in the Cirrus System.
- The specific identification (i.e., the date and time of commencement and completion) of each period of excess emissions and parametric monitoring exceedences, as defined in the *SSM Plan*. The recordkeeping requirements for these incidents are presented in the SSM Plan for this facility.
- The nature and cause of each malfunction (if known), as defined in the *SSM Plan*. The recordkeeping requirements for these incidents are presented in the *SSM Plan* for this facility.
- The corrective action taken or preventive measures adopted as defined in the *SSM Plan*. The recordkeeping requirements for these incidents are presented in the *SSM Plan* for this facility.
- The nature of the repairs or adjustments to the CMS that was inoperative or out of control. Records are maintained as follows:
  - Records are maintained electronically in the Cirrus System
  - Maintenance records are kept in the Ellipse System.
- The total process operating time during the reporting period. This information is maintained as required by the SSM Plan for this facility.



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- All procedures that are part of a quality control program developed and implemented for the monitoring equipment. This document is intended to present this required information.

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## 11. Corrective Action Procedures

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The requirements presented in this section of the Site-Specific Monitoring Plan apply to all of the CPMS presented in the section 4 tables.

Per 40 CFR 63.9632(b)(7), the Site-Specific Monitoring Plan must address the following:

*Corrective action procedures that you will follow in the event an air pollution control device, except for a baghouse, exceeds an established operating limit as established in 63.9600(b)(3).*

In order to comply with this requirement, the facility has developed and implemented a Startup, Shutdown, and Malfunction (SSM) Plan for the affected equipment. Additional details regarding corrective action procedures can be found in the *SSM Plan*.

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## **12. Revisions of the Site-Specific Monitoring Plan**

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Revisions of the Site Specific monitoring plan is the responsibility of the Environmental Department.

### **12.1 Revisions Required by the Permitting Authority**

As stated in 40 CFR 63.9632(b), the facility must develop this plan and make it available for inspection by the permitting authority. If the permitting authority inspects the plan and determines that any portion of the plan is not adequate, the facility will address the issues as agreed upon with the permitting authority.

### **12.2 Revisions Initiated by Cleveland-Cliffs**

This facility may periodically revise this plan, as necessary, to satisfy the requirements of the regulation or to reflect changes in equipment or procedures at the affected source. In order to make these changes, the facility will use the following procedure:

- The facility will develop the revised plan and can implement the changes, as appropriate, upon completion of the revisions.
- The facility will maintain copies of the previous versions of this plan for a minimum of 5 years.
- Major changes to the plan will be noted in the SSM Plan semiannual report, as required by the SSM Plan.

Original Plan November 2006  
Minor Revisions March 2012  
Minor Revisions July 2019

*Appendix A*

*Site Specific Monitoring Plan Summary*

Control Equipment Type	Measurement Type	Instrument Type	Calibration frequency (Section 7)	Calibration Acceptance Criteria (Section 7)	Spare Parts (Sections 8 + 9)	Definition of Out-of-Control (Section 8)	Preventative Maintenance (Section 9)
Wet Scrubbers	Flow Meters	Yamatake Mag-flow meter	As required by Mfg.	NA	Spare flow meters	The data is considered “out of control” for this equipment if the flow rate is out of the normal range.	NA
Wet Scrubbers	Pressure Drop Indicators	Rosemount Differential Pressure Transmitter, 0-25 in H <sub>2</sub> O	As required by Mfg.	NA	Spare Pressure Transmitter	The data is considered “out of control” for this equipment if the pressure drop is below 0 in. H <sub>2</sub> O or above 24 in. H <sub>2</sub> O.	Clean transmitter lines
Dry ESPs	Opacity Monitors	Sick/Maihak OMD 41 Opacity Monitor	Daily (Zero and Span)	CD less than 4x	Opacity monitor purge air blower filters	The data is considered “out of control” if the zero, or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification.	Clean Optical Boundary lenses and change filters on the purge air unit
Indurating Furnaces	GCP Monitoring Parameters	GCP Equipment	Scheduled with major repairs (appx. 12-18 months)	NA	See Ellipse	NA	Instrumentation Inspection

## *Appendix B*

### *Calibration Procedures and Adjustment*

**JOB DESCRIPTION:**

Instrumentation Dynamic

MACT Compliance D/P Transmitter Calibration.

**PURPOSE:**

To insure that MACT Compliance Instrumentation components are calibrated on a regular basis.

**SAFETY:**

Take 5, perform pre-shift inspection and be aware of your surroundings.

Lockout/isolate appropriate valves during transmitter calibration.

**GENERAL:**

Record "AS FOUND" and "AS LEFT" data so we have a history of equipment condition. Insure test equipment has been calibrated within the past 1-year period or compared to an instrument that has been calibrated to NIST standards within 1 year.

Reference Rosemount 3051 Transmitter manual 00809-0100-4001 as necessary.

TOOLS:

- Standard hand tools.
- Transmission, multimeter, hand-held pump.
- If new transmitters are needed, see APL for stock code.

PROCEDURE:

1. Select proper pressure pump/transducers for the process

ranges listed below:

- a) Scrubber Name

0-25.0" H<sub>2</sub>O = 4-20 Ma.

2. Isolate the process from the transmitters. Note that

process lines may need to be blown down to reduce

scaling. Insure that lines do not contribute to the

ingress of condensation due to mounting issues.

Init: \_\_\_\_\_

3. Check calibration of units - If adjustments need to be

made, write a work order reflecting this and apply

appropriate coding for "Results of PM".

- a) Scrubber Name

As Found: \_\_\_\_\_ As Left: \_\_\_\_\_



4. Return all valves, and pressure connections back to their operational ready positions. Insure that Loop Identification Tags are attached to each transmitter. Close work order to record the date/time you performed calibration activities.

Init:\_\_\_\_\_

5. Notify the Electrical RBM Engineer if any changes are required for this procedure.

6. Write work orders and document any anomalies found for this equipment.

END OF DOCUMENT