Dry Injection System Compliance Assurance Monitoring Plan for Sulfur Dioxide

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Compliance Assurance Monitoring Requirements

Pursuant to Rule 62-213.440(1)(b)1.a., F.A.C., the CAM plans that are included in this appendix contain the monitoring requirements necessary to satisfy 40 CFR 64. Conditions 1. – 17. are generic conditions applicable to all emissions units that are subject to the CAM requirements. Specific requirements related to each emissions unit are contained in the attached tables, as submitted by the applicant and approved by the Department.

40 CFR 64.6 Approval of Monitoring.

1. The attached CAM plan(s), as submitted by the applicant, is/are approved for the purposes of satisfying the requirements of 40 CFR 64.3.
[40 CFR 64.6(a)]

2. The attached CAM plan(s) include the following information:
(i) The indicator(s) to be monitored (such as temperature, pressure drop, emissions, or similar parameter);
(ii) The means or device to be used to measure the indicator(s) (such as temperature measurement device, visual observation, or CEMS); and
(iii) The performance requirements established to satisfy 40 CFR 64.3(b) or (d), as applicable.
[40 CFR 64.6(c)(1)]

3. The attached CAM plan(s) describe the means by which the owner or operator will define an exceedance of the permitted limits or an excursion from the stated indicator ranges and averaging periods for purposes of responding to (see **CAM Conditions 5. - 14.)** and reporting exceedances or excursions (see **CAM Conditions 15. – 16.**).
[40 CFR 64.6(c)(2)]

4. The permittee is required to conduct the monitoring specified in the attached CAM plan(s) and shall fulfill the obligations specified in the conditions below (see **CAM Conditions 5. - 16.**).
[40 CFR 64.6(c)(3)]

40 CFR 64.7 Operation of Approved Monitoring.

5. Commencement of operation. The owner or operator shall conduct the monitoring required under this appendix upon the effective date of this Title V permit.
[40 CFR 64.7(a)]

6. Proper maintenance. At all times, the owner or operator shall maintain the monitoring, including but not limited to, maintaining necessary parts for routine repairs of the monitoring equipment.

[40 CFR 64.7(b)]

7. Continued operation. Except for, as applicable, monitoring malfunctions, associated repairs, and required quality assurance or control activities (including, as applicable, calibration checks and required zero and span adjustments), the owner or operator shall conduct all monitoring in continuous operation (or shall collect data at all required intervals) at all times that the pollutant-specific emissions unit is operating. Data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities shall not be used for purposes of this part, including data averages and calculations, or fulfilling a minimum data availability requirement, if applicable. The owner or operator shall use all the data collected during all other periods in assessing the operation of the control device and associated control system. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.

[40 CFR 64.7(c)]

8. Response to excursions or exceedances.

a. Upon detecting an excursion or exceedance, the owner or operator shall restore operation of the pollutant-specific emissions unit (including the control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions. The response shall include minimizing the period of any startup, shutdown or malfunction and taking any necessary corrective actions to restore normal operation and prevent the likely recurrence of the cause of an excursion or exceedance (other than those caused by excused startup or shutdown conditions, if allowed by this permit). Such actions may include initial inspection and evaluation, recording that operations returned to normal without operator action (such as through response by a computerized distribution control system), or any necessary follow-up actions to return operation to within the indicator range, designated condition, or below the applicable emission limitation or standard, as applicable.

b. Determination of whether the owner or operator has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include but is not limited to, monitoring results, review of operation and maintenance procedures and records, and inspection of the control device, associated capture system, and the process.

[40 CFR 64.7(d)(1) & (2)]

9. Documentation of need for improved monitoring. If the owner or operator identifies a failure to achieve compliance with an emission limitation or standard for which the approved monitoring did not provide an indication of an excursion or exceedance while providing valid data, or the results of compliance or performance testing document a need to modify the existing indicator ranges or designated conditions, the owner or operator shall promptly notify the permitting authority and, if necessary, submit a proposed modification to the Title V permit to address the necessary monitoring changes. Such a modification may include, but is not limited to, reestablishing indicator ranges or designated conditions, modifying the frequency of conducting monitoring and collecting data, or the monitoring of additional parameters.

[40 CFR 64.7(e)]

40 CFR 64.8 Quality Improvement Plan (QIP) Requirements.

10. Based on the results of a determination made under **CAM Condition 8.b.,** above, the permitting authority may require the owner or operator to develop and implement a QIP. Consistent with **CAM Condition 4.**, an accumulation of exceedances or excursions exceeding 5 percent duration of a pollutant-specific emissions unit's operating time for a reporting period, may require the implementation of a QIP. The threshold may be set at a higher or lower percent or may rely on other criteria for purposes of indicating whether a pollutant-specific emissions unit is being maintained and operated in a manner consistent with good air pollution control practices.

[40 CFR 64.8(a)]

11. Elements of a QIP:

a. The owner or operator shall maintain a written QIP, if required, and have it available for inspection.

b. The plan initially shall include procedures for evaluating the control performance problems and, based on the results of the evaluation procedures, the owner or operator shall modify the plan to include procedures for conducting one or more of the following actions, as appropriate:

(i) Improved preventive maintenance practices.
(ii) Process operation changes.
(iii) Appropriate improvements to control methods.
(iv) Other steps appropriate to correct control performance.
(v) More frequent or improved monitoring (only in conjunction with one or more steps under **CAM Condition 11.b(i)** through **(iv)**, above).

[40 CFR 64.8(b)]

12. If a QIP is required, the owner or operator shall develop and implement a QIP as expeditiously as practicable and shall notify the permitting authority if the period for completing the improvements

contained in the QIP exceeds 180 days from the date on which the need to implement the QIP was determined.

[40 CFR 64.8(c)]

13. Following implementation of a QIP, upon any subsequent determination pursuant to **CAM Condition 8.b.**, the permitting authority may require that an owner or operator make reasonable changes to the QIP if the QIP is found to have:

a. Failed to address the cause of the control device performance problems; or

b. Failed to provide adequate procedures for correcting control device performance problems as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

[40 CFR 64.8(d)]

14. Implementation of a QIP shall not excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act.

[40 CFR 64.8(e)]

40 CFR 64.9 Reporting And Recordkeeping Requirements.

15. General reporting requirements.

a. Commencing from the effective date of this permit, the owner or operator shall submit monitoring reports semi-annually to the permitting authority in accordance with Rule 62-213.440(1)(b)3.a., F.A.C.

b. A report for monitoring under this part shall include, at a minimum, the information required under Rule 62-213.440(1)(b)3.a., F.A.C., and the following information, as applicable:

(i) Summary information on the number, duration and cause (including unknown cause, if applicable) of excursions or exceedances, as applicable, and the corrective actions taken;

(ii) Summary information on the number, duration and cause (including unknown cause, if applicable) for monitor downtime incidents (other than downtime associated with zero and span or other daily calibration checks, if applicable); and

(iii) A description of the actions taken to implement a QIP during the reporting period as specified in **CAM Conditions 10.** through **14.** Upon completion of a QIP, the owner or operator shall include in the next summary report documentation that the implementation of the plan has been completed and reduced the likelihood of similar levels of excursions or exceedances occurring.

[40 CFR 64.9(a)]

16. General recordkeeping requirements.

a. The owner or operator shall comply with the recordkeeping requirements specified in Rule 62-213.440(1)(b)2., F.A.C. The owner or operator shall maintain records of monitoring data, monitor performance data, corrective actions taken, any written quality improvement plan required pursuant to **CAM Conditions 10.** through **14.** and any activities undertaken to implement a quality improvement plan, and other supporting information required to be maintained under this part (such as data used to document the adequacy of monitoring, or records of monitoring maintenance or corrective actions).

b. Instead of paper records, the owner or operator may maintain records on alternative media, such as microfilm, computer files, magnetic tape disks, or microfiche, provided that the use of such alternative media allows for expeditious inspection and review, and does not conflict with other applicable recordkeeping requirements.

[40 CFR 64.9(b)]

40 CFR 64.10 Savings Provisions.

17. It should be noted that nothing in this appendix shall:

a. Excuse the owner or operator of a source from compliance with any existing emission limitation or standard, or any existing monitoring, testing, reporting or recordkeeping requirement that may apply under federal, state, or local law, or any other applicable requirements under the Act. The requirements of this appendix shall not be used to justify the approval of monitoring less stringent than the monitoring which is required under separate legal authority and are not intended to establish minimum requirements for the purpose of determining the monitoring to be imposed under separate authority under the Act, including monitoring in permits issued pursuant to title I of the Act. The purpose of this part is to require, as part of the issuance of a permit under Title V of the Act, improved or new monitoring at those emissions units where monitoring requirements do not exist or are inadequate to meet the requirements of this part.

b. Restrict or abrogate the authority of the Administrator or the permitting authority to impose additional or more stringent monitoring, recordkeeping, testing, or reporting requirements on any owner or operator of a source under any provision of the Act, including but not limited to sections 114(a)(1) and 504(b), or state law, as applicable.

c. Restrict or abrogate the authority of the Administrator or permitting authority to take any enforcement action under the Act for any violation of an applicable requirement or of any person to take action under section 304 of the Act.

[40 CFR 64.10]

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I. Introduction

On January 16, 2009, EnviroFocus Technologies, LLC (EFT) was issued a construction permit (Permit No. 0570057-021-AC) for enclosure of the Blast Furnace Area, an increase in Blast Furnace Production Rates and the installation of a Dry Injection System at its Secondary Lead Smelting Facility. EFT is located at 6505 Jewel Avenue, Tampa, Florida.

The Dry Injection Scrubber System is used as an add-on control for the reduction of sulfur dioxide (SO_2) from the Blast Furnace Exhaust. Because the pre-controlled SO_2 potential emissions from the Blast Furnace exceed 100 tons per year, the Dry Injection System is subject to the Compliance Assurance Monitoring (CAM) regulations promulgated in 40 CFR 64. To comply with the CAM standard, EFT is submitting this CAM plan to the Environmental Protection Commission of Hillsborough County for monitoring SO_2 emissions from the Blast Furnace Exhaust. EFT already has an existing CAM plan for monitoring carbon monoxide (CO) emissions for the Blast Furnace which is attached to the Title V permit as a separate document.

II. Sodium Bicarbonate Injection System for SO_2 Control

A. Background

1) Emission Unit

Description:	Secondary Lead Smelter Blast Furnace
Identification:	E.U. ID No. 001 Blast Furnace
Stack Designation:	Blast Furnace Stack
Facility:	EnviroFocus Technologies, LLC, Tampa, Fl

2) Applicable Regulation, Emission Limit and Monitoring Requirements

Regulation No:	Title V Permit No. 0570057-022-AV
Regulated Pollutant:	Sulfur Dioxide (SO2)
Emission Limits:	886 tons per year from blast furnace
	55.4 pounds per ton of lead produced
Monitoring Requirement:	SO_2 emissions

3) Control Technology

Dry Sorbent Injection

B. Monitoring Approach

The key elements of the monitoring approach include the elements to be monitored, the indicated ranges, and the performance criteria. These are presented in **Table 1**.

C. Data Availability

The anticipated minimum data availability for each semi-annual reporting period, defined as the number of hours for which monitoring data will be available divided by the number of hours which the process operates (times 100), will be :

SO_2 mass emissions: 99%

D. SO_2 Monitoring Approach Justification

1) Background

EFT employs a Dry Sorbent Injection System for control of SO_2 emissions from the Blast Furnace (EU001).

2) Rationale for Selection of Performance Indicators

Based on a 1: 1 molar ratio, for every pound of SO2 needing to be removed from the stack, 2.625 pounds of sodium bicarbonate is injected. The Allen Bradley variable frequency drive turns a feed auger in the sorbent injection system when it receives a signal from a programmable logic controller, called the PLC unit. The PLC unit receives SO2 emission rate information from the CEM located in the stack and production rate information from the product scale. The PLC reports the SO2 emission rate as an hourly average and a daily average. The operators will respond to excursions defined as SO2 emissions above 55.4 lb SO2/ton of lead produced, based on a 30-day average. An exceedance of the SO2 emission rate is defined as any SO2 emissions above the 12-month rolling total limit of 886 ton/yr. In cases of excursion, operators check to see if the injection system has run out of sodium bicarbonate and replenish as needed. If the system has plenty of bicarbonate and the SO2 levels are still exceeding the excursion level, operators call maintenance to troubleshoot the system.

3) Rationale for Selection of Indicator Ranges

The lb SO2/ton of lead produced parameter was selected in order to monitor operations of the injection system on a monthly basis and to ensure the 12-month rolling SO2 total is not exceeded. The range is established to allow operators to take actions as necessary to avoid exceedance of the annual SO2 limit.

E. Quality Improvement Plan (QIP)

Should problems arise whereby the EPC determines that EFT has failed to use acceptable procedures in responding to an excursion, EFT will develop and implement a quality improvement plan (QIP) within 60 days of being notified of any concerns. The QIP will address any problems noted by EPC as well as any potential concerns that may have been noted by EFT personnel.

Table 1 - SO_2 Monitoring Approach

	Indicator 1	**Indicator 2**
I. Indicator Approach	Direct measurement of pollutant. CEMS SO_2 mass emissions are being measured to indicate the performance of the injection system.	Lead production rate.
II. Indicator Range	$\leq$ 55.4 lb/ton of lead produced (30-day average) Excursions are any SO2 emissions greater than 55.4 lb SO2/ton of lead produced based on a 30-day average. Facility personal will take actions to bring the SO2 average levels below 55.4 lb/ton when an excursion occurs. Exceedances are any value above the 12-month SO2 rolling annual total limit of 886 ton/yr.	0 to < 4 ton/hr lead production rate automatically calculated PLC based on feedback from the product scale.
III. Performance Criteria		

A. Data Representativeness	Monitoring SO_2 emissions in the stack.	Production rates are measured by the product scale.
B. Verification of Operational Status	The information from the CEM is displayed at the PLC. The operation of the CEM is verified at least once/day.	The information from the scale is displayed at the PLC. The operation of Scale is verified at least once/day.
C. QA/QC	Separate computer systems connected to the CEMS computer monitors the current reading, daily reading and triggers an alarm if faults are detected on the CEM computer system. The SO2 CEMS calibrates daily against cal gas ranging from 1250 to 1500 ppm SO2. A service technician is on-site weekly to check the daily calibrations and troubleshoots any calibration issues.	Scale is calibrated, operated and maintained in accordance with manufacturer's specifications.
D. Frequency **Collection Procedure** **Averaging Period**	Every 15 milliseconds. SO2 is measured and a signal is sent from the CEM to the PLC. One-hour averages, 3-hour averages, and annual averages.	As produced. At the scales the product is weighed and the data is sent to the PLC. Continuously updated.