APPENDIX CAM

Compliance Assurance Monitoring Requirements

For

Ridge Generating Station

Emission Unit 001 – Steam Boiler with Baghouse Particulate Matter (PM) Control Device

Title V Permit 1050216-014-AV

APPENDIX CAM

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. - 9.)** and reporting exceedances or excursions (see **CAM Conditions 10. – 14.**).
[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. - 17.**).
[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)]

<u>40 CFR 64.8 Quality Improvement Plan (QIP) Requirements.</u>

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. <u>Elements of a QIP</u>:
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]

Emissions Unit – 001

Boiler with Baghouse PM Control Device

Monitoring Approach

	Indicator No. 1	Indicator No. 2
I. Indicator	Opacity via a COMS	Baghouse pressure differential (PD)
Measurement Approach	40 CFR 60, Appendix B, Performance Specification 1 (PS-1).	Direct transmitter readings.
II. Indicator Range	An excursion is defined as an opacity (1-hour block average) greater than 3.0% for any fuel firing mode, excluding startup, shutdown and malfunction. An excursion will trigger an evaluation of operation of the boiler and baghouse. Corrective action will be taken as necessary. Any excursion will trigger recordkeeping and reporting requirement.	An excursion is defined as any 30-minute PD readings of lower than 1.0" of H_2O or any 2-hour block average PD higher than 12" of H_2O excluding startup, shutdown, and malfunction periods. An excursion will trigger an evaluation of operation of the boiler and baghouse. Corrective action will be taken as necessary. Any excursion will trigger recordkeeping and reporting requirement.
III. Performance Criteria		
Data Representativeness	Opacity is monitored in the duct work prior to the stack. The monitoring location meets the PS-1 monitoring location criteria to provide representative measurements.	The transmitters are calibrated twice a year.
Verification of Operation Status	Not Applicable.	Not Applicable.
QA/QC Practices and Criteria	The COMS is automatically calibrated every 24 hours. Calibration information is recorded through a data handling and acquisition system (DHAS). A neutral density filter test is performed quarterly as well as preventative maintenance items (clean optics, replace filters etc.) as prescribed by the manufacturer.	The transmitters are calibrated twice a year.
Monitoring Frequency	Opacity is measured continuously.	Differential pressure is measured continuously.
Data Collection Procedures	Six-minute and hourly averages will be recorded by the DHAS and displayed on the screen in the control room. Daily reports with all six-minute and hourly averages are generated.	Continuously monitored by Bailey System. Alarm will sound when PD is out of range. A separate log (*see CAM Excursion Log)* will be taken per incident to document the excursion.
Averaging Period	Opacity hourly block average will be recorded in addition to six-minute block averages.	Not Applicable.

Justification

a. Emission Unit and CAM Applicability Background

Emission Unit (EU) No. 001 is a multi-fuel steam boiler. The boiler burns a mixture of waste wood, yard waste, waste tires, and landfill gas (LFG). Particulate matter (PM/PM_{10}) emissions from the boiler are controlled by a high temperature main baghouse. The baghouse exhausts to a 10 foot diameter main stack with a stack height of 325 feet. This stack is equipped with a continuous opacity monitoring system (COMS).

The boiler has a PM/PM_{10} emission limitation and potential PM/PM_{10} emissions from this emission unit prior to the baghouse control device are greater than 100 tons/year. Therefore the requirements of 40 CFR 64 – Compliance Assurance monitoring apply to this baghouse PM/PM_{10} emission control device. A CAM Plan was previously established for this baghouse in Title V Operation Permit 1050216-008-AV (and subsequent Title V operation permit revisions).

b. Rationale for selection of Performance Indicators

When the baghouse is operating properly, there will be very low visible emissions from the exhaust. An increase in monitored opacity indicates reduced performance of the particulate matter control device. Therefore opacity, as monitored by the continuous opacity monitoring system (COMS), is used as a performance indicator, as required by 40 CFR 64.3(d) Compliance Assurance Monitoring - Monitoring Design Criteria - *Special design criteria for the use of continuous emission, opacity or predictive monitoring systems*).

Pressure drop was selected as a performance indicator because it is indicative of proper operation and maintenance of the baghouse in a manner necessary to comply with the particulate matter and visible emissions standards. Any decrease in pressure drop, approaching the lower limits of the stated range, indicates potential for reduced performance of the particulate matter control device. Any increase in pressure drop to high levels creates the potential for damage to the baghouse which could negatively affect its performance.

c. Rationale for Selection of Indicator Level

1. Primary Indicator – Continuous Opacity Monitoring System (COMS)
   The opacity limit for this emissions unit is 10% opacity. Based on operating experience, normal operation of the emissions unit will result in very low visible emissions (0-2% opacity) as measured by the COMS on the emission unit exhaust stack. A sudden and/or sustained increase in opacity, as measured by the COMS, could indicate a failure in one or more of the baghouse compartments. The selected indicator range (for other than startup or shutdown periods) was requested at, and remains set at, COMS readings of above 3% opacity for any one-hour block average.

2. Secondary Indicator – Pressure Drop Across Baghouse
   The normal pressure drop range of the fabric filter baghouse is between 3 and 10 inches of water. During startup the pressure drop can be below 2 inches of water. Review of fabric filter pressure drops plotted with corresponding opacity levels from the COMS demonstrate that baghouse pressure drop can be less than 2 inches of water while opacity is less than 1% (the visible emissions (VE) limit for the boiler exhaust stack is 10% opacity). Based on this l the lower limit of the CAM indicator range was requested at, and remains set at, 1 inch of water. Setting the upper end of a baghouse pressure drop range is based on protection of the baghouse itself to avoid high pressure that could cause damage to the baghouse structure or ruptures of the bag filters.

The upper range was requested at, and remains set at, 12 inches of water. This is well below the manufacturers design maximum of 23 inches of water, and also the baghouse controls trip point of 15 inches of water.

When an excursion outside one of the indicator ranges occurs, corrective action will be initiated, beginning with an evaluation of the occurrence to determine the action required to correct the situation. All excursions will be documented and reported.