COMPLIANCE ASSURANCE MONITORING PLAN
(CAM PLAN)

for

Osceola Farms Company

Sugar Mill

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1.0 EMISSION UNITS REQUIRING CAM PLANS

1.1 CAM RULE APPLICABILITY DEFINITION

On June 15, 1998, the Florida Department of Environmental Protection (FDEP) issued a Title V Air Operation permit (Permit No. 0990019-003-AV) to Osceola Farms Company for operation of its Pahokee sugar mill. This permit expires on October 30, 2005. In order to renew the permit, a renewal application was submitted to the Florida Department of Environmental Protection (FDEP) on May 2, 2005.

As part of the Title V renewal application, a Compliance Assurance Monitoring (CAM) Plan must be submitted as required by regulations adopted in Title 40, Part 64 of the Code of Federal Regulations (40 CFR 64). This regulation has been incorporated by reference in Rule 62-204.800, Florida Administrative Code (F.A.C.), and implemented in Rule 62-213.440, F. A. C.

CAM plans are required for all Title V permitted emissions units using control devices to meet federally enforceable emission limits or standards, and that have pre-control emissions greater than "major" source thresholds. The term "major" is defined as in the Title V regulations (40 CFR 70), but applied on a source-by-source basis. For most non-hazardous pollutants, the major source threshold is 100 tons per year (TPY). For hazardous air pollutants (HAPs), the threshold is 10 TPY for an individual HAP, and 25 TPY for total HAPs combined.

The CAM rules contain specific exemptions from applicability of CAM. Specifically exempted from CAM are emission limitations or standards promulgated under the following: Stratospheric Ozone Regulations contained in 40 CFR 82; the Acid Rain Program contained in 40 CFR 72; or those that are part of an emissions cap included in the Title V Permit. Also exempt are emission limitations or standards proposed after November 15, 1990, under the following: New Source Performance Standards (NSPS) contained in 40 CFR 60; and National Emission Standards for Hazardous Air Pollutants (NESHAPs) promulgated in 40 CFR 63. These limitations and standards have monitoring requirements equivalent to CAM included as part of the standard.

Inherent process equipment (IPE), or equipment that may have the effect of controlling emissions but is installed for the primary purpose of product recovery or raw material recovery, is also exempt from CAM (40 CFR 64.1). In addition, CAM does not apply to any emission limit or standard for which

the Title V permit specifies a continuous compliance determination method [40 CFR 64.2(b)(1)(vi)], provided that the method does not include an assumed control device emission reduction factor that could be affected by the actual operation and maintenance of the control device.

1.2 EMISSIONS UNITS REQUIRING CAM PLANS

A review of emission units at the Osceola Farms sugar mill was conducted to determine the applicability of the CAM rule. This evaluation was conducted for each emissions unit and regulated pollutant. First, the existence of a "control device" as defined by the CAM Rule was determined on a source-by-source basis for each pollutant. Those emissions units without control devices were eliminated from further consideration. The remaining emissions units were then evaluated on a pollutant-by-pollutant basis to determine if a control device was used to meet a federally enforceable emission limit or standard.

Each pollutant without a federally enforceable emission limit or standard, emitted from a given emissions unit, was eliminated from further consideration. Uncontrolled annual emissions were then calculated for each remaining source-pollutant combination. If uncontrolled emissions for a pollutant emitted from a given emissions unit were below major source thresholds, as defined by the CAM rule, that pollutant was not further considered. Specific exemptions to the applicability of the CAM rule were also considered in this evaluation.

A summary of the results of this evaluation process is presented in Table 1. Each pollutant-specific emissions unit at the Osceola Farms sugar mill, and its applicability to CAM, is described in the following sections.

1.2.1 BOILER NO. 2 (EU 002)

Boiler No. 2 is fired by carbonaceous fuel and No. 6 fuel oil. Boiler No. 2 has a maximum capacity of 140,000 pounds per hour (lb/hr) steam (24-hour block average). This corresponds to a maximum heat input rate of 280 million British thermal units per hour (MMBtu/hr) (24-hour average). The boiler can fire No. 6 fuel oil as a supplemental fuel at a maximum heat input rate of 82.5 MMBtu/hr.

Boiler No. 2 has federally enforceable emission limits for particulate matter (PM), nitrogen oxides (NO_x), sulfur dioxide (SO_2), and volatile organic compounds (VOC). Boiler No. 2 utilizes a spray impingement type wet scrubber to control PM emissions. As shown in Table 1, uncontrolled PM

emissions are greater than 100 TPY. Since a federally enforceable emission limit exists for PM, a control device is used to comply with the PM emission limit, and uncontrolled PM emissions are greater than 100 TPY, a CAM plan is required for PM for Boiler No. 2. Since there is no control device controlling NO_x, SO_2, or VOC emissions from Boiler No. 2, CAM plans for NO_x, SO_2, and VOC are not required.

1.2.2 BOILER NO. 3 (EU 003)

Boiler No. 3 is fired by carbonaceous fuel and No. 6 fuel oil. Boiler No. 3 has a maximum capacity of 150,000 lb/hr steam (1-hour average) and a maximum heat input rate of 292 MMBtu/hr (1-hour average). The boiler can fire No. 6 fuel oil as a supplemental fuel at a maximum heat input rate of 75.4 MMBtu/hr.

Boiler No. 3 has federally enforceable emission limits for PM, NO_x, SO_2, VOC, and carbon monoxide (CO). Boiler No. 3 utilizes a spray impingement type wet scrubber to control PM emissions. As shown in Table 1, uncontrolled PM emissions are greater than 100 TPY. Since a federally enforceable emission limit exists for PM, a control device is used to comply with the PM emission limit, and uncontrolled PM emissions are greater than 100 TPY, a CAM plan is required for PM for Boiler No. 3. Since there is no control device controlling NO_x, SO_2, VOC, or CO emissions from Boiler No. 3, CAM plans for NO_x, SO_2, VOC, and CO are not required.

1.2.3 BOILER NO. 4 (EU 004)

Boiler No. 4 is fired by carbonaceous fuel and No. 6 fuel oil. Boiler No. 4 has a maximum capacity of 140,000 lb/hr steam (24-hour average). This corresponds to a maximum heat input rate of 280 MMBtu/hr (24-hour average). The boiler can fire No. 6 fuel oil as a supplemental at a maximum heat input rate of 82.5 MMBtu/hr.

Boiler No. 4 has federally enforceable emission limits for PM, NO_x, SO_2, and VOC. Boiler No. 4 utilizes a spray impingement type wet scrubber to control PM emissions. As shown in Table 1, uncontrolled PM emissions are greater than 100 TPY. Since a federally enforceable emission limit exists for PM, a control device is used to comply with the PM emission limit, and uncontrolled PM emissions are greater than 100 TPY, a CAM plan is required for PM for Boiler No. 4. Since there is no control device controlling NO_x, SO_2, or VOC emissions from Boiler No. 4, CAM plans for NO_x, SO_2, and VOC are not required.

1.2.4 BOILER NO. 5 (EU 005)

Boiler No. 5 is fired by carbonaceous fuel and No. 6 fuel oil. Boiler No. 5 has a maximum capacity of 165,000 lb/hr steam (24-hour average). This corresponds to a maximum heat input rate of 330 MMBtu/hr (24-hour average). The boiler can also fire No. 6 fuel oil as a supplemental fuel at a maximum heat input rate of 82.5 MMBtu/hr.

Boiler No. 5 has federally enforceable emission limits for PM, NO_x, SO_2, and VOC. Boiler No. 5 utilizes a spray impingement type wet scrubber to control PM emissions. As shown in Table 1, uncontrolled PM emissions are greater than 100 TPY. Since a federally enforceable emission limit exists for PM, a control device is used to comply with the PM emission limit, and uncontrolled PM emissions are greater than 100 TPY, a CAM plan is required for PM for Boiler No. 5. Since there is no control device controlling NO_x, SO_2, or VOC emissions from Boiler No. 5, CAM plans for NO_x, SO_2, and VOC are not required.

1.2.5 BOILER NO. 6 (EU 006)

Boiler No. 6 is fired by carbonaceous fuel and No. 6 fuel oil. Boiler No. 6 has a maximum capacity of 195,000 lb/hr (1-hour average), corresponding to a maximum heat input rate of 379 MMBtu/hr (1-hour average). The boiler can fire No. 6 fuel oil as a supplemental fuel at a maximum heat input rate of 75.4 MMBtu/hr (1-hour average).

Boiler No. 6 has federally enforceable emission limits for PM, NO_x, SO_2, VOC, and CO. Boiler No. 6 utilizes a spray impingement type wet scrubber to control PM emissions. As shown in Table 1, uncontrolled PM emissions are greater than 100 TPY. Since a federally enforceable emission limit exists for PM, a control device is used to comply with the PM emission limit, and uncontrolled PM emissions are greater than 100 TPY, a CAM plan is required for PM for Boiler No. 6. Since there is no control device controlling NO_x, SO_2, VOC, or CO emissions from Boiler No. 6, CAM plans for NO_x, SO_2, VOC, and CO are not required.

Table 1. CAM Applicability Determination for Osceola Farms Company

Emission Source	Title V EU ID	Control Equipment	Pollutants with Emission Limits	Uncontrolled Emission Rate (TPY)	CAM Plan Required? (Yes/No)	Comments
Boiler No. 2	002	Wet Scrubber	PM	>100 TPY	**Yes**	PM uncontrolled emissions >100 TPY.
		None	NO_x	--	No	No control device.
		None	SO_2	--	No	No control device.
		None	VOC	--	No	No control device.
Boiler No. 3	003	Wet Scrubber	PM	>100 TPY	**Yes**	PM uncontrolled emissions >100 TPY.
		None	NO_x	--	No	No control device.
		None	CO	--	No	No control device.
		None	SO_2	--	No	No control device.
		None	VOC	--	No	No control device.
Boiler No. 4	004	Wet Scrubber	PM	>100 TPY	**Yes**	PM uncontrolled emissions >100 TPY.
		None	NO_x	--	No	No control device.
		None	SO_2	--	No	No control device.
		None	VOC	--	No	No control device.
Boiler No. 5	005	Wet Scrubber	PM	>100 TPY	**Yes**	PM uncontrolled emissions >100 TPY.
		None	NO_x	--	No	No control device.
		None	SO_2	--	No	No control device.
		None	VOC	--	No	No control device.
Boiler No. 6	006	Wet Scrubber	PM	>100 TPY	**Yes**	PM uncontrolled emissions >100 TPY.
		None	NO_x	--	No	No control device.
		None	CO	--	No	No control device.
		None	SO_2	--	No	No control device.
		None	VOC	--	No	No control device.

2.0 PARTICULATE MATTER EMISSIONS FROM BOILER NO. 2

2.1 EMISSIONS UNIT IDENTIFICATION

Boiler No. 2—EU ID 002

2.2 APPLICABLE REGULATIONS, EMISSIONS LIMITS, AND MONITORING REQUIREMENTS

Boiler No. 2 has a PM emission limit of 0.2 lb/MMBtu for carbonaceous fuel, plus 0.1 lb/MMBtu for No. 6 fuel oil [Rule 62-296.410(1)(b)2, F.A.C.]. The equivalent potential emissions are 56.0 lb/hr and 108.0 TPY for carbonaceous fuel and 8.3 lb/hr and 9.1 TPY for No. 6 fuel oil. The current visible emissions (VE) limit is 20-percent opacity, with an exception of up to 40-percent opacity for 2 minutes per hour (Permit No. 0990019-003-AV).

PM and VE compliance testing is required annually on Boiler No. 2. In addition, the total pressure drop across the scrubber, the scrubber water inlet pressure, and the scrubber water flow rate must be monitored and recorded at least once per 8-hour shift during each day of operation. The monitors must be properly maintained and functional at all times, except during instrument breakdown, calibration or repair (Permit No. 0990019-003-AV).

2.3 CONTROL TECHNOLOGY DESCRIPTION

PM emissions from Boiler No. 2 are controlled by two identical spray impingement type wet scrubbers operating in parallel. The exhaust gases from the boiler are split, with approximately one-half of the total flow going to one scrubber and one-half going to the other scrubber. Each scrubber exhausts through a separate stack.

The design pressure drop across each scrubber is 4 to 18 inches of water (H_2O). The design scrubber water inlet pressure to each scrubber is 40 to 60 pounds per square inch gauge (psig). The effectiveness of the wet scrubbers is evaluated with an annual stack test and visible emission measurements. A detailed description of the control equipment is included in the Title V renewal application (Attachment OF-EU1-I3).

2.4 MONITORING APPROACH

The monitoring approach is based on monitoring scrubber pressure drop and scrubber water flow rate. The monitoring approach is summarized in the table below:

Boiler No. 2	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across each scrubber.	Total water flow rate to both scrubbers.
Measurement Approach	Pressure drop is monitored with a manometer.	The scrubber water flow rate is measured using an orifice meter.
Indicator Range	An excursion is defined as any pressure drop below 8 in. H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any water flow rate below 720 gallons per minute (gpm). Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.1 inches of water gauge pressure.	The scrubber water orifice meter is located on the scrubber liquid supply line. The minimum accuracy of the device is ±25 gpm of water flow.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The manometer is maintained in accordance with the manufacturer's recommendations.	The orifice meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Scrubber water flow rate is monitored continuously.
Data Collection Procedures	Reading taken once every eight (8) hours.	Reading taken once every eight (8) hours.
Averaging Period	NA	NA

2.5 JUSTIFICATION

Both pressure drop across the scrubber and water flow rate to the scrubber are recognized parameters for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and therefore the efficiency of the scrubbing process. The water flow rate is a measure of sufficient fresh scrubbing liquid being supplied to the scrubber.

Water delivery pressure is currently monitored, which provides an indication of plugging of the spray nozzles in the scrubber. However, scrubber water flow rate provides a more direct indicator of adequate water supply to the scrubber. Therefore, water delivery pressure is not proposed as a parameter for CAM purposes.

Osceola Farms has sufficient historic test data necessary to establish indicator values for pressure drop and water flow rate to the Boiler No. 2 wet scrubbers. The test data correlating the parameters to the PM emission levels are presented in Figures 2-1 through 2-3. Supporting information is contained in Appendix B.

The proposed parameter minimum values are based on 90 percent of the minimum parameter values recorded during the 1-hour test runs, using the historic test data, when compliance was demonstrated with the PM limit. The calculation of the minimum parameter values are provided below:

Pressure Drop: Minimum test run value = 9 in. H_2O

Minimum parameter value = 9 x 0.9 = 8.1 in. H_2O

Water Flow Rate: Minimum test run value = 800 gpm

Minimum parameter value = 800 x 0.9 = 720 gpm

Wet scrubber operating parameter values below these minimum parameter values would be indicative of abnormal operation of the wet scrubbers. This methodology is consistent with the establishment of wet scrubber operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater maximum achievable control technology (MACT) standards. Boiler No. 2 will be subject to these standards beginning in September 2007.

The CAM regulations generally require that pollutant specific emissions units with the potential to emit greater than 100 TPY collect monitoring data at least four (4) times per hour. However, 40 CFR 63.3(b)(ii) allows the permitting authority to approve a reduced data collection frequency, if appropriate, based on the data collection mechanisms available for a particular parameter.

Osceola has been recording scrubber parameters once per 8-hour shift, according to the current Title V permit conditions. Although Osceola has continuous pressure drop and water flow rate monitors in place, the mechanisms are not in place to continuously record the pressure drop data and create

Figure 2-2. OFC Boiler No. 2 (North Scrubber)
PM vs. Pressure Drop

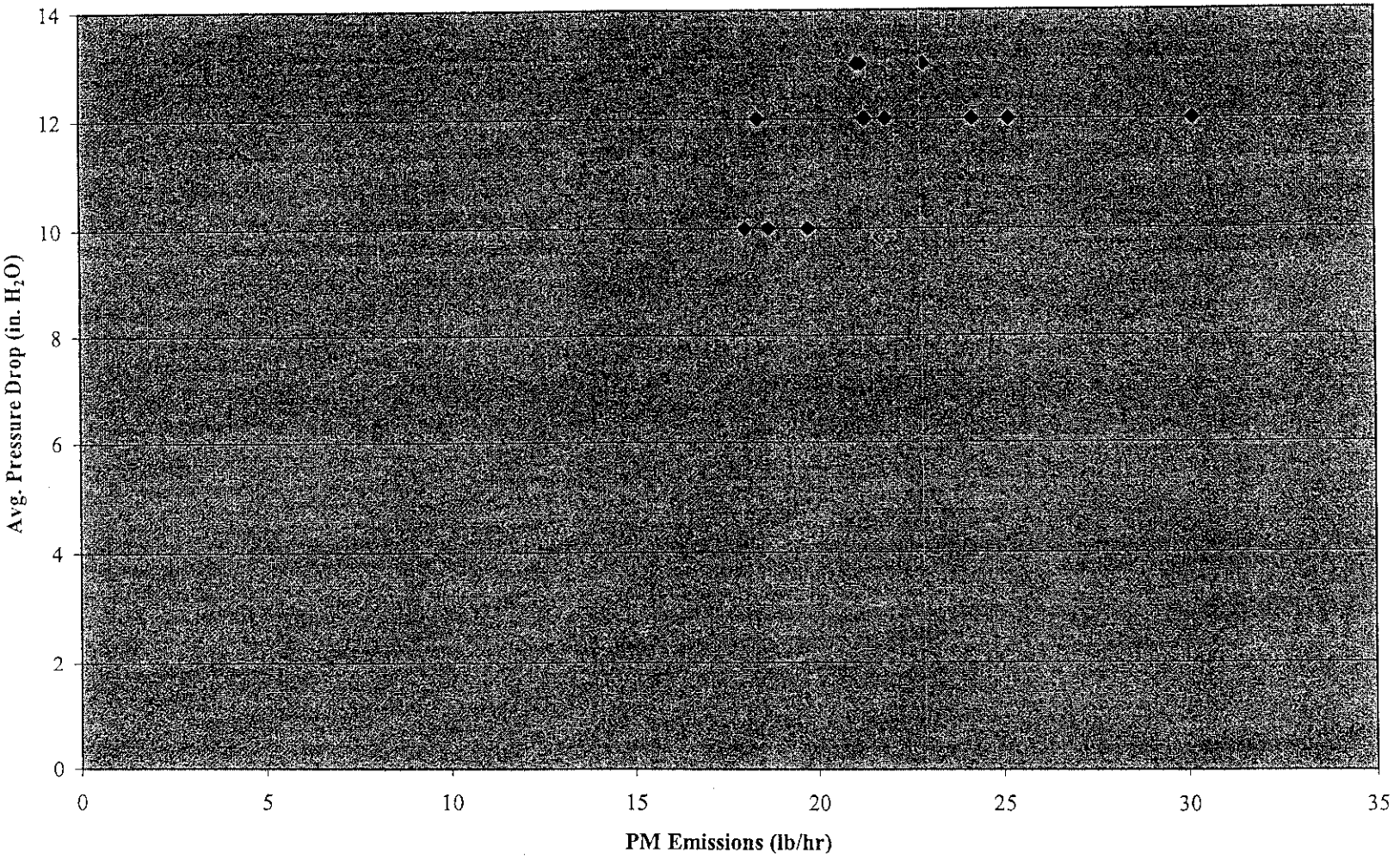
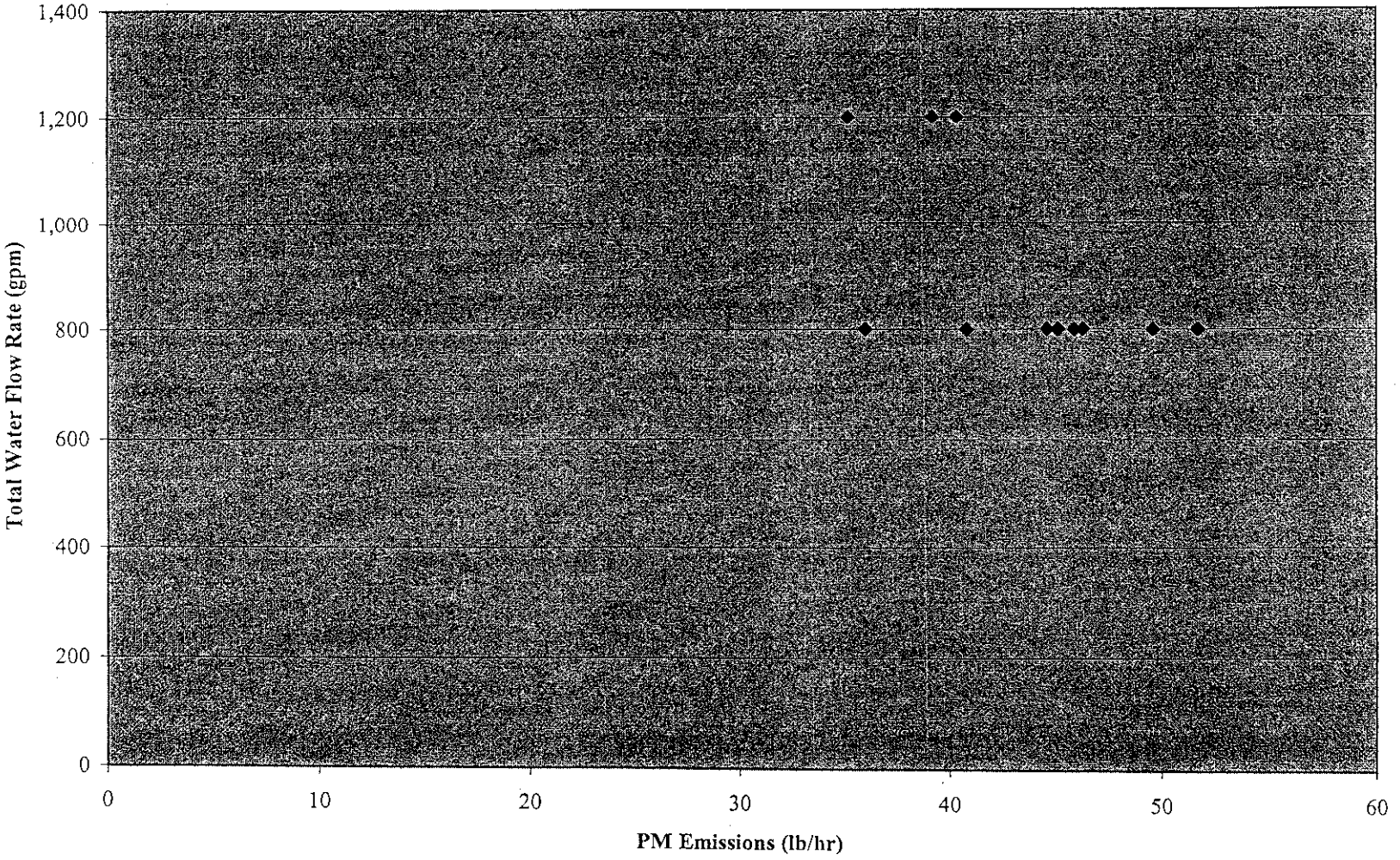


Figure 2-3. OFC Boiler No. 2
PM vs. Total Water Flow Rate



3.0 PARTICULATE MATTER EMISSIONS FROM BOILER NO. 3

3.1 EMISSIONS UNIT IDENTIFICATION

Boiler No. 3—EU ID 003

3.2 APPLICABLE REGULATIONS, EMISSIONS LIMITS, AND MONITORING REQUIREMENTS

Boiler No. 3 has a PM emission limit of 0.2 lb/MMBtu for carbonaceous fuel, plus 0.1 lb/MMBtu for No. 6 fuel oil [Rule 62-296.410(1)(b)2, F.A.C.]. The equivalent potential emissions are 58.4 lb/hr and 112.0 TPY for carbonaceous fuel and 7.5 lb/hr and 5.6 TPY for No. 6 fuel oil. The current VE limit is 20-percent opacity, with an exception of up to 40-percent opacity for 2 minutes per hour (Permit No. 0990019-003-AV).

PM and VE compliance testing is required annually on Boiler No. 3. In addition, the total pressure drop across the scrubber, the scrubber water inlet pressure, and the scrubber water flow rate must be monitored and recorded at least once per 8-hour shift during each day of operation. The monitors must be properly maintained and functional at all times, except during instrument breakdown, calibration, or repair (Permit No. 0990019-003-AV).

3.3 CONTROL TECHNOLOGY DESCRIPTION

PM emissions from Boiler No. 3 are controlled by one spray impingement type wet scrubber. The scrubber exhausts through a single stack. The design pressure drop across the scrubber is 4 to 18 inches H_2O. The design scrubber water inlet pressure is 30 to 60 psig. The design scrubber water flow rate is 300 gallons per minute (gpm), minimum. The effectiveness of the wet scrubbers is evaluated with an annual stack test and visible emission measurements. A detailed description of the control equipment is included in the Title V renewal application (Attachment OF-EU2-I3).

3.4 MONITORING APPROACH

The monitoring approach is based on monitoring scrubber pressure drop and scrubber water flow rate. The monitoring approach is summarized in the table below:

Boiler No. 3	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across scrubber.	Total water flow rate to scrubber.
Measurement Approach	Pressure drop is monitored with a manometer.	The scrubber water flow rate is measured using an orifice meter.
Indicator Range	An excursion is defined as any pressure drop below 10 in. H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any water flow rate below 626 gpm. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.1 inches of water gauge pressure.	The scrubber water orifice meter is located on the scrubber liquid supply line. The minimum accuracy of the device is ±25 gpm of water flow.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The manometer is maintained in accordance with the manufacturer's recommendations.	The orifice meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Scrubber water flow rate is monitored continuously.
Data Collection Procedures	Reading taken once every eight (8) hours.	Reading taken once every eight (8) hours.
Averaging Period	NA	NA

3.5 JUSTIFICATION

Both pressure drop across the scrubber and water flow rate to the scrubber are recognized parameters for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and therefore the efficiency of the scrubbing process. The water flow rate is a measure of sufficient fresh scrubbing liquid being supplied to the scrubber.

Water delivery pressure is currently monitored, which provides an indication of plugging of the spray nozzles in the scrubber. However, scrubber water flow rate provides a more direct indicator of adequate water supply to the scrubber. Therefore, water delivery pressure is not proposed as a parameter for CAM purposes.

Osceola Farms has sufficient historic test data necessary to establish indicator values for pressure drop and water flow rate to the Boiler No. 3 wet scrubber. The test data correlating the parameters to the PM emission levels are presented in Figures 3-1 and 3-2. Supporting information is contained in Appendix B.

The proposed parameter minimum values are based on 90 percent of the minimum parameter values recorded during the 1-hour test runs, using the historic test data, when compliance was demonstrated with the PM limit. The calculation of the minimum parameter values are provided below:

Pressure Drop: Minimum test run value = 11 in. H_2O

Minimum parameter value = 11 x 0.9 = 9.9 in. H_2O

Water Flow Rate: Minimum test run value = 696 gpm

Minimum parameter value = 696 x 0.9 = 626 gpm

Wet scrubber operating parameter values below these minimum parameter values would be indicative of abnormal operation of the wet scrubbers. This methodology is consistent with the establishment of wet scrubber operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater MACT standards. Boiler No. 3 will be subject to these standards beginning in September 2007.

The CAM regulations generally require that pollutant specific emissions units with the potential to emit greater than 100 TPY collect monitoring data at least four (4) times per hour. However, 40 CFR 63.3(b)(ii) allows the permitting authority to approve a reduced data collection frequency, if appropriate, based on the data collection mechanisms available for a particular parameter.

Osceola has been recording scrubber parameters once per 8-hour shift, according to the current Title V permit conditions. Although Osceola has continuous pressure drop and water flow rate monitors in place, the mechanisms are not in place to continuously record the pressure drop data and create hourly averages. In addition, the mechanisms are not in place to create hourly averages of the water

flow rate. It is therefore requested that the current recording frequency of once per 8-hour shift be retained for both pressure drop and water flow rate.

Based on collecting data once per 8-hour shift, an excursion would occur whenever any individual reading is below the minimum parameter value. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence, to determine the action required (if any) to correct the situation. All excursions will be documented and reported.

Figure 3-1. OFC Boiler No. 3
PM vs. Pressure Drop

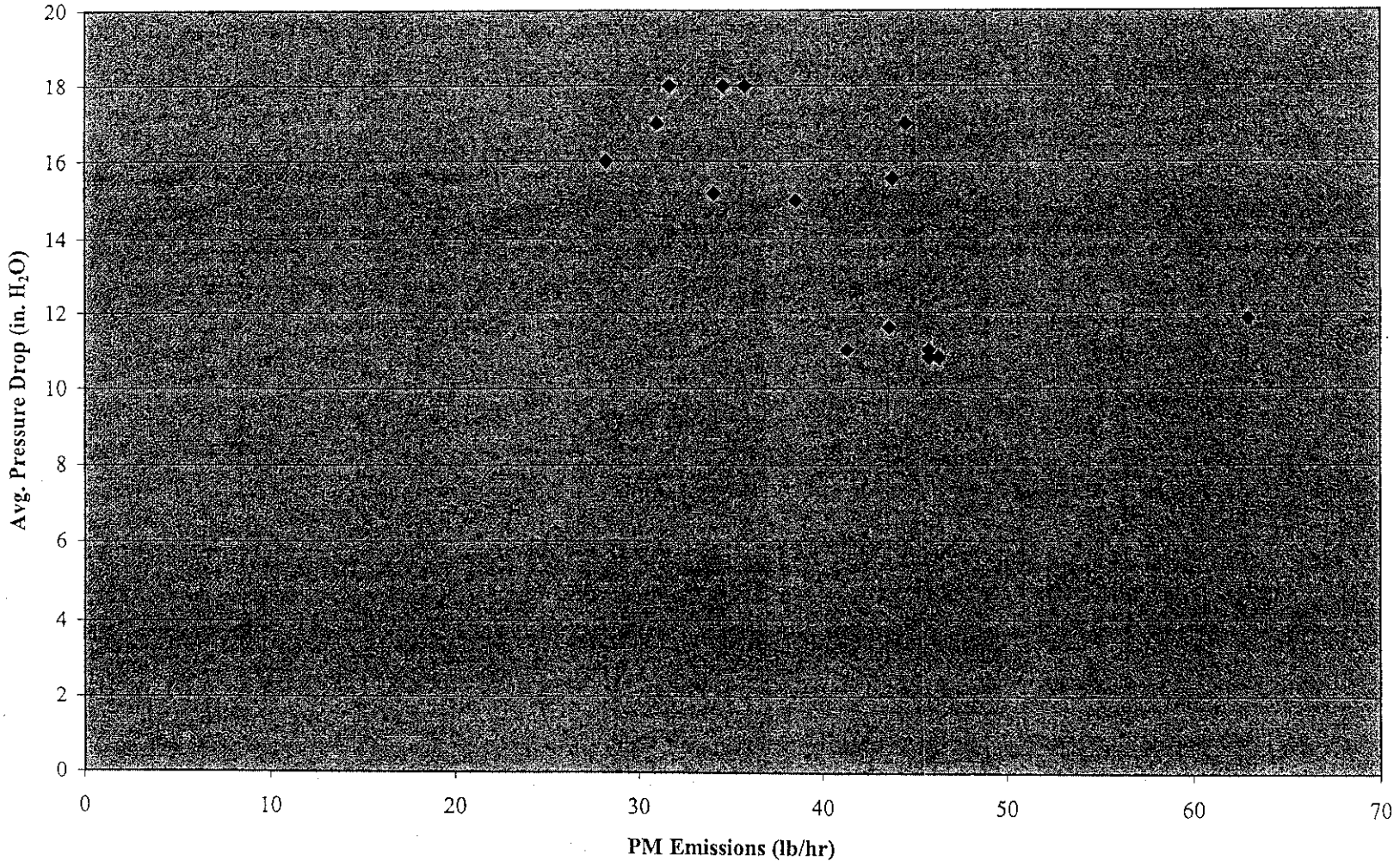
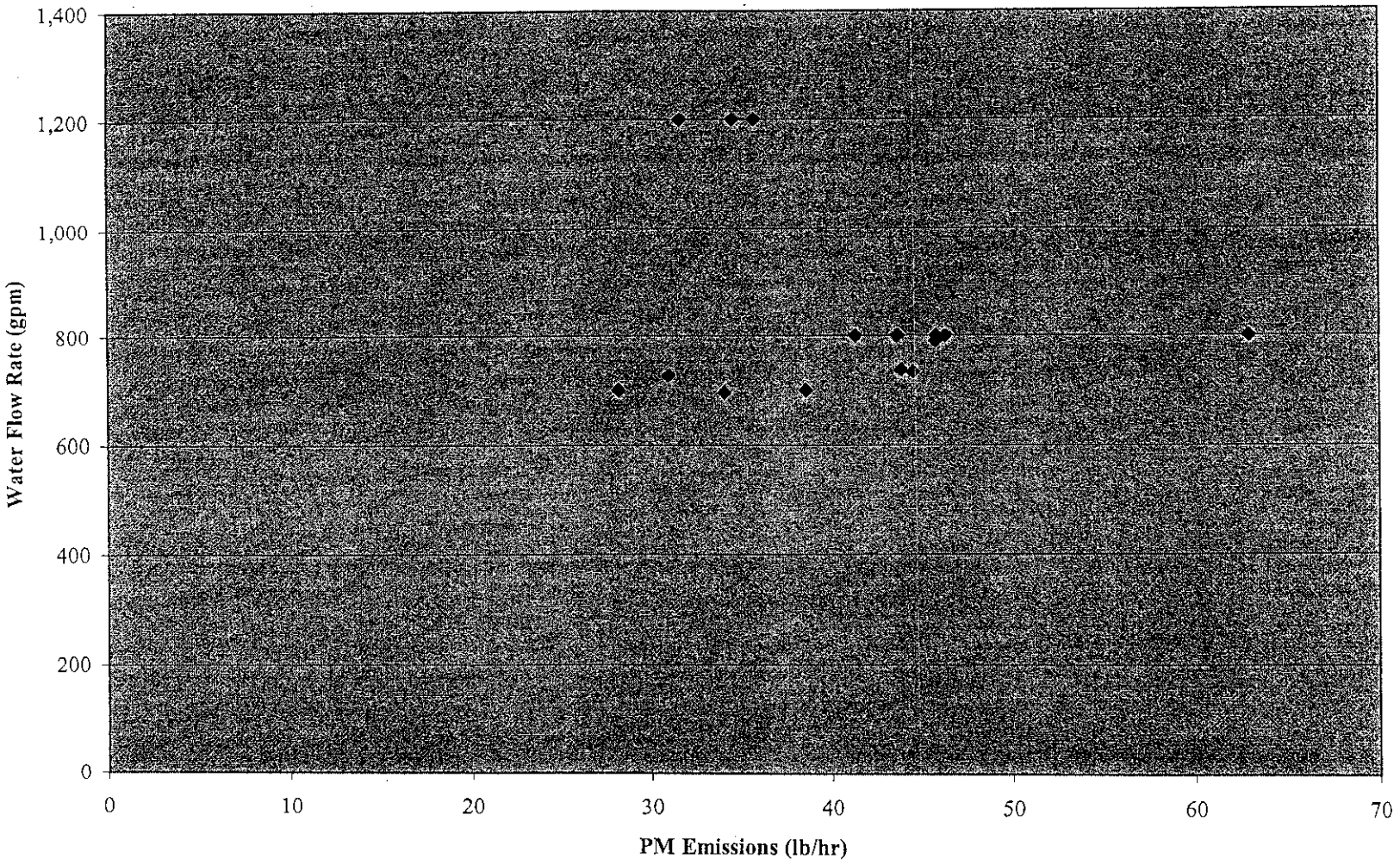


Figure 3-2. OFC Boiler No. 3
PM vs. Water Flow Rate



4.0 PARTICULATE MATTER EMISSIONS FROM BOILER NO. 4

4.1 EMISSIONS UNIT IDENTIFICATION

Boiler No. 4—EU ID 004

4.2 APPLICABLE REGULATIONS, EMISSIONS LIMITS, AND MONITORING REQUIREMENTS

Boiler No. 4 has a PM emission limit of 0.3 lb/MMBtu for carbonaceous fuel, plus 0.1 lb/MMBtu for No. 6 fuel oil [Rule 62-296.410(1)(b)2, F.A.C.]. The equivalent potential emissions are 84.0 lb/hr and 161.3 TPY for carbonaceous fuel and 8.3 lb/hr and 9.1 TPY for No. 6 fuel oil. The current VE limit is 30-percent opacity, with an exception of up to 40-percent opacity for 2 minutes per hour (Permit No. 0990019-003-AV).

PM and VE compliance testing is required annually on Boiler No. 4. In addition, the total pressure drop across the scrubber, the scrubber water inlet pressure, and the scrubber water flow rate must be monitored and recorded at least once per 8-hour shift during each day of operation. The monitors must be properly maintained and functional at all times, except during instrument breakdown, calibration, or repair (Permit No. 0990019-003-AV).

4.3 CONTROL TECHNOLOGY DESCRIPTION

PM emissions from Boiler No. 4 are controlled by two identical spray impingement type wet scrubbers operating in parallel. The exhaust gases from the boiler are split, with approximately one-half of the total flow going to one scrubber, and one-half going to the other scrubber. The exhaust gases from each scrubber combine and exhaust through a single stack.

The design pressure drop across each scrubber is 4 to 18 inches H_2O. The design scrubber water inlet pressure to each scrubber is 40 to 60 psig. The effectiveness of the wet scrubbers is evaluated with an annual stack test and visible emission measurements. A detailed description of the control equipment is included in the Title V renewal application (Attachment OF-EU3-I3).

4.4 MONITORING APPROACH

The monitoring approach is based on monitoring scrubber pressure drop and scrubber water flow rate. The monitoring approach is summarized in the table below:

Boiler No. 4	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across each scrubber.	Total water flow rate to both scrubbers.
Measurement Approach	Pressure drop is monitored with a manometer.	The scrubber water flow rate is measured using an orifice meter.
Indicator Range	An excursion is defined as any pressure drop below 12 in. H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any water flow rate below 500 gpm. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.1 inches of water gauge pressure.	The scrubber water orifice meter is located on the scrubber liquid supply line. The minimum accuracy of the device is ±25 gpm of water flow.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The manometer is maintained in accordance with the manufacturer's recommendations.	The orifice meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Scrubber water flow rate is monitored continuously.
Data Collection Procedures	Reading taken once every eight (8) hours.	Reading taken once every eight (8) hours.
Averaging Period	NA	NA

4.5 JUSTIFICATION

Both pressure drop across the scrubber and water flow rate to the scrubber are recognized parameters for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and therefore the efficiency of the scrubbing process. The water flow rate is a measure of sufficient fresh scrubbing liquid being supplied to the scrubber.

Water delivery pressure is currently monitored, which provides an indication of plugging of the spray nozzles in the scrubber. However, scrubber water flow rate provides a more direct indicator of adequate water supply to the scrubber. Therefore, water delivery pressure is not proposed as a parameter for CAM purposes.

Osceola Farms has sufficient historic test data necessary to establish indicator values for pressure drop and water flow rate to the Boiler No. 4 wet scrubbers. The test data correlating the parameters to the PM emission levels are presented in Figures 4-1 through 4-3. Supporting information is contained in Appendix B.

The proposed parameter minimum values are based on 90 percent of the minimum parameter values recorded during each one-hour test run, using the historic test data, when compliance was demonstrated with the PM limit. The calculation of the minimum parameter values are provided below:

Pressure Drop: Minimum test run value = 13 in. H_2O

Minimum parameter value = 13 x 0.9 = 11.7 in. H_2O

Water Flow Rate: Minimum test run value = 565 gpm

Minimum parameter value = 565 x 0.9 = 508 gpm

Wet scrubber operating parameter values below these minimum parameter values would be indicative of abnormal operation of the wet scrubbers. This methodology is consistent with the establishment of wet scrubber operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater MACT standards. Boiler No. 4 will be subject to these standards beginning in September 2007.

The CAM regulations generally require that pollutant specific emissions units with the potential to emit greater than 100 TPY collect monitoring data at least four (4) times per hour. However, 40 CFR 63.3(b)(ii) allows the permitting authority to approve a reduced data collection frequency, if appropriate, based on the data collection mechanisms available for a particular parameter.

Osceola has been recording scrubber parameters once per 8-hour shift, according to the current Title V permit conditions. Although Osceola has continuous pressure drop and water flow rate monitors in place, the mechanisms are not in place to continuously record the pressure drop data and create

hourly averages. In addition, the mechanisms are not in place to create hourly averages of the water flow rate. It is therefore requested that the current recording frequency of once per 8-hour shift be retained for both pressure drop and water flow rate.

Based on collecting data once per 8-hour shift, an excursion would occur whenever any individual reading is below the minimum parameter value. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence, to determine the action required (if any) to correct the situation. All excursions will be documented and reported.

Figure 4-1. OFC Boiler No. 4 (North Scrubber)
PM vs. Pressure Drop

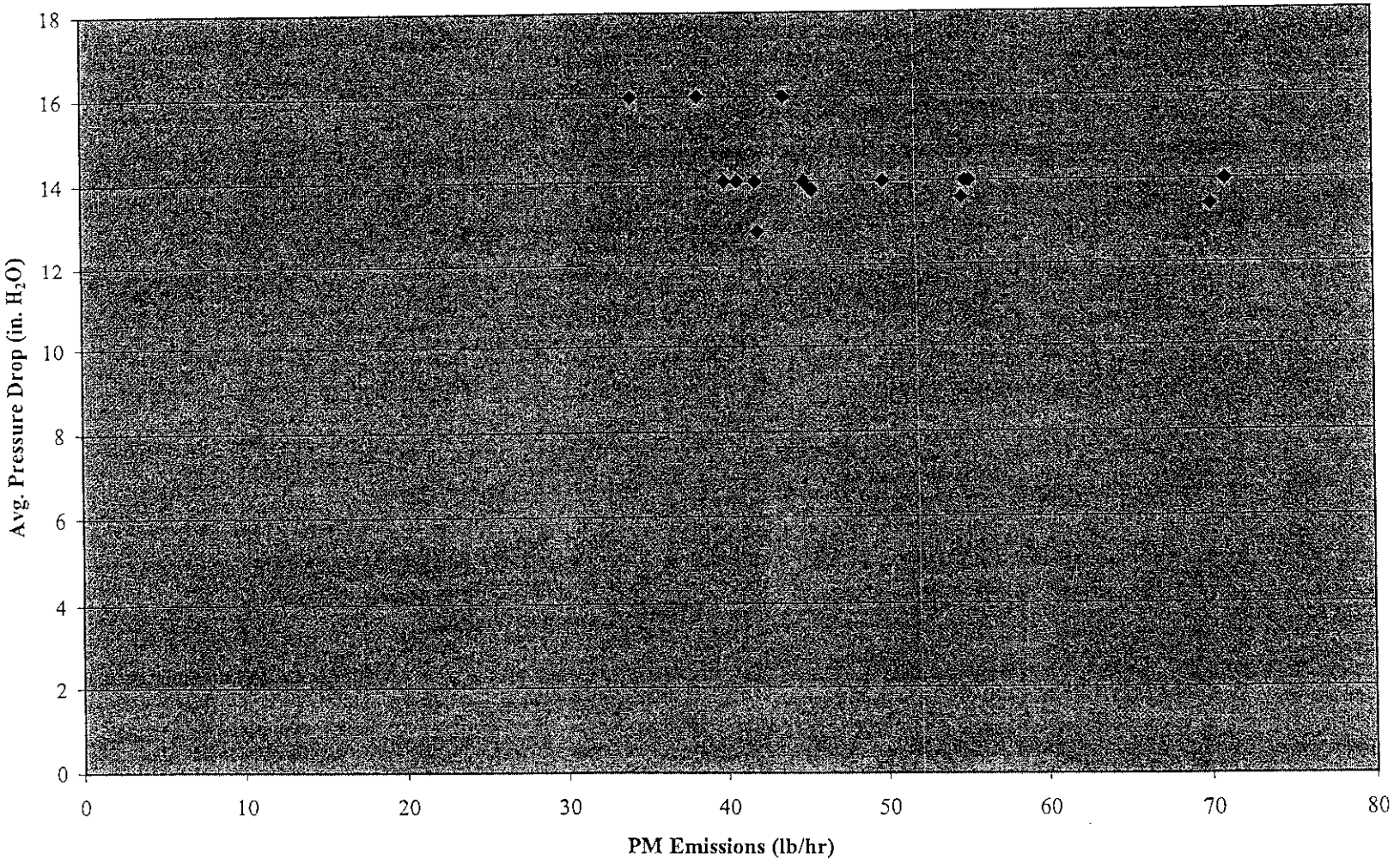


Figure 4-2. OFC Boiler No. 4 (South Scrubber)
PM vs. Pressure Drop

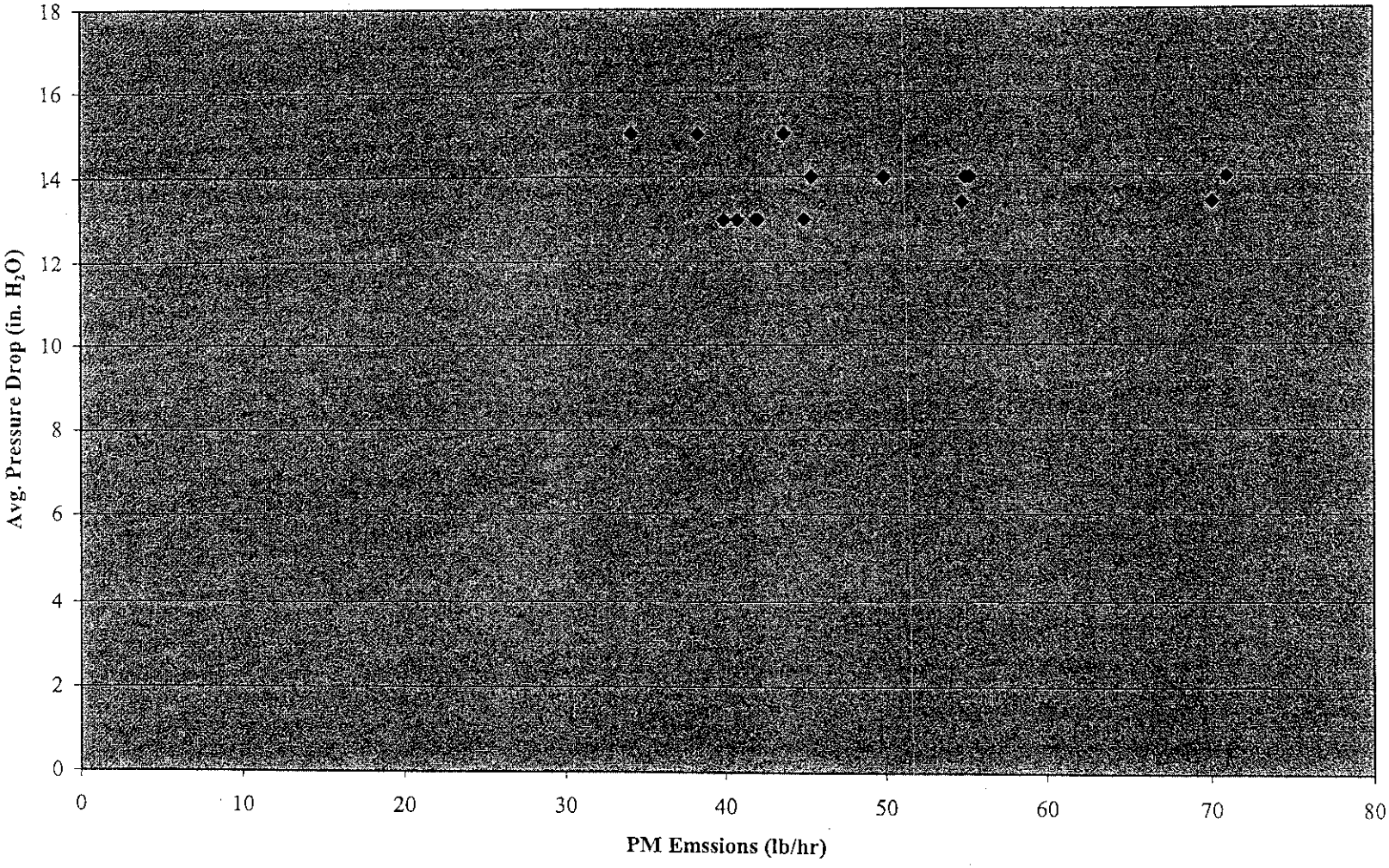
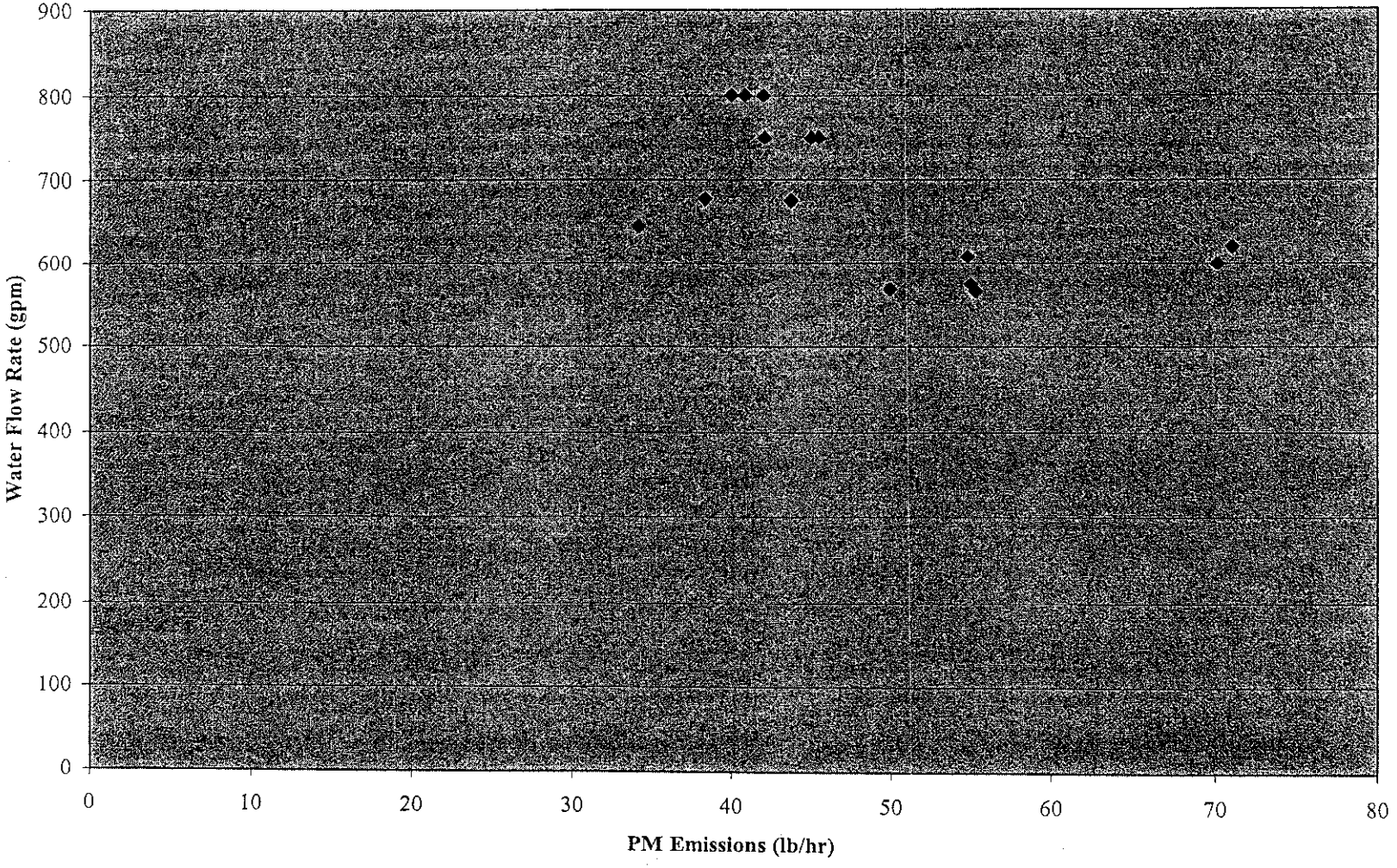


Figure 4-3. OFC Boiler No. 4
PM vs. Total Water Flow Rate



5.0 PARTICULATE MATTER EMISSIONS FROM BOILER NO. 5

5.1 EMISSIONS UNIT IDENTIFICATION

Boiler No. 5—EU ID 005

5.2 APPLICABLE REGULATIONS, EMISSIONS LIMITS, AND MONITORING REQUIREMENTS

Boiler No. 5 has a PM emission limit of 0.2 lb/MMBtu for carbonaceous fuel, plus 0.1 lb/MMBtu for No. 6 fuel oil [Rule 62-296.410(1)(b)2, F.A.C.]. The equivalent potential emissions are 56.9 lb/hr and 109.0 TPY for carbonaceous fuel and 7.5 lb/hr and 9.1 TPY for No. 6 fuel oil. The current VE limit is 30-percent opacity, with an exception of up to 40-percent opacity for 2 minutes per hour (Permit No. 0990019-003-AV).

PM and VE compliance testing is required annually on Boiler No. 5. In addition, the total pressure drop across the scrubber, the scrubber water inlet pressure, and the scrubber water flow rate must be monitored and recorded at least once per 8-hour shift during each day of operation. The monitors must be properly maintained and functional at all times, except during instrument breakdown, calibration, or repair (Permit No. 0990019-003-AV).

5.3 CONTROL TECHNOLOGY DESCRIPTION

PM emissions from Boiler No. 5 are controlled by two identical spray impingement type wet scrubbers operating in parallel. The exhaust gases from the boiler are split, with approximately one-half of the total flow going to one scrubber, and one-half going to the other scrubber. Each scrubber exhausts through a separate stack.

The design pressure drop across each scrubber is 4 to 18 inches H_2O. The design scrubber water inlet pressure to each scrubber is 40 to 60 psig. The effectiveness of the wet scrubbers is evaluated with an annual stack test and visible emission measurements. A detailed description of the control equipment is included in the Title V renewal application (Attachment OF-EU4-I3).

5.4 MONITORING APPROACH

The monitoring approach is based on monitoring scrubber pressure drop and scrubber water flow rate. The monitoring approach is summarized in the table below:

Boiler No. 5	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across each scrubber.	Total water flow rate to both scrubbers.
Measurement Approach	Pressure drop is monitored with a manometer.	The scrubber water flow rate is measured using an orifice meter.
Indicator Range	An excursion is defined as any pressure drop below 8 in. H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any water flow rate below 475 gpm. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.1 inches of water gauge pressure.	The scrubber water orifice meter s located on the scrubber liquid supply line. The minimum accuracy of the device is ±25 gpm of water flow.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The manometer is maintained in accordance with the manufacturer's recommendations.	The orifice meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Scrubber water flow rate is monitored continuously.
Data Collection Procedures	Reading taken once every eight (8) hours.	Reading taken once every eight (8) hours.
Averaging Period	NA	NA

5.5 JUSTIFICATION

Both pressure drop across the scrubber and water flow rate to the scrubber are recognized parameters for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and therefore the efficiency of the scrubbing process. The water flow rate is a measure of sufficient fresh scrubbing liquid being supplied to the scrubber.

Water delivery pressure is currently monitored, which provides an indication of plugging of the spray nozzles in the scrubber. However, scrubber water flow rate provides a more direct indicator of adequate water supply to the scrubber. Therefore, water delivery pressure is not proposed as a parameter for CAM purposes.

Osceola Farms has sufficient historic test data necessary to establish indicator values for pressure drop and water flow rate to the Boiler No. 5 wet scrubbers. The test data correlating the parameters to the PM emission levels are presented in Figures 5-1 through 5-3. Supporting information is contained in Appendix B.

The proposed parameter minimum values are based 90 percent of the minimum parameter values recorded during the 1-hour test runs, using the historic test data, when compliance was demonstrated with the PM limit. The calculation of the minimum parameter values are provided below:

Pressure Drop: Minimum test run value = 9 in. H_2O

Minimum parameter value = 9 x 0.9 = 8.1 in. H_2O

Water Flow Rate: Minimum test run value = 527 gpm

Minimum parameter value = 527 x 0.9 = 475 gpm

Wet scrubber operating parameter values below these minimum parameter values would be indicative of abnormal operation of the wet scrubbers. This methodology is consistent with the establishment of wet scrubber operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater MACT standards. Boiler No. 5 will be subject to these standards beginning in September 2007.

The CAM regulations generally require that pollutant specific emissions units with the potential to emit greater than 100 TPY collect monitoring data at least four (4) times per hour. However, 40 CFR 63.3(b)(ii) allows the permitting authority to approve a reduced data collection frequency, if appropriate, based on the data collection mechanisms available for a particular parameter.

Osceola has been recording scrubber parameters once per 8-hour shift, according to the current Title V permit conditions. Although Osceola has continuous pressure drop and water flow rate monitors in place, the mechanisms are not in place to continuously record the pressure drop data and create hourly averages. In addition, the mechanisms are not in place to create hourly averages of the water

flow rate. It is therefore requested that the current recording frequency of once per 8-hour shift be retained for both pressure drop and water flow rate.

Based on collecting data once per 8-hour shift, an excursion would occur whenever any individual reading is below the minimum parameter value. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence, to determine the action required (if any) to correct the situation. All excursions will be documented and reported.

Figure 5-1. OFC Boiler No. 5 (West Scrubber)
PM vs. Pressure Drop

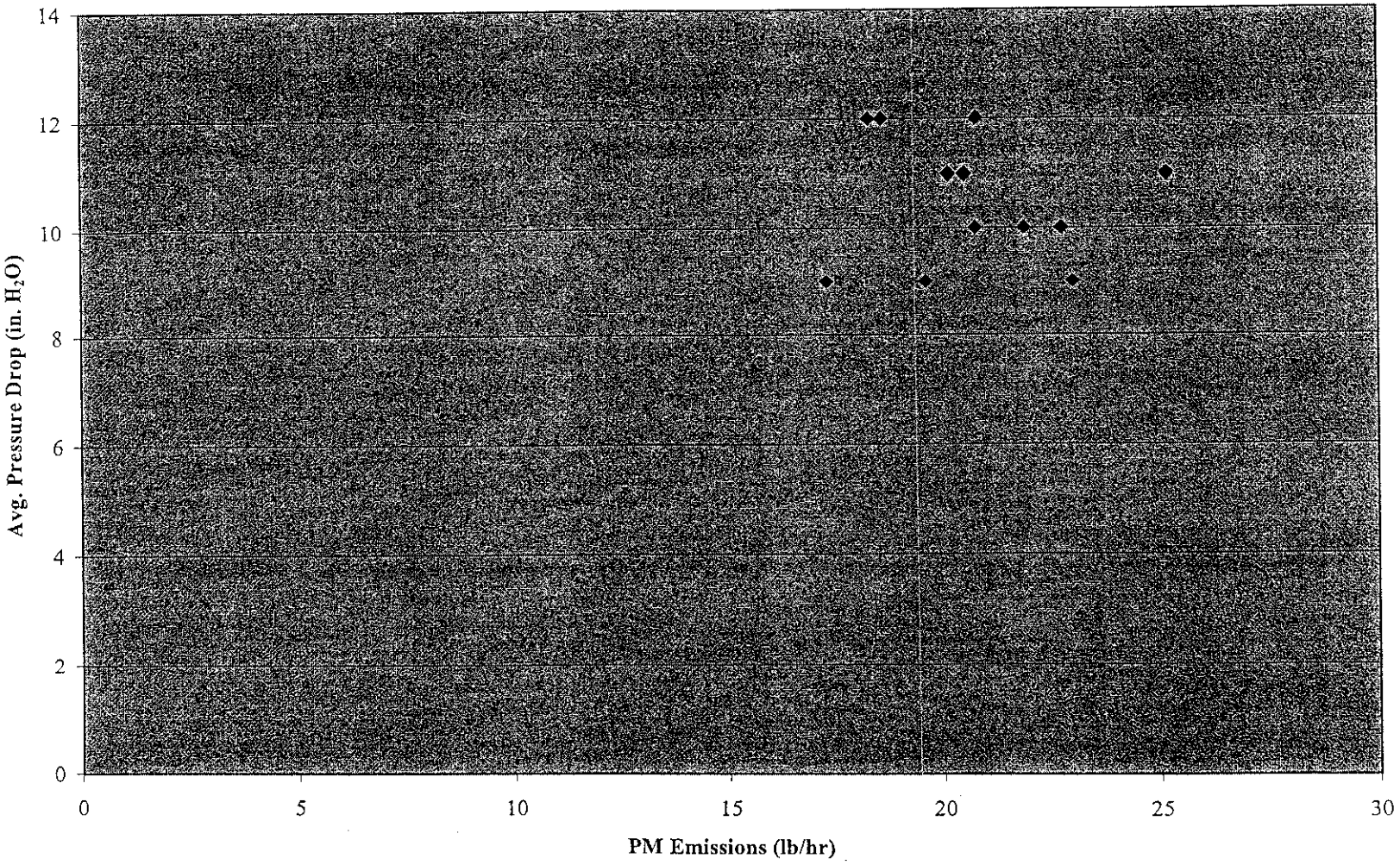


Figure 5-2. OFC Boiler No. 5 (East Scrubber)
PM vs. Pressure Drop

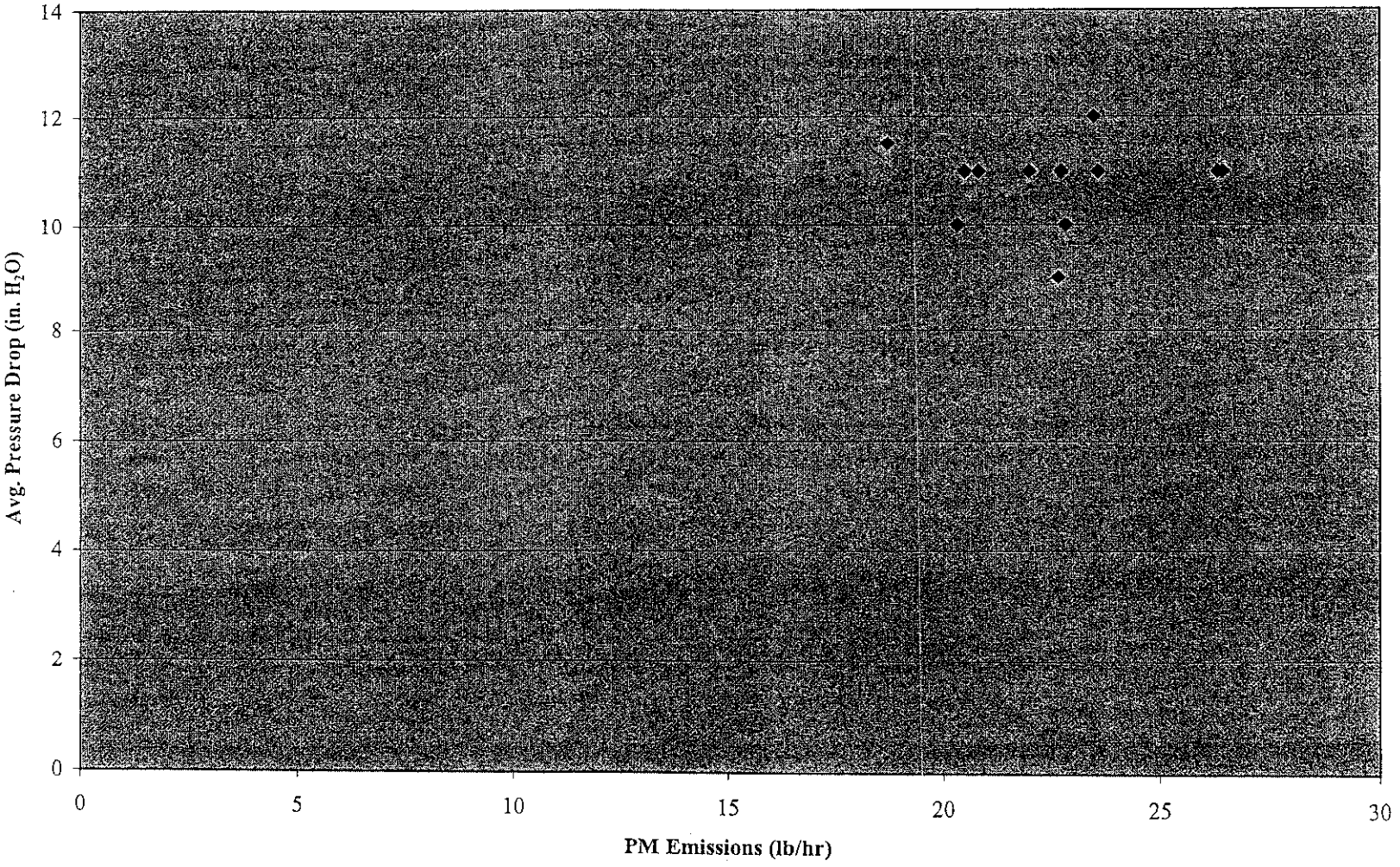
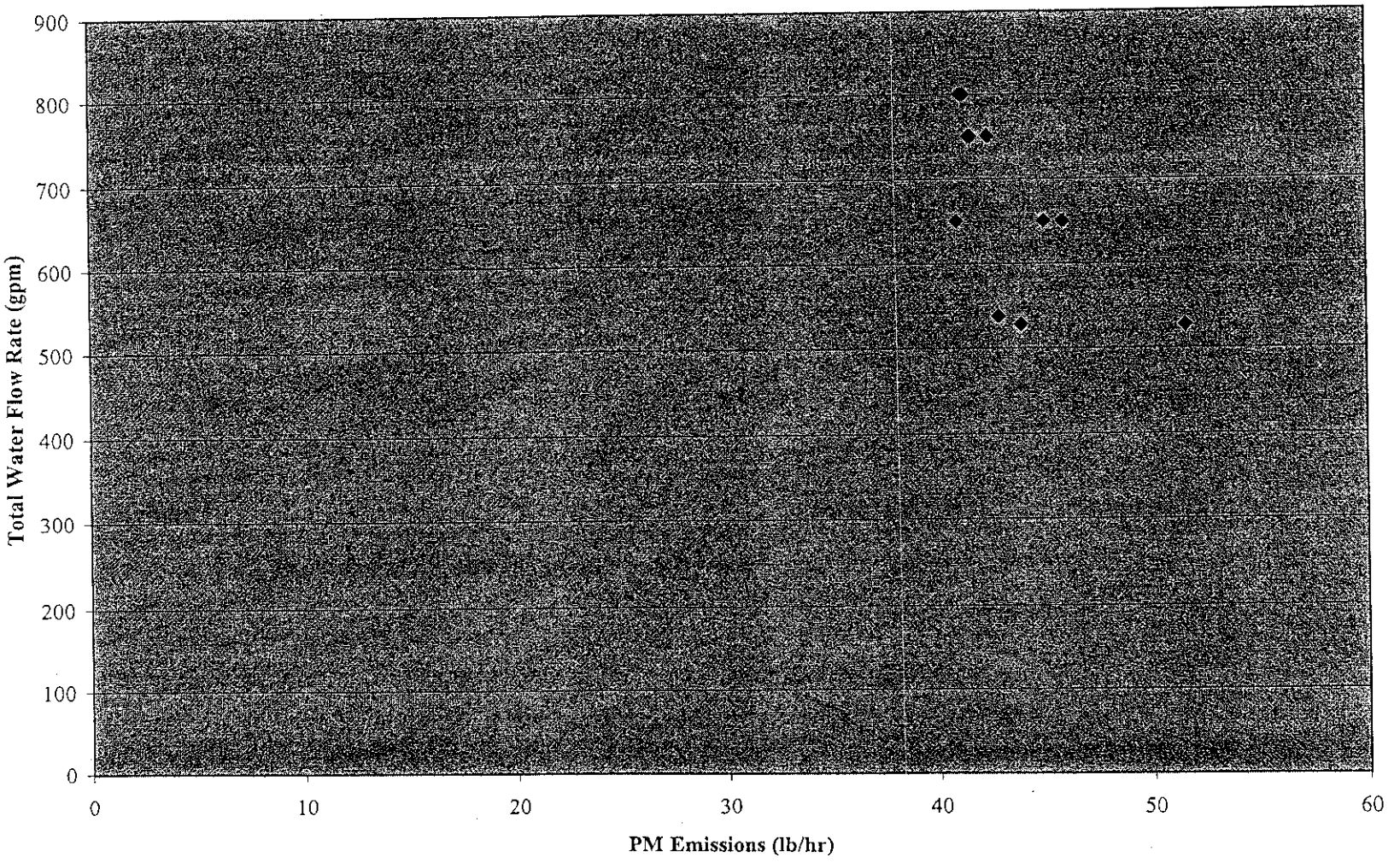


Figure 5-3. OFC Boiler No. 5
PM vs. Total Water Flow Rate



6.0 PARTICULATE MATTER EMISSIONS FROM BOILER NO. 6

6.1 EMISSIONS UNIT IDENTIFICATION

Boiler No. 6—EU ID 006

6.2 APPLICABLE REGULATIONS, EMISSIONS LIMITS, AND MONITORING REQUIREMENTS

Boiler No. 6 has a PM emission limit of 0.15 lb/MMBtu for carbonaceous fuel, plus 0.1 lb/MMBtu for No. 6 fuel oil [Rule 62-296.410(1)(b)2, F.A.C. and Permit No. PSD-FL-134]. The equivalent potential emissions are 56.9 lb/hr and 109.0 TPY for carbonaceous fuel and 7.5 lb/hr and 9.1 TPY for No. 6 fuel oil. The current VE limit is 20-percent opacity, with an exception of up to 40-percent opacity for 2 minutes per hour (Permit No. 0990019-003-AV).

PM and VE compliance testing is required annually on Boiler No. 6. In addition, the total pressure drop across the scrubber, the scrubber water inlet pressure, and the scrubber water flow rate must be monitored and recorded at least once per 8-hour shift during each day of operation. The monitors must be properly maintained and functional at all times, except during instrument breakdown, calibration, or repair (Permit No. 0990019-003-AV).

6.3 CONTROL TECHNOLOGY DESCRIPTION

PM emissions from Boiler No. 6 are controlled by a single spray impingement type wet scrubber. The design pressure drop across the scrubber is 4 to 18 inches H_2O. The design scrubber water inlet pressure to the scrubber is 30 to 60 psig. The effectiveness of the wet scrubbers is evaluated with an annual stack test and visible emission measurements. A detailed description of the control equipment is included in the Title V renewal application (Attachment OF-EU5-I3).

6.4 MONITORING APPROACH

The monitoring approach is based on monitoring scrubber pressure drop and scrubber water flow rate. The monitoring approach is summarized in the table below:

Boiler No. 6	Indicator No. 1	Indicator No. 2
Indicator	Pressure drop across each scrubber.	Total water flow rate to both scrubbers.
Measurement Approach	Pressure drop is monitored with a manometer.	The scrubber water flow rate is measured using an orifice meter.
Indicator Range	An excursion is defined as any pressure drop below 12.6 in. H_2O. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.	An excursion is defined as any water flow rate below 650 gpm. Excursions trigger an inspection, corrective action, and a recordkeeping and reporting requirement.
Data Representativeness	The monitoring system consists of a manometer which measures the pressure drop across the scrubber. The minimum accuracy of the device is ±0.1 inches of water gauge pressure.	The scrubber water orifice meter is located on the scrubber liquid supply line. The minimum accuracy of the device is ±25 gpm of water flow.
Verification of Operational Status	NA	NA
QA/QC Practices and Criteria	The manometer is maintained in accordance with the manufacturer's recommendations.	The orifice meter is maintained in accordance with the manufacturer's recommendations.
Monitoring Frequency	Pressure drop is monitored continuously.	Scrubber water flow rate is monitored continuously.
Data Collection Procedures	Reading taken once every eight (8) hours.	Reading taken once every eight (8) hours.
Averaging Period	NA	NA

6.5 JUSTIFICATION

Both pressure drop across the scrubber and water flow rate to the scrubber are recognized parameters for controlling PM emissions with wet scrubbers. The pressure drop is a measure of the energy imparted to the gas stream and therefore the efficiency of the scrubbing process. The water flow rate is a measure of sufficient fresh scrubbing liquid being supplied to the scrubber.

Water delivery pressure is currently monitored, which provides an indication of plugging of the spray nozzles in the scrubber. However, scrubber water flow rate provides a more direct indicator of adequate water supply to the scrubber. Therefore, water delivery pressure is not proposed as a parameter for CAM purposes.

Osceola Farms has sufficient historic test data necessary to establish indicator values for pressure drop and water flow rate to the Boiler No. 6 wet scrubber. The test data correlating the parameters to the PM emission levels are presented in Figures 6-1 and 6-2. Supporting information is contained in Appendix B.

The proposed parameter minimum values are based 90 percent of the minimum parameter values recorded during the 1-hour test runs, using the historic test data, when compliance was demonstrated with the PM limit. The calculation of the minimum parameter values are provided below:

Pressure Drop: Minimum test run value = 14 in. H_2O

Minimum parameter value = 14 x 0.9 = 12.6 in. H_2O

Water Flow Rate: Minimum test run value = 725 gpm

Minimum parameter value = 725 x 0.9 = 652 gpm

Wet scrubber operating parameter values below these minimum parameter values would be indicative of abnormal operation of the wet scrubbers. This methodology is consistent with the establishment of wet scrubber operating limits under 40 CFR 63, Subpart DDDDD, which are the Industrial Boiler/Process Heater MACT standards. Boiler No. 6 will be subject to these standards beginning in September 2007.

The CAM regulations generally require that pollutant specific emissions units with the potential to emit greater than 100 TPY collect monitoring data at least four (4) times per hour. However, 40 CFR 63.3(b)(ii) allows the permitting authority to approve a reduced data collection frequency, if appropriate, based on the data collection mechanisms available for a particular parameter.

Osceola has been recording scrubber parameters once per 8-hour shift, according to the current Title V permit conditions. Although Osceola has continuous pressure drop and water flow rate monitors in place, the mechanisms are not in place to continuously record the pressure drop data and create hourly averages. In addition, the mechanisms are not in place to create hourly averages of the water

flow rate. It is therefore requested that the current recording frequency of once per 8-hour shift be retained for both pressure drop and water flow rate.

Based on collecting data once per 8-hour shift, an excursion would occur whenever any individual reading is below the minimum parameter value. When an excursion occurs, corrective action will be initiated, beginning with an evaluation of the occurrence, to determine the action required (if any) to correct the situation. All excursions will be documented and reported.

Figure 6-1. OFC Boiler No. 6
PM vs. Pressure Drop

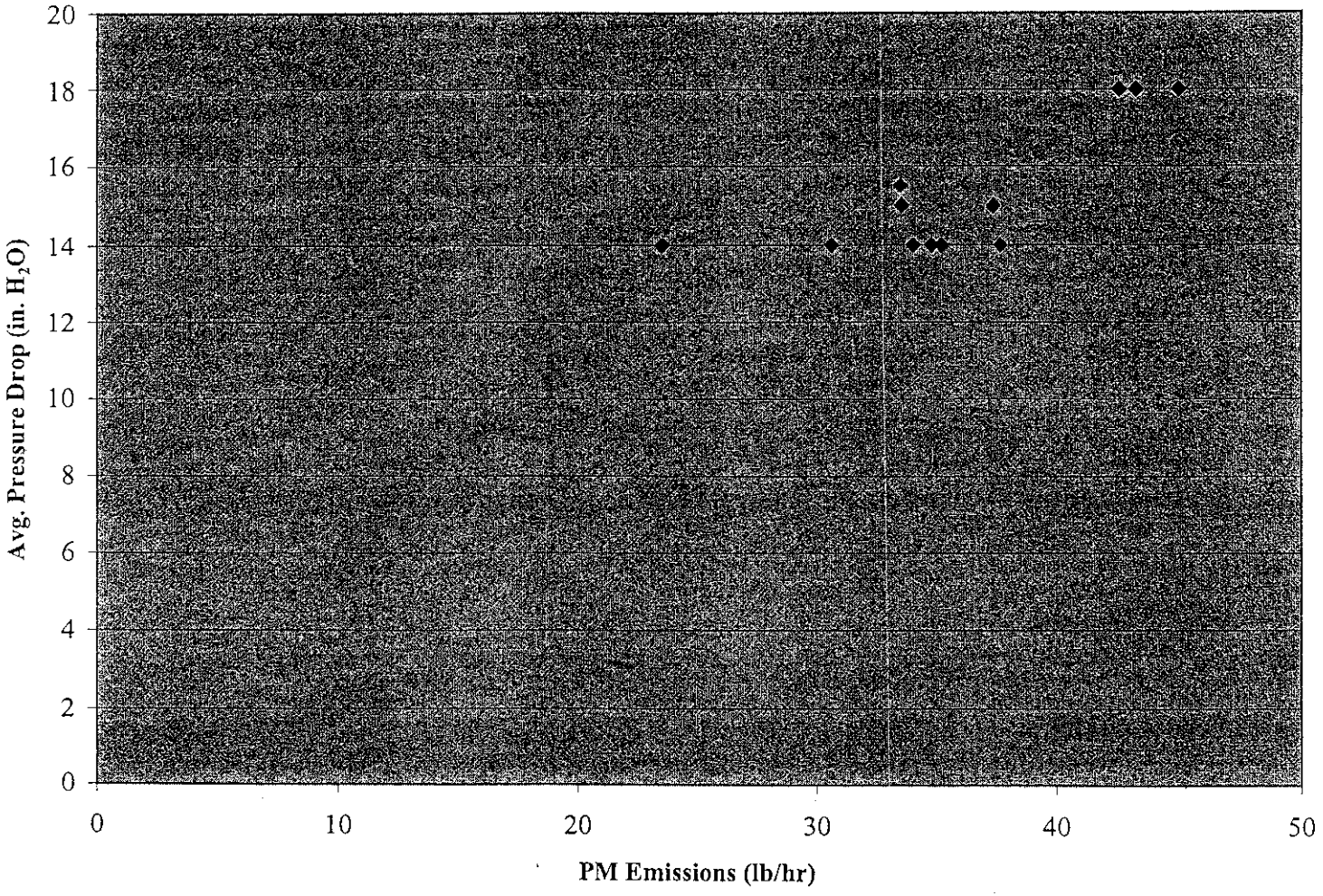
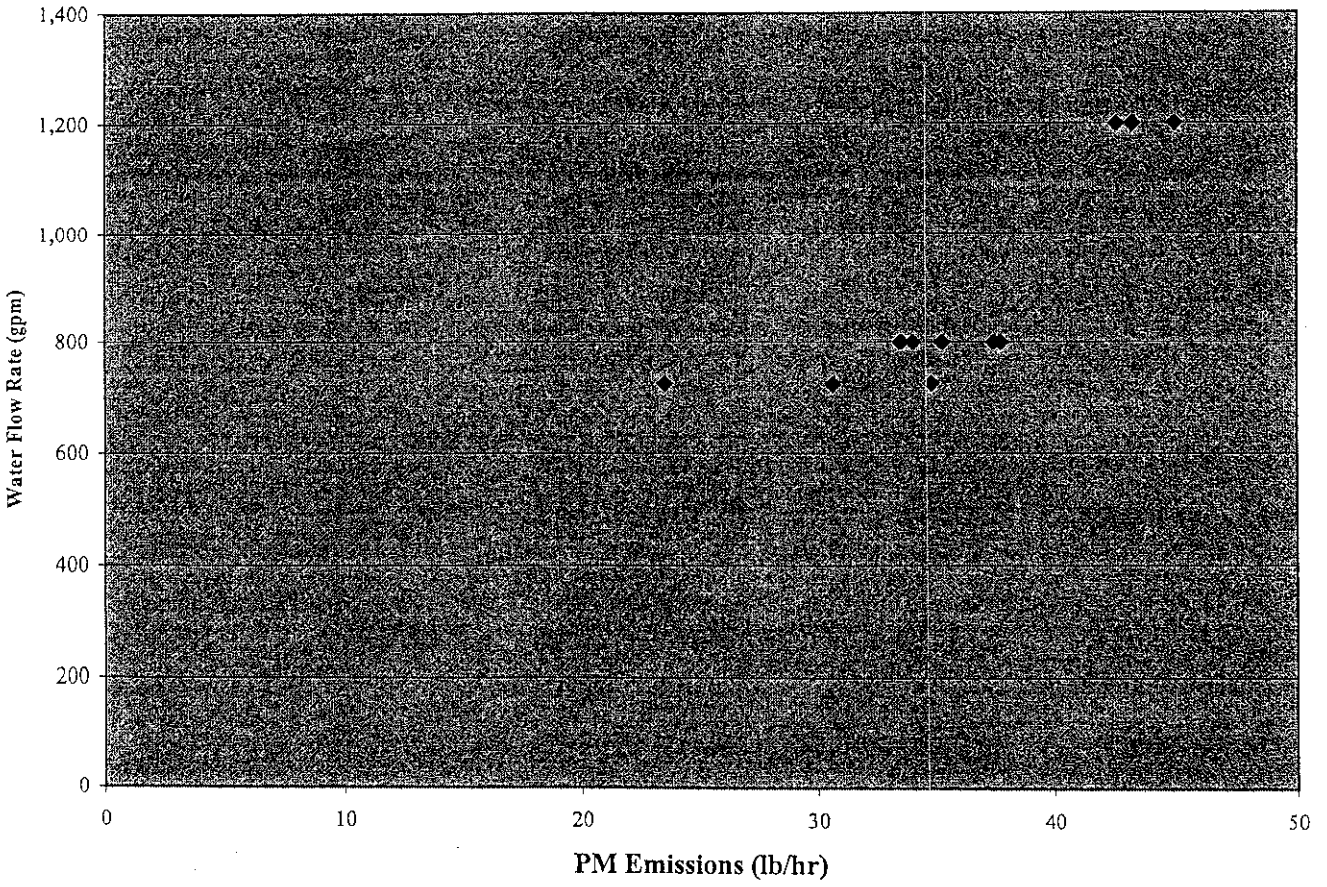


Figure 6-2. OFC Boiler No. 6
PM vs. Water Flow Rate



APPENDIX A

SIGNATURE PAGES

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **David A. Buff**
   Registration Number: **19011**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Golder Associates Inc.****
   Street Address: **6241 NW 23rd Street, Suite 500**
   City: **Gainesville** State: **FL** Zip Code: **32653**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 336-5600** ext.**545** Fax: **(352) 336-6603**
4. Professional Engineer Email Address: **dbuff@golder.com**
5. Professional Engineer Statement:

I, the undersigned, hereby certify, except as particularly noted herein, that:*

(1) To the best of my knowledge, there is reasonable assurance that the air pollutant emissions unit(s) and the air pollution control equipment described in this application for air permit, when properly operated and maintained, will comply with all applicable standards for control of air pollutant emissions found in the Florida Statutes and rules of the Department of Environmental Protection; and

(2) To the best of my knowledge, any emission estimates reported or relied on in this application are true, accurate, and complete and are either based upon reasonable techniques available for calculating emissions or, for emission estimates of hazardous air pollutants not regulated for an emissions unit addressed in this application, based solely upon the materials, information and calculations submitted with this application.

(3) If the purpose of this application is to obtain a Title V air operation permit (check here ☐, if so), I further certify that each emissions unit described in this application for air permit, when properly operated and maintained, will comply with the applicable requirements identified in this application to which the unit is subject, except those emissions units for which a compliance plan and schedule is submitted with this application.

(4) If the purpose of this application is to obtain an air construction permit (check here ☐, if so) or concurrently process and obtain an air construction permit and a Title V air operation permit revision or renewal for one or more proposed new or modified emissions units (check here ☒, if so), I further certify that the engineering features of each such emissions unit described in this application have been designed or examined by me or individuals under my direct supervision and found to be in conformity with sound engineering principles applicable to the control of emissions of the air pollutants characterized in this application.

(5) If the purpose of this application is to obtain an initial air operation permit or operation permit revision or renewal for one or more newly constructed or modified emissions units (check here ☐, if so), I further certify that, with the exception of any changes detailed as part of this application, each such emissions unit has been constructed or modified in substantial accordance with the information given in the corresponding application for air construction permit and with all provisions contained in such permit.

David A. Buff — Signature

6/21/05 — Date

(seal)

* Attach any exception to certification statement.

** Board of Professional Engineers Certificate of Authorization #00001670

APPLICATION INFORMATION

Application Responsible Official Certification

Complete if applying for an initial/revised/renewal Title V permit or concurrent processing of an air construction permit and a revised/renewal Title V permit. If there are multiple responsible officials, the "application responsible official" need not be the "primary responsible official."

1. Application Responsible Official Name:
   Carlos Rionda, Vice President and General Manager

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):
   - ☒ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.
   - ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.
   - ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.
   - ☐ The designated representative at an Acid Rain source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **Osceola Farms Company**
   Street Address: **U.S. 98 & Hatton Highway**
   City: **Pahokee** State: **FL** Zip Code: **33476**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(561) 924-7156** ext. Fax: **(561) 924-3246**

5. Application Responsible Official Email Address:

6. Application Responsible Official Certification:
   I, the undersigned, am a responsible official of the Title V source addressed in this air permit application. I hereby certify, based on information and belief formed after reasonable inquiry, that the statements made in this application are true, accurate and complete and that, to the best of my knowledge, any estimates of emissions reported in this application are based upon reasonable techniques for calculating emissions. The air pollutant emissions units and air pollution control equipment described in this application will be operated and maintained so as to comply with all applicable standards for control of air pollutant emissions found in the statutes of the State of Florida and rules of the Department of Environmental Protection and revisions thereof and all other applicable requirements identified in this application to which the Title V source is subject. I understand that a permit, if granted by the department, cannot be transferred without authorization from the department, and I will promptly notify the dep[illegible] upon sale or legal transfer of the facility or any permitted emissions unit. Finall[illegible] certify that the facility and each emissions unit are in compliance with all applicable requirements to which they are subject, except as identified in compliance plan(s) submitted with this application.

   Signature

   6/22/05
   Date

APPENDIX B

HISTORIC PM COMPLIANCE TEST DATA FOR BOILER NOS. 1 -6

Table B-1. Boiler PM Emission Tests, Osceola Farms Company

Unit	Run Number	Stack	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Average Liquid Pressure (psig)	Average Water Flow (gpm)	Average Pressure Drop (in. H_2O)	
										lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			S	N
Boiler 2	1	S	Inclined Grate	11/15/00	37,020	---	131,200	255.4	35.47			19.42	0.076	55	800	11	
Boiler 2	2	S	Inclined Grate	11/15/00	36,640	---	128,000	249.2	34.61			20.71	0.083	55	800	11	
Boiler 2	3	S	Inclined Grate	11/15/00	36,740	---	124,800	243.2	33.78			17.62	0.064	55	800	11	
Boiler 2	1	S	Inclined Grate	11/20/02	38,354	61,220	126,400	248.4	34.50			22.20	0.089	55	800	10	
Boiler 2	2	S	Inclined Grate	11/20/02	38,935	63,529	120,000	235.9	32.76			24.05	0.102	55	800	10	
Boiler 2	3	S	Inclined Grate	11/20/02	36,963	61,436	116,800	229.6	31.89			25.10	0.109	55	800	9	
Boiler 2	1	S	Inclined Grate	12/11/03	32,986	47,388	113,723	223.0	30.97			27.47	0.123	65	800	10	
Boiler 2	2	S	Inclined Grate	12/11/03	35,107	50,407	124,062	243.5	33.82			19.48	0.080	65	800	10	
Boiler 2	3	S	Inclined Grate	12/11/03	36,867	51,943	121,108	237.4	32.97			22.73	0.096	65	800	10	
Boiler 2	1	S	Inclined Grate	12/01/04	29,048	46,451	112,246	220.8	30.67			19.42	0.088	50	1,200	10	
Boiler 2	2	S	Inclined Grate	12/01/04	29,890	48,086	116,677	228.5	31.74			17.14	0.075	50	1,200	11	
Boiler 2	3	S	Inclined Grate	12/01/04	28,838	46,676	116,677	228.0	31.67			21.65	0.095	50	1,200	12	
Boiler 2	1	N	Inclined Grate	11/15/00	40,995	---	128,000	249.4	34.64			30.19	0.121	55	800		12
Boiler 2	2	N	Inclined Grate	11/15/00	40,343	---	129,600	252.3	35.04			25.22	0.100	55	800		12
Boiler 2	3	N	Inclined Grate	11/15/00	40,417	---	129,600	252.6	35.08			18.40	0.073	55	800		12
Boiler 2	1	N	Inclined Grate	11/20/02	39,281	62,467	123,200	241.5	33.54			22.93	0.095	57	800		13
Boiler 2	2	N	Inclined Grate	11/20/02	39,611	63,580	131,200	258.1	35.85			21.13	0.082	56	800		13
Boiler 2	3	N	Inclined Grate	11/20/02	38,051	62,195	142,400	280.1	38.90			21.23	0.076	55	800		13
Boiler 2	1	N	Inclined Grate	12/11/03	44,504	64,184	123,429	242.7	33.71			24.24	0.100	65	800		12
Boiler 2	2	N	Inclined Grate	12/11/03	36,816	52,816	122,057	239.8	33.31			21.33	0.089	65	800		12
Boiler 2	3	N	Inclined Grate	12/11/03	36,806	53,563	125,538	246.2	34.19			21.90	0.089	65	800		12
Boiler 2	1	N	Inclined Grate	11/30/04	29,589	47,474	116,571	228.2	31.69			19.78	0.087	50	1,200		10
Boiler 2	2	N	Inclined Grate	11/30/04	32,210	51,021	115,200	225.9	31.38			18.07	0.080	50	1,200		10
Boiler 2	3	N	Inclined Grate	11/30/04	30,859	48,087	112,457	220.4	30.61			18.70	0.085	50	1,200		10
Boiler 2	1	Total	Inclined Grate	11/15/00	39,007	---	129,600	252.4	35.06	50.50	0.2	49.61	0.197	55	800		
Boiler 2	2	Total	Inclined Grate	11/15/00	38,491	---	128,800	250.8	34.83	50.15	0.2	45.93	0.183	55	800		
Boiler 2	3	Total	Inclined Grate	11/15/00	38,579	---	127,200	247.9	34.43	49.55	0.2	36.02	0.137	55	800		
Boiler 2	1	Total	Inclined Grate	11/20/02	38,817	61,844	124,800	245.0	34.02	49.00	0.2	45.13	0.184	56	800		
Boiler 2	2	Total	Inclined Grate	11/20/02	39,273	63,555	125,600	247.0	34.31	49.40	0.2	45.18	0.184	55	800		
Boiler 2	3	Total	Inclined Grate	11/20/02	37,507	61,816	129,600	254.9	35.40	50.95	0.2	46.33	0.185	55	800		
Boiler 2	1	Total	Inclined Grate	12/11/03	38,745	55,786	118,576	232.9	32.34	46.55	0.2	51.71	0.223	65	800		
Boiler 2	2	Total	Inclined Grate	12/11/03	35,962	51,612	123,060	241.7	33.56	48.35	0.2	40.81	0.169	65	800		
Boiler 2	3	Total	Inclined Grate	12/11/03	36,836	52,753	123,323	241.8	33.58	48.35	0.2	44.63	0.185	65	800		
Boiler 2	1	Total	Inclined Grate	11/30/04	29,318	46,963	114,409	224.5	31.18	44.90	0.2	39.20	0.175	50	1,200		
Boiler 2	2	Total	Inclined Grate	11/30/04	31,050	49,554	115,939	227.2	31.56	45.45	0.2	35.21	0.155	50	1,200		
Boiler 2	3	Total	Inclined Grate	11/30/04	29,849	47,382	114,567	224.2	31.14	44.85	0.2	40.35	0.180	50	1,200		

Table B-1. Boiler PM Emission Tests, Osceola Farms Company

Unit	Run Number	Stack	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Average Liquid Pressure (psig)	Average Water Flow (gpm)	Average Pressure Drop (in. H_2O)	
										lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			S	N
Boiler 3	1		Inclined Grate	11/19/99	54,846	89,138	129,600	253.8	35.24	50.80	0.2	41.38	0.163		800	11.0	
Boiler 3	2		Inclined Grate	11/19/99	50,363	813,969	135,000	264.5	36.74	52.90	0.2	43.68	0.165		800	11.6	
Boiler 3	3		Inclined Grate	11/19/99	53,144	85,762	136,421	267.5	37.15	53.50	0.2	62.92	0.235		800	11.8	
Boiler 3	1		Inclined Grate	11/21/01	67,187	102,387	140,400	276.1	38.35	55.20	0.2	45.81	0.166	70	800	11.0	
Boiler 3	2		Inclined Grate	11/21/01	66,289	102,611	140,400	276.5	38.40	55.30	0.2	45.80	0.166	70	790	10.8	
Boiler 3	3		Inclined Grate	11/21/01	65,020	100,525	140,400	276.1	38.35	55.20	0.2	46.36	0.168	70	800	10.8	
Boiler 3	1		Inclined Grate	11/14/02	65,465	101,322	131,400	257.6	35.78	51.50	0.2	28.34	0.110	---	700	16.0	
Boiler 3	2		Inclined Grate	11/14/02	64,933	102,091	127,938	250.9	34.85	50.20	0.2	45.16	0.180	60	696	15.2	
Boiler 3	3		Inclined Grate	11/14/02	64,207	100,457	129,600	254.0	35.28	50.80	0.2	34.04	0.134	60	700	15.0	
Boiler 3	4		Inclined Grate	11/14/02	63,395	99,717	131,400	258.1	35.85	51.60	0.2	38.72	0.150	60	700	15.0	
Boiler 3	1		Inclined Grate	11/20/03	59,482	92,418	117,969	231.9	32.21	46.40	0.2	31.00	0.134	75	727	17.0	
Boiler 3	2		Inclined Grate	11/20/03	57,241	92,042	127,938	250.7	34.82	50.10	0.2	43.88	0.175	60	738	15.6	
Boiler 3	3		Inclined Grate	11/20/03	55,609	88,168	132,686	261.1	36.26	52.20	0.2	44.54	0.171	60	733	17.0	
Boiler 3	1		Inclined Grate	11/22/04	51,186	76,171	112,985	222.6	30.92	44.50	0.2	35.81	0.161	60	1,200	18.0	
Boiler 3	2		Inclined Grate	11/22/04	50,572	74,446	128,250	251.9	34.99	50.40	0.2	31.67	0.126	60	1,200	18.0	
Boiler 3	3		Inclined Grate	11/22/04	51,535	76,584	112,629	221.1	30.71	44.20	0.2	34.59	0.156	60	1,200	18.0	

Table B-1. Boiler PM Emission Tests, Osceola Farms Company

Unit	Run Number	Stack	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Average Liquid Pressure (psig)	Average Water Flow (gpm)	Average Pressure Drop (in. H_2O)	
										lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			S	N
Boiler 4	1		Horseshoe	11/10/99	47,279	75,473	135,000	259.0	35.97	77.70	0.3	34.18	0.132		645	15.0	16.0
Boiler 4	2		Horseshoe	11/10/99	55,983	88,573	138,000	264.6	36.75	79.40	0.3	38.34	0.145		677	15.0	16.0
Boiler 4	3		Horseshoe	11/10/99	59,723	94,766	133,269	255.4	35.47	76.60	0.3	43.71	0.171		675	15.0	16.0
Boiler 4	1		Horseshoe	11/06/00	59,127	—	135,000	263.4	36.58	79.00	0.3	71.03	0.270		620	14.0	14.0
Boiler 4	2		Horseshoe	11/06/00	58,832	---	136,500	266.4	37.00	79.90	0.3	54.79	0.206		608	13.4	13.6
Boiler 4	3		Horseshoe	11/06/00	59,410	---	133,500	260.9	36.24	78.30	0.3	70.14	0.269		600	13.4	13.4
Boiler 4	1		Horseshoe	11/08/02	61,959	96,079	118,500	232.9	32.35	69.90	0.3	44.99	0.193		750	13.0	14.0
Boiler 4	2		Horseshoe	11/08/02	62,447	99,794	115,500	226.3	31.43	67.90	0.3	42.07	0.186		750	13.0	12.8
Boiler 4	3		Horseshoe	11/08/02	64,692	103,761	115,500	226.7	31.49	68.00	0.3	45.45	0.201		750	14.0	13.8
Boiler 4	1		Horseshoe	11/12/03	57,721	92,937	129,600	253.0	35.14	75.90	0.3	40.82	0.161	45	800	13.0	14.0
Boiler 4	2		Horseshoe	11/12/03	60,409	95,742	122,143	238.4	33.11	71.50	0.3	41.96	0.176	45	800	13.0	14.0
Boiler 4	3		Horseshoe	11/12/03	58,659	94,711	133,174	260.9	36.24	78.30	0.3	39.99	0.153	45	800	13.0	14.0
Boiler 4	1		Horseshoe	11/12/04	62,245	98,250	114,923	224.9	31.24	67.50	0.3	55.27	0.246	50	565	14.0	14.0
Boiler 4	2		Horseshoe	11/12/04	67,559	103,443	111,000	217.3	30.18	65.20	0.3	54.99	0.253	50	573	14.0	14.0
Boiler 4	3		Horseshoe	11/12/04	64,466	101,129	113,538	222.4	30.89	66.70	0.3	49.94	0.225	50	568	14.0	14.0

Table B-1. Boiler PM Emission Tests, Osceola Farms Company

Unit	Run Number	Stack	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Average Liquid Pressure (psig)	Average Water Flow (gpm)	Average Pressure Drop (in. H_2O)	
										lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			S	N
Boiler 5	1	W	Horseshoe	11/02/00	34,710		140,400	275.4	38.25			17.32	0.063	55	650	9.0	
Boiler 5	2	W	Horseshoe	11/02/00	35,125		145,800	285.8	39.69			19.63	0.069	55	650	9.0	
Boiler 5	3	W	Horseshoe	11/02/00	35,757		144,000	282.2	39.19			23.04	0.082	55	650	9.0	
Boiler 5	1	W	Horseshoe	11/06/02	36,003	54,985	147,600	289.6	40.22			22.80	0.079		750	10.0	
Boiler 5	2	W	Horseshoe	11/06/02	36,779	56,806	154,800	303.9	42.21			21.93	0.072		750	10.0	
Boiler 5	3	W	Horseshoe	11/06/02	35,544	57,397	144,000	282.6	39.25			20.78	0.074		750	10.0	
Boiler 5	1	W	Horseshoe	11/18/03	35,892	55,554	138,857	275.1	38.21			18.61	0.068	75	800	12.0	
Boiler 5	2	W	Horseshoe	11/18/03	35,849	56,548	137,908	273.4	37.97			18.30	0.067	75	800	12.0	
Boiler 5	3	W	Horseshoe	11/18/03	37,386	57,797	132,686	262.8	36.50			20.80	0.079	75	800	12.0	
Boiler 5	1	W	Horseshoe	11/10/04	37,281	55,432	136,246	273.4	37.97			25.18	0.092	70	528	11.0	
Boiler 5	2	W	Horseshoe	11/10/04	38,377	55,600	139,569	276.3	38.38			20.15	0.073	70	530	11.0	
Boiler 5	3	W	Horseshoe	11/10/04	37,670	55,632	137,314	271.9	37.76			20.53	0.076	70	541	11.0	
Boiler 5	1	E	Horseshoe	11/02/00	35,470		142,200	280.1	38.90			23.61	0.084	55	650	11.0	
Boiler 5	2	E	Horseshoe	11/02/00	37,024		145,800	286.3	39.76			26.34	0.092	55	650	11.0	
Boiler 5	3	E	Horseshoe	11/02/00	36,690		144,000	282.6	39.25			22.03	0.078	55	650	11.0	
Boiler 5	1	E	Horseshoe	11/06/02	40,636	63,148	151,200	296.5	41.18			18.73	0.063		750	11.5	
Boiler 5	2	E	Horseshoe	11/06/02	41,382	64,971	145,800	286.0	39.72			20.50	0.072		750	11.0	
Boiler 5	3	E	Horseshoe	11/06/02	41,971	64,236	144,000	282.6	39.25			20.84	0.074		750	11.0	
Boiler 5	1	E	Horseshoe	11/18/03	34,837	56,347	136,800	271.1	37.65			22.69	0.084	75	800	9.0	
Boiler 5	2	E	Horseshoe	11/18/03	35,905	57,018	138,600	274.6	38.14			22.86	0.083	75	800	10.0	
Boiler 5	3	E	Horseshoe	11/18/03	36,477	56,899	142,200	281.8	39.14			20.34	0.072	75	800	10.0	
Boiler 5	1	E	Horseshoe	11/11/04	42,035	67,016	137,908	273.3	37.96			26.45	0.097	70	527	11.0	
Boiler 5	2	E	Horseshoe	11/11/04	40,470	62,452	131,262	259.8	36.08			22.76	0.088	70	537	11.0	
Boiler 5	3	E	Horseshoe	11/11/04	38,977	58,705	127,938	253.3	35.18			23.50	0.093	70	527	12.0	
Boiler 5	1	Total	Horseshoe	11/02/00	35,090	---	141,300	277.8	38.58	55.55	0.2	40.93	0.147	55	650		
Boiler 5	2	Total	Horseshoe	11/02/00	36,075	---	145,800	286.1	39.73	57.25	0.2	45.97	0.161	55	650		
Boiler 5	3	Total	Horseshoe	11/02/00	36,223	---	144,000	282.4	39.22	56.45	0.2	45.07	0.160	55	650		
Boiler 5	1	Total	Horseshoe	11/06/02	38,320	59,067	149,400	293.1	40.70	58.60	0.2	41.53	0.142		750		
Boiler 5	2	Total	Horseshoe	11/06/02	39,080	60,889	150,300	295.0	40.97	59.00	0.2	42.43	0.144		750		
Boiler 5	3	Total	Horseshoe	11/06/02	38,757	60,817	144,000	282.6	39.25	56.50	0.2	41.62	0.148		750		
Boiler 5	1	Total	Horseshoe	11/18/03	35,365	55,951	137,829	273.1	37.93	54.60	0.2	41.30	0.152	75	800		
Boiler 5	2	Total	Horseshoe	11/18/03	35,877	56,783	138,254	274.0	38.06	54.80	0.2	41.16	0.150	75	800		
Boiler 5	3	Total	Horseshoe	11/18/03	36,932	57,348	137,443	272.3	37.82	54.50	0.2	41.14	0.151	75	800		
Boiler 5	1	Total	Horseshoe	11/11/04	39,658	61,224	137,077	273.4	37.97	54.70	0.2	51.63	0.189	70	527		
Boiler 5	2	Total	Horseshoe	11/11/04	39,424	59,026	135,416	268.1	37.23	53.65	0.2	42.91	0.161	70	537		
Boiler 5	3	Total	Horseshoe	11/11/04	38,323	57,169	132,626	262.6	36.47	52.55	0.2	44.03	0.169	70	527		

Table B-1. Boiler PM Emission Tests, Osceola Farms Company

Unit	Run Number	Stack	Boiler Type	Test Date	Stack Gas Flow Rate (dscfm)	Stack Gas Flow Rate (acfm)	Steam Rate (lb/hr)	Heat Input Rate (MMBtu/hr)	Bagasse Burning Rate [1] (TPH)	Allowable PM Emissions (EPA Method 5)		Actual PM Emissions (EPA Method 5)		Average Liquid Pressure (psig)	Average Water Flow (gpm)	Average Pressure Drop (in. H_2O)	
										lb/hr	lb/MMBtu	lb/hr	lb/MMBtu			S	N
Boiler 6	1		Traveling Grate	11/08/00	67,899	---	165,000	317.1	44.04	47.60	0.15	34.78	0.110		726	14.0	
Boiler 6	2		Traveling Grate	11/08/00	68,459	---	160,000	326.6	45.36	49.00	0.15	30.64	0.094	55	725	14.0	
Boiler 6	3		Traveling Grate	11/08/00	68,942	---	170,000	307.2	42.67	46.10	0.15	23.53	0.077	55	725	14.0	
Boiler 6	1		Traveling Grate	11/12/02	69,384	105,372	147,500	289.2	40.17	43.40	0.15	37.70	0.130	---	800	14.0	
Boiler 6	2		Traveling Grate	11/12/02	68,348	104,652	137,500	269.4	37.42	40.40	0.15	34.02	0.126	---	800	14.0	
Boiler 6	3		Traveling Grate	11/12/02	68,174	104,894	142,500	279.2	38.78	41.90	0.15	35.23	0.126	---	800	14.0	
Boiler 6	1		Traveling Grate	11/14/03	59,626	90,777	147,857	290.6	40.36	43.60	0.15	33.50	0.115	70	800	15.5	
Boiler 6	2		Traveling Grate	11/14/03	59,319	91,150	143,077	281.2	39.06	42.20	0.15	33.54	0.119	70	800	15.0	
Boiler 6	3		Traveling Grate	11/14/03	60,548	92,437	141,429	277.9	38.60	41.70	0.15	37.39	0.135	70	800	15.0	
Boiler 6	1		Traveling Grate	11/17/04	64,264	100,036	152,143	301.7	41.90	45.30	0.15	43.23	0.143	60	1,200	18.0	
Boiler 6	2		Traveling Grate	11/17/04	65,197	100,252	152,143	300.8	41.78	45.10	0.15	42.57	0.142	60	1,200	18.0	
Boiler 6	3		Traveling Grate	11/17/04	65,965	103,257	156,923	310.3	43.10	46.60	0.15	44.99	0.145	60	1,200	18.0	

Note: lb/hr = pounds per hour.
lb/MMBtu = pounds per million British thermal units.
lb/ton = pounds per ton.
MMBtu/hr = million British thermal units per hour.
TPH = tons per hour.

Footnote:

[1] Assumed 3,600 Btu/lb average heat content for wet bagasse, except where noted.