Section 6 – Test Results Summary

Table 17: Unit 3 Average Test Data Results

Description of Parameter Measured	Units of Measure	Unit 3			
		Baseline	De-Energized Point 1	De-Energized Point 2	De-Energized Point 3
Flue Temperature	°F	281.8	282.7	282.7	293.0
Volume of Flue Gas	acfm	191,738	172,993	171,449	171,911
Volume of Flue Gas	dscfm	121,987	111,000	108,965	107,070
O_2%, dry	%	5.60	5.47	5.63	5.47
CO_2%, dry	%	13.78	13.80	13.63	13.73
Dust Concentration	lb/dscf	8.42E-06	9.70E-06	1.21E-05	1.67E-05
Dust Concentration	lb/hr	61.47	64.70	79.49	107.76
Dust Concentration	grs/acf	0.059	0.066	0.084	0.114
Dust Concentration	grs/dscf	0.059	0.068	0.085	0.117
Particulate Emissions	lbs/mBtu	0.113	0.129	0.163	0.222
Opacity%	%	15.73	21.43	30.17	39.53

Table 18: Previous Unit 3 Baseline Tests[1]

Date(s) of Testing	Average Opacity Data	PM Emission Rate	Gross Load
	(Percent)	(lb/mmBtu)	(MW)
2/27/79	N/A	0.021	44
2/27/79	N/A	0.018	44
2/27/79	N/A	0.016	44

[1]Testing conducted by Performance Testing Consultants, Inc.

Table 19: Unit 4 Average Test Data Results

Description of Parameter Measured	Units of Measure	Unit 4				
		Baseline[1]	De-Energized Point 1	De-Energized Point 2	De-Energized Point 3[1]	De-Energized Point 4
Flue Temperature	°F	309.3	316.0	306.7	309.3	302.8
Volume of Flue Gas	Acfm	229,496	240,143	238,759	234,146	221,521
Volume of Flue Gas	dscfm	140,040	144,804	144,550	140,720	137,510
O_2%, dry	%	6.13	6.43	6.10	6.00	5.78
CO_2%, dry	%	13.20	12.87	13.20	13.23	13.44
Dust Concentration	lb/dscf	7.56E-06	3.49E-05	2.21E-05	9.72E-06	1.66E-05
Dust Concentration	lb/hr	63.56	304.06	191.63	82.35	137.96
Dust Concentration	grs/acf	0.051	0.232	0.148	0.066	0.112
Dust Concentration	grs/dscf	0.053	0.245	0.155	0.068	0.116
Particulate Emissions	lbs/mBtu	0.105	0.494	0.305	0.134	0.225
Opacity%	%	10.57	41.50	27.10	19.53	23.72

[1]Run 1 (Baseline) and Run 13 (De-Energized Point No. 3) were considered outliers and not considered in the average data. Efforts were made to maintain a steady-state of operation during each test run. Manual sampling errors may have occurred.

Table 20: Previous Unit 4 Baseline Tests[1]

Date(s) of Testing	Average Opacity Data	PM Emission Rate	Gross Load
	(Percent)	(lb/mmBtu)	(MW)
10/6/76	N/A	0.090	N/A
10/6/76	N/A	0.046	N/A
10/6/76	N/A	0.059	N/A

[1]Testing conducted by Burns & McDonnell.

Table 21: Unit 5 Average Test Data Results

Description of Parameter Measured	Units of Measure	Unit 5			
		Baseline	De-Energized Point 1	De-Energized Point 2	De-Energized Point 3
Flue Temperature	°F	365.7	374.0	358.0	363.3
Volume of Flue Gas	acfm	463,213	464,545	444,608	457,050
Volume of Flue Gas	dscfm	263,460	259,958	258,449	261,229
O_2%, dry	%	5.40	5.33	5.35	5.47
CO_2%, dry	%	13.80	13.83	13.83	13.73
Dust Concentration	lb/dscf	5.46E-06	1.80E-05	1.32E-05	1.19E-05
Dust Concentration	lb/hr	86.47	281.50	206.08	186.89
Dust Concentration	grs/acf	0.037	0.120	0.090	0.081
Dust Concentration	grs/dscf	0.038	0.126	0.093	0.084
Particulate Emissions	lbs/mBtu	0.072	0.237	0.175	0.158
Opacity%	%	6.83	28.57	25.38	22.10

Table 22: Previous Unit 5 Baseline Tests

Date(s) of Testing	Average Opacity Data	PM Emission Rate	Gross Load
	(Percent)	(lb/mmBtu)	(MW)
7/94	N/A	0.030	High-load

Figure 5: Unit 3 Average Data Results (Test and Cap)

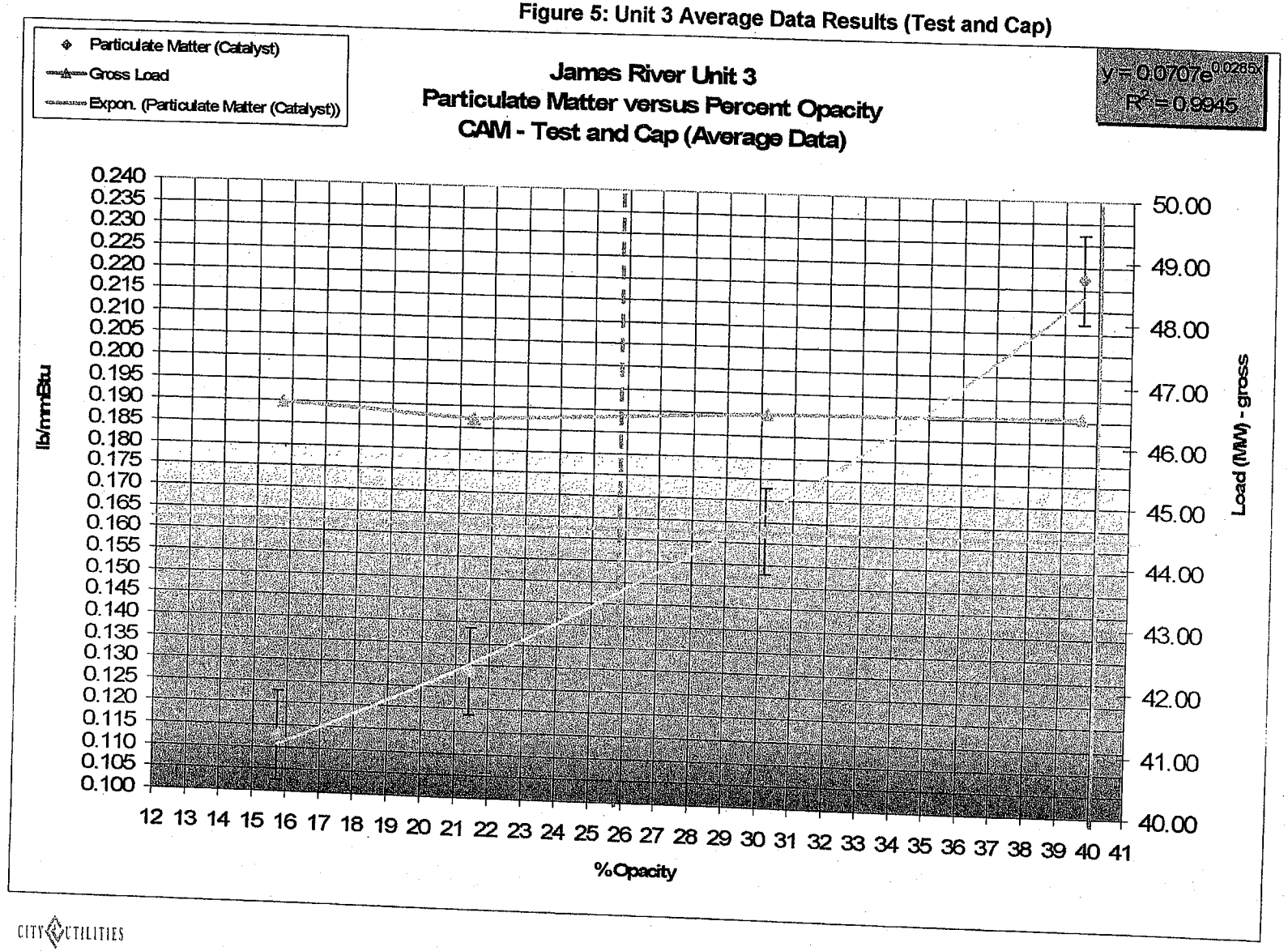

Table 23: CAM/PM PERFORMANCE TESTING (James River Unit 3)

Test Date	Run No.	Particulate Matter (PM) Emissions		Opacity	Stack Testing Company
		lb/hr	lb/mmBtu	%	
5/16/2005	1	51.08	0.107	14.40	Catalyst Air Management
5/16/2005	2	64.75	0.134	15.70	Catalyst Air Management
5/16/2005	3	50.18	0.104	16.40	Catalyst Air Management
5/16/2005	4	79.23	0.107	16.40	Catalyst Air Management
5/16/2005	5	60.30	0.119	20.50	Catalyst Air Management
5/16/2005	6	65.04	0.130	21.90	Catalyst Air Management
5/16/2005	7	68.40	0.138	21.90	Catalyst Air Management
5/17/2005	8	76.70	0.156	27.10	Catalyst Air Management
5/17/2005	9	80.65	0.164	30.30	Catalyst Air Management
5/17/2005	10	80.84	0.168	33.10	Catalyst Air Management
5/17/2005	11	95.99	0.197	37.00	Catalyst Air Management
5/17/2005	12	122.18	0.252	40.50	Catalyst Air Management
5/17/2005	13	104.28	0.217	41.10	Catalyst Air Management

***NOTE: Stack data bolded and color-coded were plotted on the graphs below but not used to develop curve trend because of precision and accuracy of the data and inconsistencies between previously sampled data and the corresponding opacity averages over the test period. Figure 6 shows 1-minute average opacity data collected during the CAM test run. Test results in Figure 5 show 6-minute opacity average data.**

Figure 6: PM EMISSIONS VERSUS OPACITY (James River Unit 3)

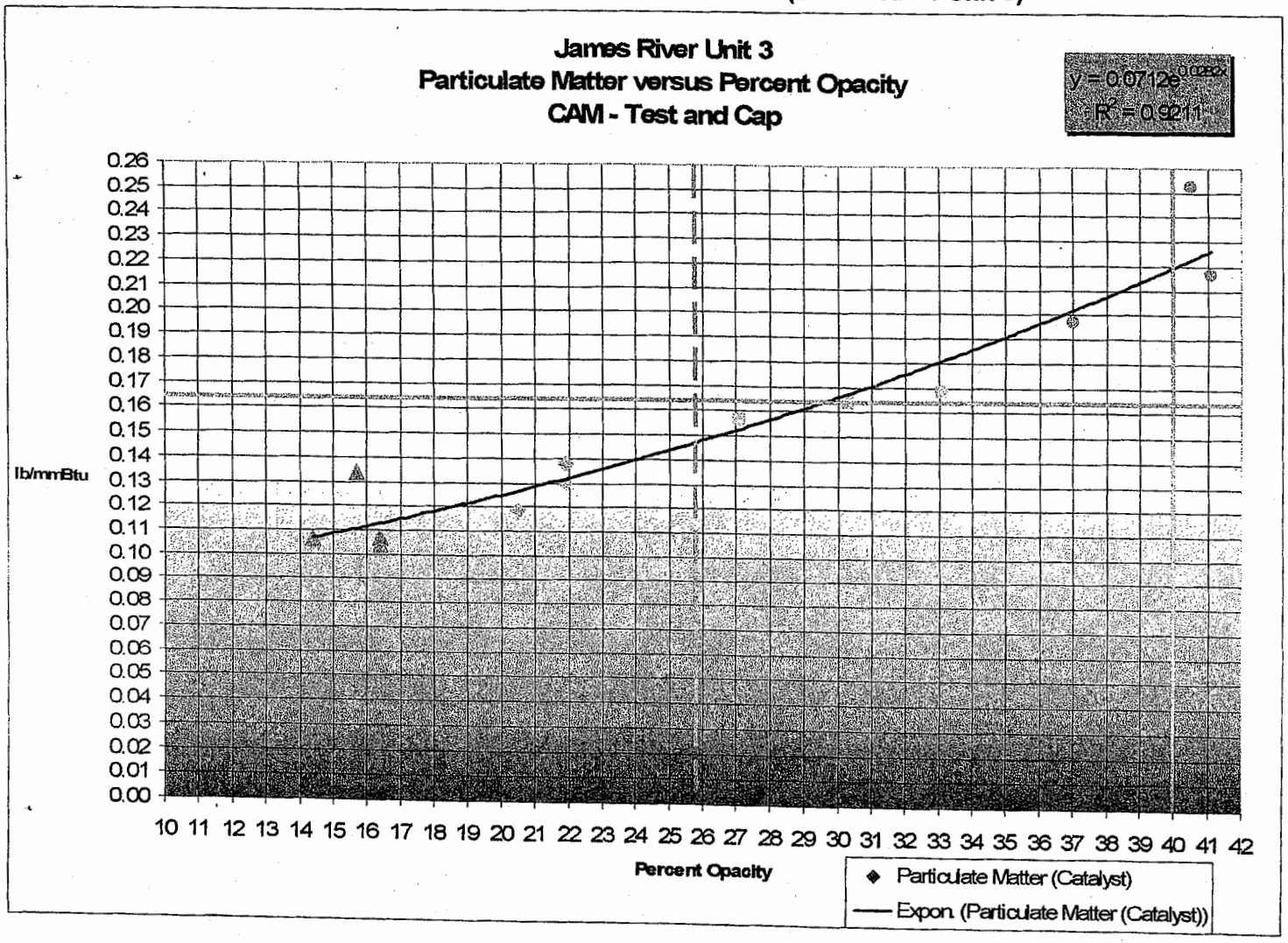

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Figure 7: Unit 4 Average Data Results (Test and Cap)

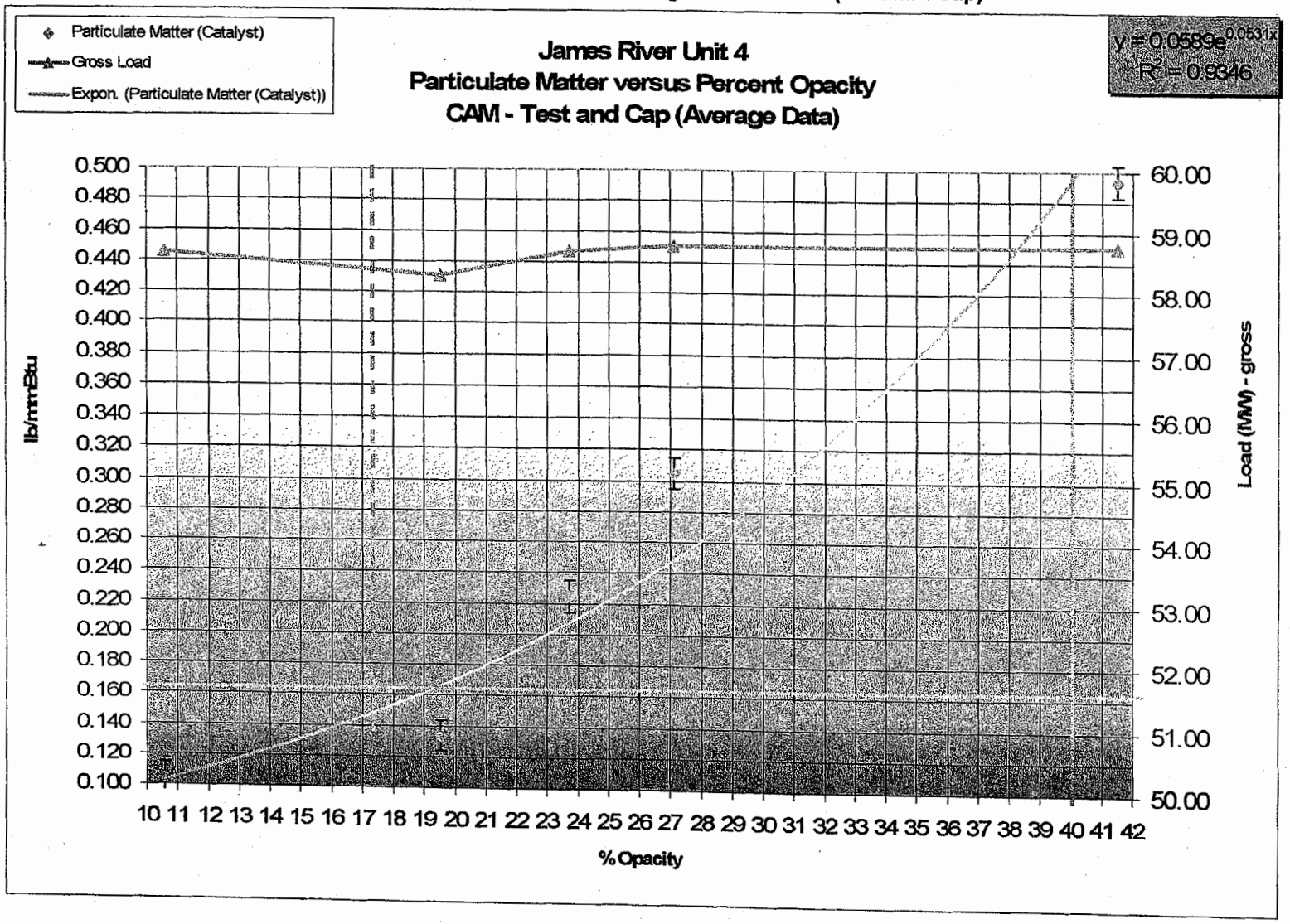

Table 24: CAM/PM PERFORMANCE TESTING (James River Unit 4)

Test Date	Run No.	Particulate Matter (PM) Emissions		Opacity	Stack Testing Company
		lb/hr	lb/mmBtu	%	
5/12/2005	1	97.31	**0.160**	11.50	Catalyst Air Management
5/12/2005	2	70.79	0.115	10.90	Catalyst Air Management
5/12/2005	3	64.47	0.114	10.40	Catalyst Air Management
5/12/2005	4	52.24	0.086	10.40	Catalyst Air Management
5/12/2005	5	305.15	0.502	40.20	Catalyst Air Management
5/12/2005	6	220.80	0.362	39.60	Catalyst Air Management
5/12/2005	7	384.96	0.617	44.70	Catalyst Air Management
5/12/2005	8	185.17	0.297	27.50	Catalyst Air Management
5/12/2005	9	253.22	0.403	29.00	Catalyst Air Management
5/12/2005	10	135.32	0.216	24.80	Catalyst Air Management
5/13/2005	11	79.50	0.130	20.00	Catalyst Air Management
5/13/2005	12	79.02	0.129	19.30	Catalyst Air Management
5/13/2005	13	127.28	**0.210**	23.60	Catalyst Air Management
5/13/2005	14	87.91	0.143	19.30	Catalyst Air Management
5/13/2005	15	220.50	0.345	28.10	Catalyst Air Management
5/13/2005	16	114.70	0.197	18.90	Catalyst Air Management
5/13/2005	17	112.82	0.193	20.00	Catalyst Air Management
5/19/2005	18	104.27	0.168	24.90	Catalyst Air Management
5/19/2005	19	136.18	0.221	26.70	Catalyst Air Management

*NOTE: **Stack data bolded and color-coded were plotted on the graphs below but not used to develop curve trend because of precision and accuracy of the data and inconsistencies between previously sampled data and the corresponding opacity averages over the test period. Figure 8 shows 1-minute average opacity data collected during the CAM test run. Test results in Figure 7 show 6-minute opacity average data.**

Figure 8: PM EMISSIONS VERSUS OPACITY (James River Unit 4)

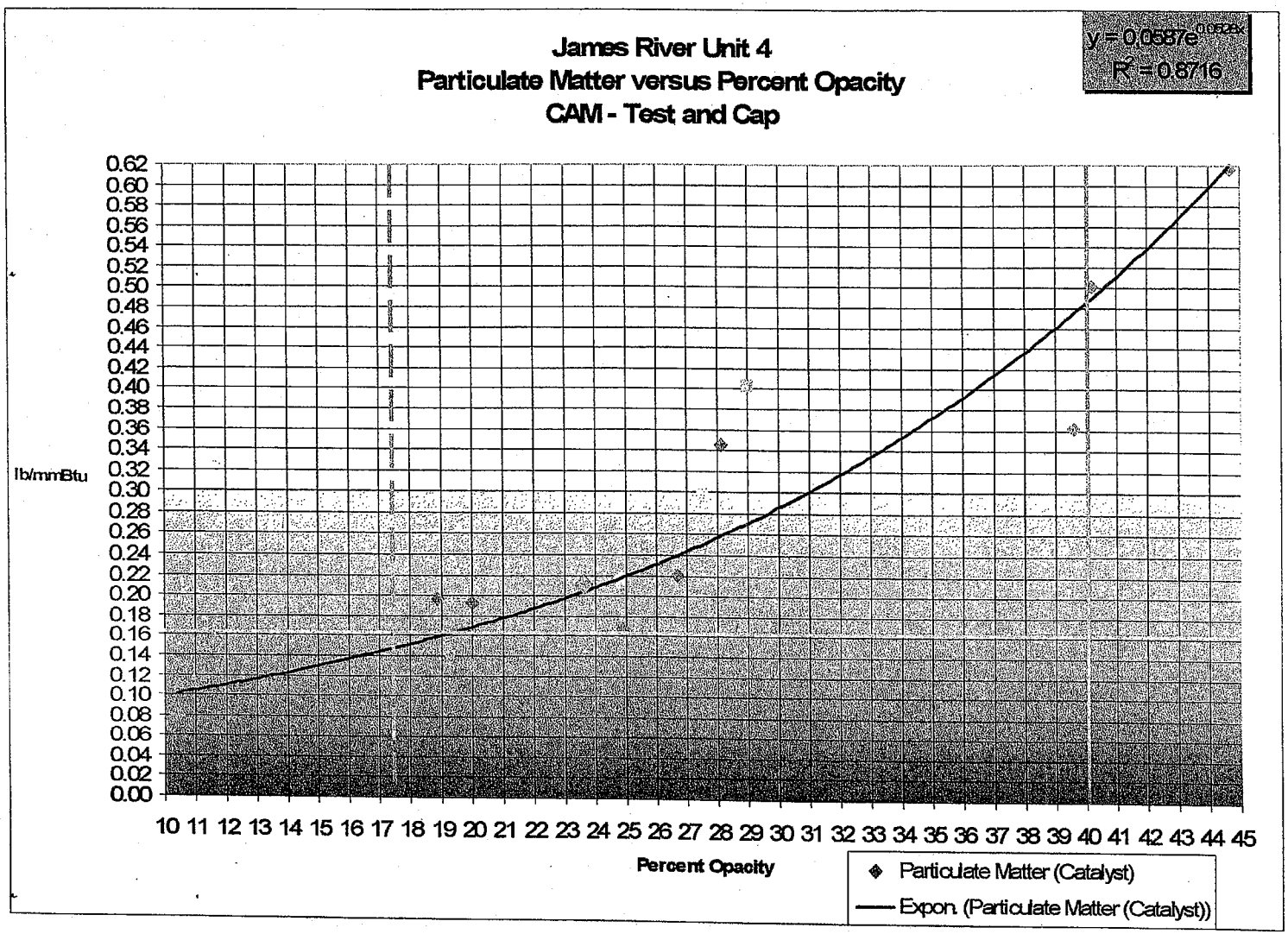

Figure 9: Unit 5 Average Data Results (Test and Cap)

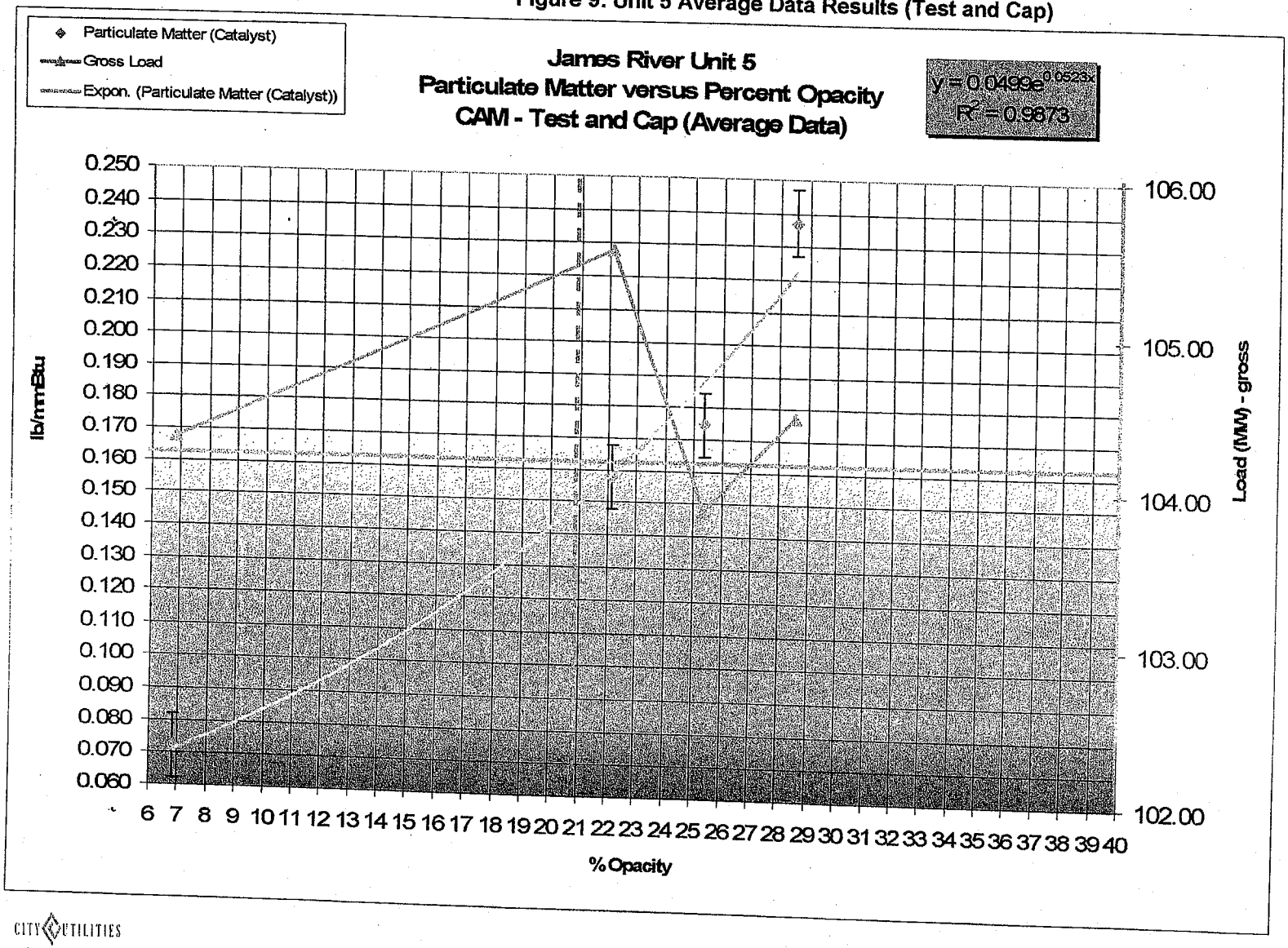

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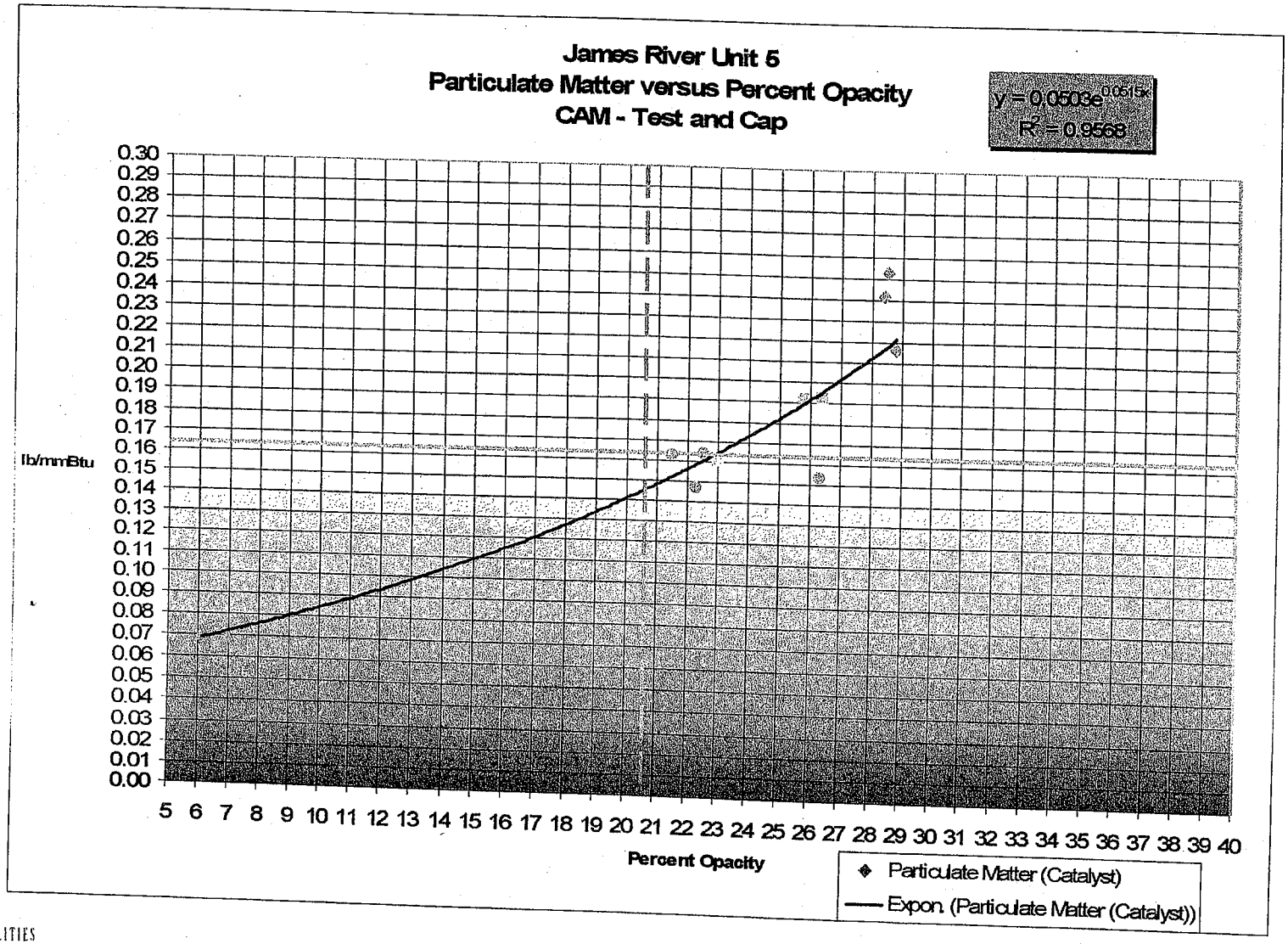
Table 25: CAM/PM PERFORMANCE TESTING (James River Unit 5)

Test Date	Run No.	Particulate Matter (PM) Emissions		Opacity	Stack Testing Company
		lb/hr	lb/mmBtu	%	
5/23/2005	1	83.13	0.070	6.90	Catalyst Air Management
5/23/2005	2	85.35	0.071	6.10	Catalyst Air Management
5/23/2005	3	90.26	0.076	7.50	Catalyst Air Management
5/23/2005	4	286.12	0.242	28.40	Catalyst Air Management
5/23/2005	5	257.48	0.217	28.80	Catalyst Air Management
5/23/2005	6	298.74	0.253	28.50	Catalyst Air Management
5/24/2005	7	182.79	0.160	23.00	Catalyst Air Management
5/24/2005	8	226.46	0.192	25.80	Catalyst Air Management
5/24/2005	9	227.56	0.192	26.40	Catalyst Air Management
5/24/2005	10	173.89	0.147	22.30	Catalyst Air Management
5/24/2005	11	191.79	0.164	22.50	Catalyst Air Management
5/24/2005	12	193.54	0.163	21.50	Catalyst Air Management
5/25/2005	13	185.40	0.154	26.30	Catalyst Air Management

*NOTE: **Stack data bolded and color-coded were plotted on the graphs below but not used to develop curve trend because of precision and accuracy of the data and inconsistencies between previously sampled data and the corresponding opacity averages over the test period. Figure 10 shows 1-minute average opacity data collected during the CAM test run. Test results in Figure 9 show 6-minute opacity average data.**

Figure 10: PM EMISSIONS VERSUS OPACITY (James River Unit 5)



STATEMENT OF BASIS

Permit Reference Documents
These documents were relied upon in the preparation of the operating permit. Because they are not incorporated by reference, they are not an official part of the operating permit.

1) Part 70 Operating Permit Application, received December 14, 2005;
2) 2004 Emissions Inventory Questionnaire, received March 31, 2005;
3) U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*; Volume I, Stationary Point and Area Sources, Fifth Edition.
4) 2001 Consent Agreement
5) Compliance Assurance Monitoring (CAM) Plan
6) Construction Permit 1085-002A, issued October 7, 1985
7) Construction Permit 0888-002A, issued August 15, 1988
8) Construction Permit 0391-002, issued March 6, 1991
9) Construction Permit 0697-008, issued May 27, 1997
10) Construction Permit 042000-016, issued April 14, 2000
11) Construction Permit 082001-003, issued July 12, 2001
12) Construction Permit 032003-017, issued January 31, 2003
13) Acid Rain Permit

Applicable Requirements Included in the Operating Permit but Not in the Application or Previous Operating Permits
In the operating permit application, the installation indicated they were not subject to the following regulation(s). However, in the review of the application, the agency has determined that the installation is subject to the following regulation(s) for the reasons stated.

1) City of Springfield Code, Chapter 6, Article III, Division 4, *Particulate Matter from Industrial Processes,* is applicable to Coal Unloading and Transfer (EU0010 through EU0030) and the Fly Ash Collection System (EU0100 through EU0120). The provisions of the rule are listed under Permit Condition (EU0100-EU0120)-003.

Other Air Regulations Determined Not to Apply to the Operating Permit
The Air Pollution Control Program has determined the following requirements to not be applicable to this installation at this time for the reasons stated.

1) 10 CSR 10-6.100, *Alternate Emission Limits,* is not applicable because the installation is in an ozone attainment area.

2) 40 CFR Part 60 Subpart K, *Standards of Performance For Storage Vessels For Petroleum Liquids For Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior To May 19, 1978*, was checked as applicable on the permit application's Form OP-B02 - Applicable Requirement Checklist. However, this regulation does not apply. The only storage tank that was constructed after June 11, 1973, and prior to May 19, 1978, is EP10 which is a 587,200-gallon storage tank that stores No. 2 fuel oil. No. 2 fuel oil is not included in the definition of "petroleum liquids".

Construction Permit Revisions
The following revisions were made to construction permits for this installation:

1) Construction Permit 1085-002A authorized the installation of a dry fly ash collection system which consisted of pneumatic pipeline conveyors from the precipitator hoppers of Boilers 3, 4, and 5 to a storage silo.
   a) This permit established a maximum fly ash collection limit, along with record keeping and reporting requirements. However, these requirements are no longer applicable and were not included in the operating permit because the fly ash system was replaced. In 2003, construction permit 032003-017 was issued which authorized a new Fly Ash Collection System (EU0100 through EU0120) that pneumatically conveys the fly ash from the electrostatic precipitators to dry storage silos.

2) Construction Permit 0888-002A authorized the construction of Combustion Turbine 1 (EU0080).
   a) This permit established several special conditions. However, these special conditions were not included in this operating permit because construction permit 0391-002 revised the special conditions applicable to Combustion Turbine 1 (EU0080).

3) Construction Permit 0391-002 authorized the construction of Combustion Turbine 2 (EU0090) and revised the conditions for Combustion Turbine 1 (EU0080).
   a) This permit listed 10 CSR 10-4.190, *Restriction of Emission of Sulfur Compounds from Indirect Heating Sources,* as an applicable requirement. However, this regulation was rescinded on July 30, 1997.
   b) Special Condition 12 on the permit states "Through 10 CSR 10-6.070, Combustion Turbine 1 and Combustion Turbine 2 are subject to the requirement of 40 CFR 60.334(c). The notification and recordkeeping of requirements of 40 CFR 60.7(c) shall be adhered to as they pertain to 40 CFR 60.334(c). Briefly, this requires that quarterly reports be submitted to the director, within thirty days after the end of each quarter, detailing any exceedances of applicable emission limits." However, 40 CFR 60.334(c) only applies to turbines which do not use steam or water injection to control NO_X emissions. Combustion Turbine 1 (EU0080) and Combustion Turbine 2 (EU0090) use water injection to control NO_X emissions. Therefore, this condition was not included in this operating permit.

4) Construction Permit 042000-016 authorized the installation of a water fogging system to the air inlet of Combustion Turbine 2 (EU0090).
   a) This permit included special conditions requiring performance testing to be conducted within ninety days after the fogger initial start-up date. These special conditions were not included in this operating permit because the performance testing has already been conducted.

5) Construction Permit 082001-003 authorized the modification of the handling capacity of coal unloading system from rail road cars to the storage area, by upgrading feeders and belt drivers.
   a) The permit listed 10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*, as an applicable requirement. However, 10 CSR 10-6.400(1)(B)12 exempts grinding, crushing and conveying operations at a power plant. Therefore, this regulation is not applicable to Coal Unloading and Transfer (EU0010 through EU0030).

b) Special Condition 1.A established a PM_{10} emission limit of fifteen tons per twelve consecutive months from "the combined contributions from coal unloading (EP-01), bituminous and sub-bituminous coal conveyors (EP-03 and EP-28)". However, the permit's Attachment A - PM_{10} Emissions Tracking Worksheet did not include EP-03. In the worksheet included with this operating permit, additional columns were added to track emissions from EP-03. (see Attachment B-1)

c) Special Condition 1E of this permit states: "If a continuing situation of demonstrated nuisance odors exists in violation of Missouri State Rule 10 CSR 10-4.070, "Restriction of Emission of Odors", the director may require James River Power Station to submit a corrective action plan within ten days adequate to timely and significantly mitigate the odors. James River Power Station shall implement any such plan immediately upon its approval by the director. Failure to either submit or implement such a plan shall be a violation of permit 082001-003 and this permit." This permit condition was not included in Permit Condition (EU0010 through EU0030)-001 because the same requirement is included in the Core Permit Requirements.

6) Construction Permit 032003-017 authorized the modification of the Fly Ash Collection System to a dry pneumatic conveying system.

a) The permit listed 10 CSR 10-6.400, *Restriction of Emission of Particulate Matter from Industrial Processes*, as an applicable requirement. However, 10 CSR 10-6.400(1)(B)12 exempts grinding, crushing and conveying operations at a power plant. Therefore, this regulation is not applicable to the Fly Ash Collection System (EU0100 through EU0120).

b) This permit was amended on June 18, 2004 (Missouri Department of Natural Resources' project 2004-05-124) to account for as-built changes in the fly ash collection system equipment. In the construction permit application, the original design contained a DustMaster wet rotary conditioner (agglomerator) with a United Conveyor storage and unloading system. However, the permittee installed a United Conveyor paddle mixer with the same control efficiency as the DustMaster agglomerator. In addition, the size of the ash storage tanks was reduced from tons each to 225 tons each. These changes are reflected in Permit Condition (EU0100 through EU0120)-001.

New Source Performance Standards (NSPS) Applicability

1) 40 CFR Part 60 Subpart K, *Standards of Performance For Storage Vessels For Petroleum Liquids For Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior To May 19, 1978*, is not applicable to the 587,200-gallon storage tank (EP10) which was constructed after May 19, 1973, and prior to May 19, 1978, because the storage tank stores No. 2 fuel oil which is not included in the definition of "petroleum liquids".

2) 40 CFR Part 60 Subpart Ka, *Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984,* and 40 CFR Part 60 Subpart Kb, *Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984,* are not applicable to the 587,200-gallon storage tank (EP10) because the storage tank was constructed prior to May 19, 1978.

There are no other tanks at the installation that meet the applicability requirements of these regulations.

3) 40 CFR Part 60 Subpart D, *Standards of Performance for Fossil Fuel Fired Steam Generators constructed after August 17, 1971*, 40 CFR Part 60 Subpart Da, *Standards of Performance for Electric Utility Steam Generating Units for Which Construction is Commenced After September 18, 1978,* 40 CFR Part 60 Subpart Db, *Standards of Performance for Industrial, Commercial, Institutional Steam Generating Units for Which Construction is Commenced After June 19, 1984,* and 40 CFR Part 60 Subpart Dc, *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units constructed after June 9, 1989*, are not applicable to this installation's boilers because they were all constructed prior to the regulations' applicability dates.

4) 40 CFR Part 60 Subpart Y, *Standards of Performance for Coal Preparation Plants,* is not applicable to EU0010 through EU0030 because these units were not constructed after October 24, 1974. EU0350 – Coal Crusher which was constructed in 2007 is subject to this Subpart.

5) 40 CFR Part 60 Subpart GG, *Standards of Performance for Stationary Gas Turbines,* is applicable to Combustion Turbines 1 and 2 (EU0080 and EU0090). However, the NO_X emissions limitations in subpart GG are less stringent than the emission limitations required by construction permit 0391-002. (See calculations under Other Regulatory Determinations, bullet 4) Therefore, the more stringent NO_X emission limitations established by construction permit 0391-002 are listed in Permit Condition (EU0080 and EU0090)-001.

6) 40 CFR Part 60 Subpart KKKK, *Standards of Performance for Stationary Combustion Turbines,* is not applicable to Combustion Turbines 1 and 2 (EU0080 and EU0090) because the proposed rule would apply to new stationary combustion turbines that commenced construction, modification, or reconstruction after February 18, 2005. Unless, the installation modifies or reconstructs the installation's combustion turbines, this regulation should not apply.

None of the other New Source Performance Standards (NSPS) apply to this installation.

Maximum Available Control Technology (MACT) Applicability

1) 40 CFR Part 63 Subpart ZZZZ, *National Emissions Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines,* is not applicable to the installation's emergency equipment (EU0130 and EU0140) because they have ratings of less than 500 brake horsepower.

2) 40 CFR Part 63 Subpart DDDDD, *National Emission Standards For Hazardous Air Pollutants For Industrial, Commercial, And Institutional Boilers And Process Heaters*
   a) Boilers 1 and 2 (EU0040 and EU0450) were subject to this regulation. However, as noted in Permit Condition (EU0040 through EU0045)-002, the United States Court of Appeals, District of Columbia Circuit ordered a full vacature of 40 CFR Part 63 Subpart DDDDD. The vacature has the same effect as if this MACT rule was never promulgated. This means there is no longer a September 13, 2007 compliance date for sources affected by this HAP source category. If and when the EPA promulgates an approved version of this MACT, emission units EU0040 and EU0045 will be reevaluated for applicability.

b) Boilers 3, 4, and 5 (EU0050 through EU0070) were never subject to this regulation because they are fossil fuel combustion units of more than twenty-five megawatts that serve as generators that produce electricity for sale.

3) 40 CFR part 63 Subpart YYYY, *National Emission Standards For Hazardous Air Pollutants For Stationary Combustion Turbines,* is not applicable to Combustion Turbine 1 (EU0080) and Combustion Turbine 2 (EU0090) because they are existing stationary turbines and per 40 CFR 63.6090(b)(4) existing stationary combustion turbines in all subcategories do not have to meet the applicability requirements of subpart YYYY and of subpart A of part 63. In addition, no initial notification is necessary for any existing stationary combustion turbine.

4) 40 CFR Part 63 Subpart UUUUU, *National Emission Standards for Coal- and Oil- Fired Electric Utility Steam Generating Units* ,was removed from the section 112(c) list of regulated source categories on March 29, 2005.

None of the other Maximum Achievable Control Technology Standards (MACT) apply to this installation.

National Emission Standards for Hazardous Air Pollutants (NESHAP) Applicability

In the permit application and according to Air Pollution Control Program records, there was no indication that any Missouri Air Conservation Law, Asbestos Abatement, 643.225 through 643.250; 10 CSR 10-6.080, Emission Standards for Hazardous Air Pollutants, Subpart M, National Standards for Asbestos; and 10 CSR 10-6.250, Asbestos Abatement Projects - Certification, Accreditation, and Business Exemption Requirements, apply to this installation. The installation is subject to these regulations if they undertake any projects that deal with or involve any asbestos containing materials. None of the installation's operating projects underway at the time of this review deal with or involve asbestos containing material. Therefore, the above regulations were not cited in the operating permit. If the installation should undertake any construction or demolition projects in the future that deal with or involve any asbestos containing materials, the installation must follow all of the applicable requirements of the above rules related to that specific project.

None of the other National Emission Standards for Hazardous Air Pollutants (NESHAP) apply to this installation.

Compliance Assurance Monitoring (CAM) Applicability
40 CFR Part 64, *Compliance Assurance Monitoring (CAM)*
The CAM rule applies to each pollutant specific emission unit that:

- Is subject to an emission limitation or standard, and
- Uses a control device to achieve compliance, and
- Has pre-control emissions that exceed or are equivalent to the major source threshold.

40 CFR Part 64, *Compliance Assurance Monitoring (CAM)*
Boilers 1 through 5 (EU0040 through EU0070) meet the applicability criteria for 40 CFR Part 64, *Compliance Assurance Monitoring (CAM),* because these units each have the uncontrolled potential to emit particulate matter above the major source threshold levels (as defined by Part 70) and utilize

control devices (as defined by 40 CFR 64.1) to comply with 10 CSR 10-4.040. Should EPA promulgate an approved version of the Boiler MACT (Subpart DDDDD), Boilers 1 and 2 (EU0040 and EU0045) will become subject to the MACT which will supercede the requirements of CAM.

The permittee submitted a Compliance Assurance Monitoring plan with the renewal permit application, on December 14, 2005. Approved conditions based on the Compliance Assurance Monitoring plan have been incorporated into Permit Conditions (EU0040-through EU0045)-001 and (EU0050 through EU0070)-001.

Other Regulatory Determinations

1) 10 CSR 10-4.040, *Maximum Allowable Emission of Particulate Matter from Fuel Burning Equipment Used for Indirect Heat,* and City of Springfield Code, Chapter 6, Article III, Division 3, *Particulate Matter from Fuel Burning Equipment,* are applicable to the boilers (EU0040 through EU0070). According to 10 CSR 10-4.040, the allowable particulate matter emission rate for the boilers is calculated as follows:

Calculating Total Heat Input (Q) for installation:

EU #	Description	MHDR (MMBtu/hr)
EU0040	Boiler 1	250
EU0045	Boiler 2	250
EU0050	Boiler 3	496
EU0060	Boiler 4	600
EU0070	Boiler 5	1000
	Space heaters	1.44
	Water Bath Vaporizers	29.6
	Total	2627.04

Calculating Allowable Emission Rate per 10 CSR 10-4.040:

$E\ (lb/MMBtu/hr) = 0.90\ (Q)^{-0.174}$

$E = 0.90\ (2627.04)^{-0.174}$

$E = 0.23$ lb/MMBtu

Calculating Allowable Emission Rate per Springfield Code:

According to the City of Springfield Code, the allowable particulate matter emission rate for the boilers is determined by interpolating between the values in Section 6-235(a)(5) and (6).

Section 6-235(a)(5)-No more than 0.17 pound for each million BTU total heat input from equipment having a total heat input of 2,000,000,000;

Section 6-235(a)(6)-No more than 0.14 pound for each million BTU total heat input from equipment having a total heat input of 5,000,000,000

[Note: There is a printing error in the Springfield code Section 6-235(a)(5) and (6), the values listed above have been corrected.]

Interpolating between 0.14 and 0.17, the allowable particulate matter emission rate for the boilers is determined to be 0.16 pounds per million BTu.

Conclusion:

Because 0.16 pounds per million BTu < 0.23 pounds per million BTu, the boilers must meet the more restrictive City of Springfield emission limit.

2) 10 CSR 10-6.220, *Restriction of Emissions of Visible Air Contaminants* and City of Springfield Code, Chapter 6, Article III, Division 2, *Visible Air Contaminants*
   a) 10 CSR 10-6.220(3)(B) allows for an sixty percent visible emission limitation exception for a period not aggregating more than one six-minute period in any sixty minutes. Whereas, City of Springfield Code, Chapter 6, Article III, Division 2, Section 6-213 only allows for a forty percent (or number 2 on the Ringelmann chart) visible emission limitation exception for a period not aggregating more than one six-minute period in any consecutive sixty minutes. The more restrictive limit of the city code is listed in the applicable permit conditions.
   b) Combustion Turbines 1 and 2 (EU0080 and EU0090) are not subject to 10 CSR 10-6.220 because per 10 CSR 10-6.220 (1)(A), internal combustion engines operated outside the Kansas City or St. Louis metropolitan area are exempt. However, City of Springfield Code, Chapter 6, Article III, Division 2 does not contain this exemption, therefore EU0080 and EU0090 are subject to the city code.

3) 10 CSR 10-6.260, *Restriction of Emission of Sulfur Compounds*, was listed by the permittee as applicable to the Combustion Turbines 1 and 2 (EU0080 and EU0090) in the permit application. However, per 10 CSR 10-6.260 (1)(A)1, emission sources subject to an applicable sulfur compound emission limit under 10 CSR 10-6.070 are exempt. Combustion Turbines 1 and 2 are subject to 10 CSR 10-6.070, 40 CFR Part 60, Subpart GG, and are therefore exempt from this regulation.

4) 40 CFR Part 60, Subpart GG, *Standards of Performance for Stationary Gas Turbines*, is applicable to Combustion Turbines 1 and 2 (EU0080 and EU0090). However, as shown in calculations below, the NO_X emission limits established in Permit Condition (EU0080 and EU0090)-001 and based on Construction Permit 0391-002 are more restrictive.

   Allowable Emission Rate per 40 CFR 60.332(a)(1)

   $STD = (0.0075)(14.4/Y) + F$

   Where:

   STD = allowable NO_X emissions (% by volume at fifteen percent oxygen and on a dry basis)

   Y = manufacture's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peak load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt-hour.

   Calculating Y:

   Given:

EU #	Heat input (MMBtu/hr)	Rated load (MW)
EU0080	991	75
EU0090	973	80

   Y for EU0080 = $(991 \times 10^6$ Btu/hr)(1.0548 kJ/Btu)$(1/72 \times 10^6$ W) = 14.5 kJ/W-hr

   Y for EU0090 = $(973 \times 10^6$ Btu/hr)(1.0548 kJ/Btu)$(1/75 \times 10^6$ W) = 13.7 kJ/W-hr

   Calculating STD (NOx Emission Limit):

   Assume no fuel bound N allowance, F=0

   STD for EU0080 = (0.0075)(14.4/Y) + F

   = (0.0075)(14.4/14.4)

   = 0.0075 % or 75 ppmv NO_X at 15 % oxygen

   STD for EU0090 = (0.0075)(14.4/Y) + F

   = (0.0075)(14.4/13.7)

   = 0.0079 % or 79 ppmv NO_X at 15 % oxygen

Conclusion:
Construction permit 0391-002's limitations of forty-three ppmv of NO_X when burning natural gas and sixty-five ppmv when burning No. 2 fuel oil are more restrictive than the seventy-five and seventy-nine ppmv NOx limitations calculated based on subpart GG. Therefore meeting construction permit 0391-002's NO_X limitations satisfies subpart GG.

5) 10 CSR 10-6.350, *Emission limitation and Emissions Trading of Oxides of Nitrogen,* is not applicable to Boilers 1 and 2 (EU0040 and EU0045) because according to 10 CSR 10-6.350 (1)(A) this regulation only applies to units with nameplate capacity of greater than twenty-five megawatts.

6) 10 CSR 10-6.400, *Restriction of Emissions of Particulate Matter from Industrial Processes,* and City of Springfield Code, Chapter 6, Article III, Division 4, *Particulate Matter from Industrial Processes*
   a) Coal unloading, transfer, and crushing emission units (EU0010 through EU0035) are not subject to 10 CSR 10-6.400 because per 10 CSR 10-6.400 (1)(B)12, the grinding, crushing, and conveying operations at a power plant are exempt. However, City of Springfield Code, Chapter 6, Article III, Division 4 does not contain this exemption, therefore EU0010 through EU0030 are subject to the city code.
   b) The boilers (EU0040 through EU0070) are not subject to these regulations because per 10 CFR 10-6.400 (1)(B)6 and City of Springfield Code, Chapter 6, Article III, Division 4, Section 6-251, the burning of fuel for indirect heating is exempt.
   c) Combustion Turbines 1 and 2 (EU0080 and EU0090) are not subject to these regulations because the turbines burn only liquid and gas fuel and there is no process weight rate.
   d) Fly Ash Collection System emission units (EU0100 through EU0120) are not subject to 10 CSR 10-6.400 because per 10 CSR 10-6.400(1)(B)12, the grinding, crushing, and conveying operations at a power plant are exempt. However, City of Springfield Code, Chapter 6, Article III, Division 4, does not contain this exemption, therefore EU0100 through EU0120 are subject to the city code.

7) 2001 Consent Agreement Paragraph 5 required the permittee to maintain records of monitoring data, fuel analysis data, fuel consumption, and CEMS QA/QC for two years. This has been changed to five years in Permit Conditions (EU0040 and EU0045)-003 and (EU0050 through EU0070)-002.

Other Regulations Not Cited in the Operating Permit or the Above Statement of Basis
Any regulation which is not specifically listed in either the operating permit or in the above Statement of Basis does not appear, based on this review, to be an applicable requirement for this installation for one or more of the following reasons:
1. The specific pollutant regulated by that rule is not emitted by the installation;
2. The installation is not in the source category regulated by that rule;
3. The installation is not in the county or specific area that is regulated under the authority of that rule;
4. The installation does not contain the type of emission unit which is regulated by that rule;
5. The rule is only for administrative purposes.

Should a later determination conclude that the installation is subject to one or more of the regulations cited in this Statement of Basis or other regulations which were not cited, the installation shall determine and demonstrate, to the Air Pollution Control Program's satisfaction, the installation's compliance with that regulation(s). If the installation is not in compliance with a regulation which was not previously cited, the installation shall submit to the Air Pollution Control Program a schedule for achieving compliance for that regulation(s).

Prepared by:

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