

**STATEMENT OF BASIS****Page 1 of 38**BAQ Engineering Services Division
2600 Bull Street, Columbia, SC 29201
Phone: 803-898-4123 Fax: 803-898-4079**Company Name:**

PyraMax Ceramics, LLC

Permit Number:

0160-0023

Permit Writer:

George Robinson

Date:

02/08/2012

DATE APPLICATION RECEIVED: September 19, 2011**DATE OF LAST INSPECTION:** N/A

FACILITY DESCRIPTION The facility, which will consist of four production lines, will manufacture proppant beads for the oil and gas industry. Proppant agents are used to improve the productivity of an oil or gas well. Proppants improve the well's flow capacity and increase recovery rates.

PROJECT DESCRIPTION The facility has submitted a Construction Permit application as a Title V, major source. The project will require Prevention of Significant Deterioration (PSD) permitting for projected emissions of carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOC), sulfur dioxide (SO₂), particulate matter (PM / PM₁₀ / PM_{2.5}), and greenhouse gases (GHG). The application includes Best Available Control Technology (BACT) analysis for these pollutants. The facility is a major source of HAP emissions. The application includes a 112(g) Case-by-Case Maximum Achievable Control Technology (MACT) evaluation for Hazardous Air Pollutants (HAPs).

1. **RAW MATERIAL HANDLING** The feedstock for the plant will be locally mined raw clay. The facility will receive clay via trucks to any of twelve (12) covered bays. Expected emissions from the raw material handling operations are PM, PM₁₀ and PM_{2.5}. However, due to the high moisture content of the clay (approximately 20 percent by weight [wt%]), emissions from raw material handling are negligible.

FEEDSTOCK PREPARATION The raw feedstock materials are moved from the storage bays to the feeder by a front-end loader. The feeder transfers the material into a round tank with a mixer. The purpose of the mix tank is for the conversion of feedstock clay into a stable suspended mixture by mixing clay with water and a small amount of dispersant. The material is agitated and then pH balanced using aqueous ammonia. The mixture is then stored in open top storage tanks under constant agitation to keep the mixture suspended. Some screening of the wet material with a wet screen is then completed prior to addition of the binder material. This additive material is stored in a silo shared by two lines, for a total of two at the site. The additive is mixed with water and heated prior to addition to the raw material mixture.

Expected emissions from feedstock preparation include VOC (impurity in the additive), PM, PM₁₀, PM_{2.5}. Similar to the raw material handling operations, particulate emissions will be negligible due to the high moisture content and wet material.

3. **PELLETIZATION** Pelletization occurs in the pelletization process. As coated green pellets dry, additional layers are added until the desired bead size is achieved. The pelletizer is heated by a direct fired natural gas (with propane backup) air heater in which the entire volume of drying air is heated to the desired temperature by means of combustion gases from the gas burner. The total heat capacity of the combustion units used will be 75 MM Btu/hr, and combustion units will be equipped with Low NO_x burners. Spent drying air is exhausted through a single central outlet duct to the baghouse for the removal of particulate matter. The bagfilters are pulse jet filters. Emissions from the pelletizer will include VOC, PM, PM₁₀, PM_{2.5} and those associated with combustion. Additionally, during the drying operation, volatile organics in the binder additive are emitted, including methanol and methyl acetate.

4. **GREEN PELLET SCREENING** Green pellets are conveyed from the pelletizer to the green pellet screens via a bucket elevator. The screens will consist of two large units, which stack multiple screens in one housing unit thus reducing the dust collection effort from traditional screens. Oversize and undersize particles are recycled back into the process while the on-sized particles are conveyed into the kiln for further processing. Oversized particles are diverted for recycle into the slurry and then re-fed to the pelletizer feed bin. Undersized particles are diverted directly back to the pelletizer feed bin.

Expected emissions from the green pellet screening operations are PM, PM₁₀ and PM_{2.5}. Particulate emissions are controlled by baghouses and bin vent filters, depending on the operation. The storage bins are equipped with bin vent filters with pulse jets that allow the material to recycle directly back into the process.

5. **CALCINING/SINTERING** On-sized green pellets are conveyed to the kiln feed bin via conveyors and bucket elevator. The green pellets are metered into the charge end of a counterflow rotary kiln where they are slowly dried, calcined, and sintered. The green pellets or proppant beads need to be slowly heated to drive off moisture and other impurities. The rotary kiln rotates as it fires a 56.8 million BTU/Hr burner to a maximum of 3,000 degrees Fahrenheit and is capable of heating the green proppant material at a very slow



STATEMENT OF BASIS

Page 2 of 38

BAQ Engineering Services Division
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rate to release bound moisture and volatiles. The natural gas low NO_x burner (propane backup) fires into the material feed stream so that exhaust gases travel counterflow to the incoming green proppant beads.

The rotary kiln also includes a separate rotary cooler that introduces cooling air in the discharge end of the cooler. Cooling airflow is the result of the induced draft fan located downstream of the kiln located between the control device and prior to the stack.

Expected emissions from the calcination and sintering process include all criteria pollutants and HAPs (HCl and HF). Emissions from the kiln are routed to a catalytic baghouse system (which includes a cyclone) for multi-pollutant control, which controls particulates, NO_x, and acid gases (HF and HCl), and SO₂. Ammonia and sodium bicarbonate are injected into the exhaust gas stream to react with the NO_x and acid gases, respectively. The aqueous ammonia will be drawn from the same storage tanks that feed the process. Sodium bicarbonate will be stored in a silo. The particulate matter generated from the process and flue gas reactions are collected on the filters. Dust collected from the kiln baghouse is sent to another baghouse located at the pelletizer that feeds the dust back into the process at the pelletizer feed bin. General background information for the catalytic baghouse system is included in Appendix G of the application.

6. **FINISHING** The calcined and sintered pellets are conveyed from the kiln cooler via bucket elevator to the final product screens. Screening is conducted at two levels with the on sized finished proppant pellets being conveyed to the quality control bins and off-sized proppant pellets recycled back to the kiln for further processing. Pellets are quality tested and if they pass quality control are sent to the storage silos awaiting shipping. Dust collection will occur at transfer points and diverted to a common baghouse. The dust collected at this baghouse is discarded.

The storage silos are located outside and hold finished product waiting for shipping via railcar. Each storage silo and storage bin is equipped with a bin vent with filter. Finished pellets are conveyed to the railcar loading spout and into railcars for delivery to the customer. Dust collection in this area occurs at product transfer points and is collected to a common baghouse.

Facility Contact: Michael Burgess, (478) 234-8178 E mail: m.burgess@pyramaxceramics.com

Consultant: Trinity Consultants, Tom Muscenti, (704) 553-7747, E mail: tmuscenti@trinityconsultants.com

SOURCE TEST REQUIREMENTS The following table includes all equipment (process, equipment ID and description) that is subject to source testing as part of this permit.

PROCESS	EQUIPMENT ID	DESCRIPTION
Pelletizer (a), (c)	12-27-1100, 22-27-1100, 32-27-1100, 42-27-1100	Pelletizer, with three (3) each 25 million BTU/hr natural gas direct fired low NO _x burners (propane back up fuel)
Calcining Kilns (a), (b), (c)	14-21-1410, 24-21-1410, 34-21-1410, 44-21-1410	Rotary Kiln with one (1) 56.8 million BTU/hr Natural gas, Direct fired, low NO _x burner (Propane back-up).
Material Handling (a)	Various	N/A
Engine 1 thru 8 (d)	Engine 1 thru 8	29 hp, Diesel Powered, Emergency Engine
Emergency Generators 1 thru 8 (d)	EG 1 thru 8	500 kW, 757 hp, Diesel Powered, Emergency Generator # 1
Fire Pump (d)	Fire Pump	500hp, Diesel Powered, Emergency Fire Pump

Source testing is required by: (a) PSD/BACT, (b) NSPS, subpart UUU, (c) 112g, (d) PSD/BACT, NSPS, subpart IIII



STATEMENT OF BASIS
Page 3 of 38
 BAQ Engineering Services Division
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SOURCE TESTS REQUIREMENTS

Process	BACT	BACT Limit	Initial Source Test	Test Repeated		Equipment Monitoring
Pelletizer	PM/PM ₁₀ / PM _{2.5}	PM = 0.01 gr/dscf PM ₁₀ = 0.01 gr/dscf PM _{2.5} = 0.006 gr/dscf	180 days	Every two years (a)		
	NO _x	2.25 lb/hr	180 days	Every two years (a)		
	CO	13.73 lb/hr	180 days	Every two years (a)		
	VOC	11.78 lb/hr	180 days	N/A		
	CO ₂ e	44,446 tpy	180 days	Every two years (a)		
Calcining Kilns	PM/PM ₁₀ / PM _{2.5}	PM = 0.01 gr/dscf (filterable) and 9.01 lb/hr (filterable and condensable) PM ₁₀ = 0.01 gr/dscf (filterable) and 9.01 lb/hr (filterable and condensable) PM _{2.5} = 0.006 gr/dscf (filterable) and 7.25 lb/hr (filterable and condensable)	180 days	Every two years (a)		
	NO _x	36.30 lb/hr	180 days	Every two years (a)		
	SO ₂	11.64 lb/hr	180 days	Every two years (a)		
	CO	36.74 lb/hr	180 days	Every two years (a)		
	VOC	0.62 lb/hr	180 days			
	CO ₂ e	0.218 lb/ton	180 days	Every two years (a)		
Material Handling	PM/PM ₁₀ / PM _{2.5}	PM/PM ₁₀ /PM _{2.5} = 0.005 gr/dscf Testing for Specified Control Devices Only	180 days	N/A	CD-13-12-1215, CD-15-12-1488, CD-16-12-1580 CD-23-12-1215, CD-25-12-1488, CD-26-12-1580 CD-33-12-1215, CD-35-12-1488, CD-36-12-1580 CD-43-12-1215, CD-45-12-1488, CD-46-12-1580	



STATEMENT OF BASIS
Page 4 of 38
 BAQ Engineering Services Division
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Process	BACT and NSPS, subpart III	BACT Limit	Initial Source Test	Test Repeated		Equipment Monitoring
Engine 1 thru 8 E Gen 1 thru 8 Fire Pump	NO _x	Fire Pump NO _x = 4.0 g/kW-hr Engine 1 – 8 NO _x = 7.5 g/kW-hr (each engine) EG1 – 8 NO _x = 4.0 g/kW-hr (each engine)	N/A	N/A		Certified Engines
	CO	Fire Pump CO = 3.5 g/kW-hr Engine 1 – 8 CO = 5.5 g/kW-hr (each engine) EG1 – 8 CO = 3.5 g/kW-hr (each engine)	N/A	N/A		Certified Engines
	VOC	Fire Pump NMHC + NO _x = 4.0 g/kW-hr Engine 1 – 8 NMHC + NO _x = 7.5 g/kW-hr (each engine) EG1 – 8 NMHC + NO _x = 4.0 g/kW-hr (each engine)	N/A	N/A		Certified Engines
	PM	Fire Pump PM = 0.20 g/kW-hr Engine 1 – 8 PM = 0.30 g/kW-hr (each engine) EG1 – 8 PM = 0.20 g/kW-hr (each engine)	N/A	N/A		Certified Engines
Process	NSPS, subpart UUU	Limits	Initial Source Test	Test Repeated		Equipment Monitoring
Pelletizers, Calcining Kilns	40CFR 60.732 PM	No PM emissions in excess of 0.092g/dscm [0.040 grain per dry standard cubic foot (gr/dscf)] Pelletizers - No PM emissions in excess of 0.057g/dscm [0.025	180 Days	N/A		



STATEMENT OF BASIS
Page 5 of 38
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Process	112g	Limits	Initial Source Test	Test Repeated	Equipment Monitoring
Calcining Kilns	HF HCl	0.044 lb/ton, 4.52 tpy 0.029 lb/ton, 2.84 tpy	180 days	Every 5 years	
Pelletizer	Methanol	0.23 lb/ton, 24.0 tpy	180 days	Every 5 years	

SPECIAL CONDITIONS, MONITORING, LIMITS None

PUBLIC NOTICE This construction permit(s) will undergo a 30-day public notice period to establish, PSD limits, and 112g in accordance with SC Regulation 61-62.1, Section II(N). This permit was placed in *The Allendale Sun* newspaper on December 15, 2011. The comment period was open from December 15, 2011 to January 26-2012 and was placed on the BAQ website during that time period.

ADDITIONAL PUBLIC PARTICIPATION Postcards were mailed to nearby citizens on October 3, 2011 that DHEC has received an application for the proposed project. Postcards were also mailed on December 14, 2011 to the same citizens to notify them of the public hearing and that a draft permit has been written. A public hearing is scheduled for January 19, 2012 and comments will be received through January 26, 2012.

Unit ID	Emission Unit Description
01	Material Handling
02 thru 05	Each Unit ID 02 thru 05 consist of the following:
	Raw Material Handling
	Feedstock Preparation
	Pelletization
	Green Pellet Screening
	Calcination / Sintering
	Finishing
06	Support Equipment

SOURCE DESCRIPTION

OP ID	Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
		Unit ID 01 Services all Process Lines			
		Raw Material Handling and Storage			
	00-23-1000	Raw Material Storage, Bays 1 thru 12		N/A	N/A
	Add1	Additive Silo - Line 1 & 2		Add1	Add1
	Add2	Additive Silo - Line 3 & 4		Add2	Add2



STATEMENT OF BASIS
Page 6 of 38
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OP ID	Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
	SBSilo1	Sodium bicarbonate Silo for Line #1		SBSilo1	SBSilo1
	SBSilo2	Sodium bicarbonate Silo for Line #2		SBSilo2	SBSilo2
	SBSilo3	Sodium bicarbonate Silo for Line #3		SBSilo3	SBSilo3
	SBSilo4	Sodium bicarbonate Silo for Line #4		SBSilo4	SBSilo4
Unit ID 02 Process Line 1					
		Feedstock Preparation - Line 1			
	10-15-1003	Feeder			
	10-07-1002	Conveyor to Mix Tanks			
	11-01-1050	Mix Tank for clay, ammonia, dispersant, and water.			
	11-12-1601	Pneumatic Dust Transfer System with dust collector for capture. (1)			
	11-03-1606	Recycled Dust Surge Bin		11-12-1605	11-12-1605
	11-07-1604	Weigh Belt		13-12-1215	13-12-1215
	11-29-1609	Recycle Mix Tank for clay, water, and additives.			
		Pelletization - Line 1			
	12-03-1162	Seed Feed Bin to Pelletizer #1		12-12-1163	12-12-1163
	12-07-1154	Conveyor to Feed Seed Bin		12-12-1163	12-12-1163
	12-27-1100	Pelletizer #1, with three (3) each 25 million BTU/hr natural gas direct fired low NOx burners (propane back up fuel)		12-12-1141	12-12-1141
	12-13-1105	Screen Feed Elevator		13-12-1215	13-12-1215
		Green Pellet Screening - Line 1			
	13-03-1230	Feed Hopper		13-12-1215	13-12-1215
	13-24-1232	Green Pellet Screen		13-12-1215	13-12-1215
	13-24-1233	Green Pellet Screen		13-12-1215	13-12-1215
	13-24-1234	Green Pellet Screen		13-12-1215	13-12-1215
	13-24-1235	Green Pellet Screen		13-12-1215	13-12-1215
	13-07-1239	Conveyors		13-12-1215	13-12-1215
	13-07-1240	Conveyors		13-12-1215	13-12-1215
	13-07-1241	Conveyors		13-12-1215	13-12-1215
	13-07-1231	Conveyor, Oversized Green Pellets		13-12-1215	13-12-1215
	13-07-1193	Conveyor, Undersized Green Pellets		13-12-1215	13-12-1215
	13-13-1194	Seed Bin Elevator		13-12-1215	13-12-1215
	13-13-1208	Kiln Feed Elevator		13-12-1215	13-12-1215
		Calcining / Sintering - Line 1			
	14-03-1400	Kiln Feed Bin		14-12-1401	14-12-1401
	14-03-1485	Kiln Recycle Feed Bin		14-12-1486	14-12-1486
	14-07-1403	Weigh Belt for Rotary Kiln		13-12-1215	13-12-1215
	14-13-1484	Kiln Recycle Elevator to Kiln Recycle Feed Bin		13-12-1215	13-12-1215



STATEMENT OF BASIS

Page 7 of 38

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OP ID	Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
	14-21-1410	Rotary Kiln #1 with one (1) 56.8 million BTU/hr Natural gas, Direct fired, low NOx burner (Propane back-up).		14-09-1421 14-12-1412	14-12-1412
	14-21-1430	Rotary Kiln Cooler		14-09-1421 14-12-1412	14-12-1412
	14-21-1431	Cooler Elevator		15-12-1488	15-12-1488
		Finishing - Line 1			
	15-24-1439	Coarse Product Screens		15-12-1488	15-12-1488
	15-24-1440	Coarse Product Screens		15-12-1488	15-12-1488
	15-03-1441	QC Bin #1		15-12-1488	15-12-1488
	15-03-1445	QC Bin #2		15-12-1488	15-12-1488
	15-24-1459	Secondary Product Screens		15-12-1488	15-12-1488
	15-24-1460	Secondary Product Screens		15-12-1488	15-12-1488
	15-03-1461	QC Bin #3		15-12-1488	15-12-1488
	15-03-1465	QC Bin #4		15-12-1488	15-12-1488
	15-07-1448	Coarse Reversing Weigh Belt		15-12-1488	15-12-1488
	15-07-1468	Fine Reversing Weigh Belt from QC Bins # 1 - 4		15-12-1488	15-12-1488
	15-21-1491	Recycle Elevator		15-12-1488	15-12-1488
	15-03-1480	Recycle Weigh Bin		15-12-1488	15-12-1488
	16-03-1520	Product Silo # 1		16-12-1521	16-12-1521
	16-03-1530	Product Silo # 2		16-12-1531	16-12-1531
	16-03-1540	Product Silo # 3		16-12-1541	16-12-1541
	16-03-1550	Product Silo # 4		16-12-1551	16-12-1551
	16-03-1560	Product Silo # 5		16-12-1561	16-12-1561
	16-07-1570	Belt Conveyor		16-12-1580	16-12-1580
	16-07-1571	Loading Elevator		16-12-1580	16-12-1580
	16-03-1572	Weigh Bin		16-12-1580	16-12-1580
	16-18-1576	Loading Spout		16-12-1580	16-12-1580
Unit ID 03 Process Line 2					
		Feedstock Preparation - Line 2			
	20-15-1003	Feeder			
	20-07-1002	Conveyor to Mix Tanks			
	21-01-1050	Mix Tank for clay, ammonia, dispersant, and water.			
	21-12-1601	Pneumatic Dust Transfer System with dust collector for capture. (1)			
	21-03-1606	Recycled Dust Surge Bin		21-12-1605	21-12-1605
	21-07-1604	Weigh Belt		23-12-1215	23-12-1215
	21-29-1609	Recycle Mix Tank for clay, water, and additives.			
		Pelletization - Line 2			
	22-03-1162	Seed Feed Bin to Pelletizer #2		22-12-1163	22-12-1163
	22-07-1154	Conveyor to Feed Seed Bin		22-12-1163	22-12-1163
	22-27-1100	Pelletizer #2, with three (3) each 25 million BTU/hr natural gas direct fired low NOx burners (propane back up fuel)		22-12-1141	22-12-1141



STATEMENT OF BASIS

Page 8 of 38

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OP ID	Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
	22-13-1105	Screen Feed Elevator		23-12-1215	23-12-1215
		Green Pellet Screening - Line 2			
	23-03-1230	Feed Hopper		23-12-1215	23-12-1215
	23-24-1232	Green Pellet Screen		23-12-1215	23-12-1215
	23-24-1233	Green Pellet Screen		23-12-1215	23-12-1215
	23-24-1234	Green Pellet Screen		23-12-1215	23-12-1215
	23-24-1235	Green Pellet Screen		23-12-1215	23-12-1215
	23-07-1239	Conveyors		23-12-1215	23-12-1215
	23-07-1240	Conveyors		23-12-1215	23-12-1215
	23-07-1241	Conveyors		23-12-1215	23-12-1215
	23-07-1231	Conveyor, Oversized Green Pellets		23-12-1215	23-12-1215
	23-07-1193	Conveyor, Undersized Green Pellets		23-12-1215	23-12-1215
	23-13-1194	Seed Bin Elevator		23-12-1215	23-12-1215
	23-13-1208	Kiln Feed Elevator		23-12-1215	23-12-1215
		Calcining / Sintering - Line 2			
	24-03-1400	Kiln Feed Bin		24-12-1401	24-12-1401
	24-03-1485	Kiln Recycle Feed Bin		24-12-1486	24-12-1486
	24-07-1403	Weigh Belt for Rotary Kiln		23-12-1215	23-12-1215
	24-13-1484	Kiln Recycle Elevator to Kiln Recycle Feed Bin		23-12-1215	23-12-1215
	24-21-1410	Rotary Kiln with one (1) 56.8 million BTU/hr Natural gas, Direct fired, low NOx burner (Propane back-up).		24-09-1421 24-12-1412	24-12-1412
	24-21-1430	Rotary Kiln Cooler		24-09-1421 24-12-1412	24-12-1412
	24-21-1431	Cooler Elevator		25-12-1488	25-12-1488
		Finishing - Line 2			
	25-24-1439	Coarse Product Screens		25-12-1488	25-12-1488
	25-24-1440	Coarse Product Screens		25-12-1488	25-12-1488
	25-03-1441	QC Bin #1		25-12-1488	25-12-1488
	25-03-1445	QC Bin #2		25-12-1488	25-12-1488
	25-24-1459	Secondary Product Screens		25-12-1488	25-12-1488
	25-24-1460	Secondary Product Screens		25-12-1488	25-12-1488
	25-03-1461	QC Bin #3		25-12-1488	25-12-1488
	25-03-1465	QC Bin #4		25-12-1488	25-12-1488
	25-07-1448	Coarse Reversing Weigh Belt		25-12-1488	25-12-1488
	25-07-1468	Fine Reversing Weigh Belt from QC Bins # 1 - 4		25-12-1488	25-12-1488
	25-21-1491	Recycle Elevator		25-12-1488	25-12-1488
	25-03-1480	Recycle Weigh Bin		25-12-1488	25-12-1488
	26-03-1520	Product Silo # 1		26-12-1521	26-12-1521
	26-03-1530	Product Silo # 2		26-12-1531	26-12-1531
	26-03-1540	Product Silo # 3		26-12-1541	26-12-1541
	26-03-1550	Product Silo # 4		26-12-1551	26-12-1551
	26-03-1560	Product Silo # 5		26-12-1561	26-12-1561
	26-07-1570	Belt Conveyor		26-12-1580	26-12-1580
	26-07-1571	Loading Elevator		26-12-1580	26-12-1580



STATEMENT OF BASIS

Page 9 of 38

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	26-03-1572	Weigh Bin		26-12-1580	26-12-1580
	26-18-1576	Loading Spout		26-12-1580	26-12-1580
Unit ID 04 Process Line 3					
		Feedstock Preparation - Line 3			
	30-15-1003	Feeder			
	30-07-1002	Conveyor to Mix Tanks			
	31-01-1050	Mix Tank for clay, ammonia, dispersant, and water.			
	31-12-1601	Pneumatic Dust Transfer System with dust collector for capture. (1)			
	31-03-1606	Recycled Dust Surge Bin		31-12-1605	31-12-1605
	31-07-1604	Weigh Belt		33-12-1215	33-12-1215
	31-29-1609	Recycle Mix Tank for clay, water, and additives.			
		Pelletization - Line 3			
	32-03-1162	Seed Feed Bin to Pelletizer #3		32-12-1163	32-12-1163
	32-07-1154	Conveyor to Feed Seed Bin		32-12-1163	32-12-1163
	32-27-1100	Pelletizer #3, with three (3) each 25 million BTU/hr natural gas direct fired low NOx burners (propane back up fuel)		32-12-1141	32-12-1141
	32-13-1105	Screen Feed Elevator		33-12-1215	33-12-1215
		Green Pellet Screening - Line 3			
	33-03-1230	Feed Hopper		33-12-1215	33-12-1215
	33-24-1232	Green Pellet Screen		33-12-1215	33-12-1215
	33-24-1233	Green Pellet Screen		33-12-1215	33-12-1215
	33-24-1234	Green Pellet Screen		33-12-1215	33-12-1215
	33-24-1235	Green Pellet Screen		33-12-1215	33-12-1215
	33-07-1239	Conveyors		33-12-1215	33-12-1215
	33-07-1240	Conveyors		33-12-1215	33-12-1215
	33-07-1241	Conveyors		33-12-1215	33-12-1215
	33-07-1231	Conveyor, Oversized Green Pellets		33-12-1215	33-12-1215
	33-07-1193	Conveyor, Undersized Green Pellets		33-12-1215	33-12-1215
	33-13-1194	Seed Bin Elevator		33-12-1215	33-12-1215
	33-13-1208	Kiln Feed Elevator		33-12-1215	33-12-1215
		Calcining / Sintering - Line 3			
	34-03-1400	Kiln Feed Bin		34-12-1401	34-12-1401
	34-03-1485	Kiln Recycle Feed Bin		34-12-1486	34-12-1486
	34-07-1403	Weigh Belt for Rotary Kiln		33-12-1215	33-12-1215
	34-13-1484	Kiln Recycle Elevator to Kiln Recycle Feed Bin		33-12-1215	33-12-1215
	34-21-1410	Rotary Kiln #3 with one (1) 56.8 million BTU/hr Natural gas, Direct fired, low NOx burner (Propane back-up).		34-09-1421 34-12-1412	34-12-1412
	34-21-1430	Rotary Kiln Cooler		34-09-1421 34-12-1412	34-12-1412
	34-21-1431	Cooler Elevator		35-12-1488	35-12-1488



STATEMENT OF BASIS
Page 10 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
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Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

OP ID	Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
		Finishing - Line 3			
	35-24-1439	Coarse Product Screens		35-12-1488	35-12-1488
	35-24-1440	Coarse Product Screens		35-12-1488	35-12-1488
	35-03-1441	QC Bin #1		35-12-1488	35-12-1488
	35-03-1445	QC Bin #2		35-12-1488	35-12-1488
	35-24-1459	Secondary Product Screens		35-12-1488	35-12-1488
	35-24-1460	Secondary Product Screens		35-12-1488	35-12-1488
	35-03-1461	QC Bin #3		35-12-1488	35-12-1488
	35-03-1465	QC Bin #4		35-12-1488	35-12-1488
	35-07-1448	Coarse Reversing Weigh Belt		35-12-1488	35-12-1488
	35-07-1468	Fine Reversing Weigh Belt from QC Bins # 1 - 4		35-12-1488	35-12-1488
	35-21-1491	Recycle Elevator		35-12-1488	35-12-1488
	35-03-1480	Recycle Weigh Bin		35-12-1488	35-12-1488
	36-03-1520	Product Silo # 1		36-12-1521	36-12-1521
	36-03-1530	Product Silo # 2		36-12-1531	36-12-1531
	36-03-1540	Product Silo # 3		36-12-1541	36-12-1541
	36-03-1550	Product Silo # 4		36-12-1551	36-12-1551
	36-03-1560	Product Silo # 5		36-12-1561	36-12-1561
	36-07-1570	Belt Conveyor		36-12-1580	36-12-1580
	36-07-1571	Loading Elevator		36-12-1580	36-12-1580
	36-03-1572	Weigh Bin		36-12-1580	36-12-1580
	36-18-1576	Loading Spout		36-12-1580	36-12-1580
Unit ID 05 Process Line 4					
		Feedstock Preparation – Line 4			
	40-15-1003	Feeder			
	40-07-1002	Conveyor to Mix Tanks			
	41-01-1050	Mix Tank for clay, ammonia, dispersant, and water.			
	41-12-1601	Pneumatic Dust Transfer System with dust collector for capture. (1)			
	41-03-1606	Recycled Dust Surge Bin		41-12-1605	41-12-1605
	41-07-1604	Weigh Belt		43-12-1215	43-12-1215
	41-29-1609	Recycle Mix Tank for clay, water, and additives.			
		Pelletization _ Line 4			
	42-03-1162	Seed Feed Bin to Pelletizer #4		42-12-1163	42-12-1163
	42-07-1154	Conveyor to Feed Seed Bin		42-12-1163	42-12-1163
	42-27-1100	Pelletizer #4, with three (3) each 25 million BTU/hr natural gas direct fired low NOx burners (propane back up fuel)		42-12-1141	42-12-1141
	42-13-1105	Screen Feed Elevator		43-12-1215	43-12-1215
		Green Pellet Screening - Line 4			
	43-03-1230	Feed Hopper		43-12-1215	43-12-1215
	43-24-1232	Green Pellet Screen		43-12-1215	43-12-1215
	43-24-1233	Green Pellet Screen		43-12-1215	43-12-1215



STATEMENT OF BASIS
Page 11 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
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Permit Number:	0160-0023	Date:	02/08/2012

OP ID	Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
	43-24-1234	Green Pellet Screen		43-12-1215	43-12-1215
	43-24-1235	Green Pellet Screen		43-12-1215	43-12-1215
	43-07-1239	Conveyors		43-12-1215	43-12-1215
	43-07-1240	Conveyors		43-12-1215	43-12-1215
	43-07-1241	Conveyors		43-12-1215	43-12-1215
	43-07-1231	Conveyor, Oversized Green Pellets		43-12-1215	43-12-1215
	43-07-1193	Conveyor, Undersized Green Pellets		43-12-1215	43-12-1215
	43-13-1194	Seed Bin Elevator		43-12-1215	43-12-1215
	43-13-1208	Kiln Feed Elevator		43-12-1215	43-12-1215
		Calcining / Sintering – Line 4			
	44-03-1400	Kiln Feed Bin		44-12-1401	44-12-1401
	44-03-1485	Kiln Recycle Feed Bin		44-12-1486	44-12-1486
	44-07-1403	Weigh Belt for Rotary Kiln		43-12-1215	43-12-1215
	44-13-1484	Kiln Recycle Elevator to Kiln Recycle Feed Bin		43-12-1215	43-12-1215
	44-21-1410	Rotary Kiln #4 with one (1) 56.8 million BTU/hr Natural gas, Direct fired, low NOx burner (Propane back-up).		44-09-1421 44-12-1412	44-12-1412
	44-21-1430	Rotary Kiln Cooler		44-09-1421 44-12-1412	44-12-1412
	44-21-1431	Cooler Elevator		45-12-1488	45-12-1488
		Finishing – Line 4			
	45-24-1439	Coarse Product Screens		45-12-1488	45-12-1488
	45-24-1440	Coarse Product Screens		45-12-1488	45-12-1488
	45-03-1441	QC Bin #1		45-12-1488	45-12-1488
	45-03-1445	QC Bin #2		45-12-1488	45-12-1488
	45-24-1459	Secondary Product Screens		45-12-1488	45-12-1488
	45-24-1460	Secondary Product Screens		45-12-1488	45-12-1488
	45-03-1461	QC Bin #3		45-12-1488	45-12-1488
	45-03-1465	QC Bin #4		45-12-1488	45-12-1488
	45-07-1448	Coarse Reversing Weigh Belt		45-12-1488	45-12-1488
	45-07-1468	Fine Reversing Weigh Belt from QC Bins # 1 - 4		45-12-1488	45-12-1488
	45-21-1491	Recycle Elevator		45-12-1488	45-12-1488
	45-03-1480	Recycle Weigh Bin		45-12-1488	45-12-1488
	46-03-1520	Product Silo # 1		46-12-1521	46-12-1521
	46-03-1530	Product Silo # 2		46-12-1531	46-12-1531
	46-03-1540	Product Silo # 3		46-12-1541	46-12-1541
	46-03-1550	Product Silo # 4		46-12-1551	46-12-1551
	46-03-1560	Product Silo # 5		46-12-1561	46-12-1561
	46-07-1570	Belt Conveyor		46-12-1580	46-12-1580
	46-07-1571	Loading Elevator		46-12-1580	46-12-1580
	46-03-1572	Weigh Bin		46-12-1580	46-12-1580
	46-18-1576	Loading Spout		46-12-1580	46-12-1580
Unit ID 06 Support Equipment					



STATEMENT OF BASIS
Page 12 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
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Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

OP ID	Equip ID	Equipment Description	Installation Date	Control Device ID	Stack ID
	Engine 1	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 1
	Engine 2	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 2
	Engine 3	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 3
	Engine 4	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 4
	Engine 5	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 5
	Engine 6	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 6
	Engine 7	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 7
	Engine 8	29 hp, Diesel Powered, Emergency Engine		N/A	Engine 8
	Fire Pump	500hp, Diesel Powered, Emergency Fire Pump		N/A	Fire Pump
	EG1	500 kW, 757 hp, Diesel Powered, Emergency Generator # 1		N/A	EP-EG1
	EG2	500 kW, 757 hp, Diesel Powered, Emergency Generator # 2		N/A	EP-EG2
	EG3	500 kW, 757 hp, Diesel Powered, Emergency Generator # 3		N/A	EP-EG3
	EG4	500 kW, 757 hp, Diesel Powered, Emergency Generator # 4		N/A	EP-EG4
	EG5	500 kW, 757 hp, Diesel Powered, Emergency Generator # 5		N/A	EP-EG5
	EG6	500 kW, 757 hp, Diesel Powered, Emergency Generator # 6		N/A	EP-EG6
	EG7	500 kW, 757 hp, Diesel Powered, Emergency Generator # 7		N/A	EP-EG7
	EG8	500 kW, 757 hp, Diesel Powered, Emergency Generator # 8		N/A	EP-EG8
	B1	One (1), 5 million BTU/hr Natural Gas fired Fire Tube Boiler # 1, Hot Water Heater, with Propane as back-up fuel.		N/A	B1
	B2	One (1), 5 million BTU/hr Natural Gas fired Fire Tube Boiler # 2, Hot Water Heater, with Propane as back-up fuel.		N/A	B2

(1) The Pneumatic System Dust Collector is considered a process unit as opposed to a control device. This unit collects and transfers the recycled dust.

CONTROL EQUIPMENT

Control Device ID	Control Device Description	Installation Date	Pollutant(s) Controlled	Efficiency Capture (%)	Efficiency Removal (%)
Process Line 1					
11-12-1605	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
12-12-1163	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
12-12-1141	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
13-12-1215	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
14-12-1401	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100	99.0
14-09-1421	Cyclone,		PM/PM ₁₀ /PM _{2.5}	100	



STATEMENT OF BASIS
Page 13 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

Control Device ID	Control Device Description	Installation Date	Pollutant(s) Controlled	Efficiency Capture (%)	Efficiency Removal (%)
14-12-1412	Catalytic Baghouse System,		PM/PM ₁₀ /PM _{2.5} NOx, SO ₂ , HAP/TAP	100.00	As specified in the BACT Determinations
14-12-1486	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
15-12-1488	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
16-12-1521	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
16-12-1531	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
16-12-1541	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
16-12-1551	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
16-12-1561	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
16-12-1580	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
Process Line 2					
21-12-1605	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
22-12-1163	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
22-12-1141	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
23-12-1215	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
24-12-1401	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100	99.0
24-09-1421	Cyclone		PM/PM ₁₀ /PM _{2.5}	100	
24-12-1412	Catalytic Baghouse System		PM/PM ₁₀ /PM _{2.5} NOx, SO ₂ , HAP/TAP	100.00	As specified in the BACT Determinations
24-12-1486	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
25-12-1488	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
26-12-1521	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
26-12-1531	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
26-12-1541	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
26-12-1551	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
26-12-1561	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
26-12-1580	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
Process Line 3					
31-12-1605	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
32-12-1163	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
32-12-1141	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
33-12-1215	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
34-12-1401	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100	99.0
34-09-1421	Cyclone		PM/PM ₁₀ /PM _{2.5}	100	
34-12-1412	Catalytic Baghouse System		PM/PM ₁₀ /PM _{2.5} NOx, SO ₂ , HAP/TAP	100.00	As specified in the BACT Determinations
34-12-1486	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
35-12-1488	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
36-12-1521	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
36-12-1531	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
36-12-1541	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0



STATEMENT OF BASIS

Page 14 of 38

BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
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Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

Control Device ID	Control Device Description	Installation Date	Pollutant(s) Controlled	Efficiency Capture (%)	Efficiency Removal (%)
36-12-1551	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
36-12-1561	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
36-12-1580	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
Process Line 4					
41-12-1605	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
42-12-1163	Bin Vent		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
42-12-1141	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
43-12-1215	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
44-12-1401	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100	99.0
44-09-1421	Cyclone		PM/PM ₁₀ /PM _{2.5}	100	
44-12-1412	Catalytic Baghouse System		PM/PM ₁₀ /PM _{2.5} NOx, SO ₂ , HAP/TAP	100.00	As specified in the BACT Determinations
44-12-1486	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
45-12-1488	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
46-12-1521	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
46-12-1531	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
46-12-1541	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
46-12-1551	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
46-12-1561	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
46-12-1580	Dust Collector		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
Add1	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100	99.0
Add2	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100	99.0
SBSilo1	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
SBSilo2	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
SBSilo3	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0
SBSilo4	Bin Vent Filter		PM/PM ₁₀ /PM _{2.5}	100.0	99.0

EXEMPT SOURCE/INSIGNIFICANT ACTIVITIES DESCRIPTION

Equip ID	Source Description (Date Listed)	Basis
Flare	Propane Flare used during Start up of Propane System	SC Regulation 61-62.1, Section II (B)(2)(h)
V1	3.75 million BTU/hr Propane Vaporizer	SC Regulation 61-62.1, Section II (B)(2)(h)
PelletFeed1	Pelletizer Feed Storage Tank for Line # 1	SC Regulation 61-62.1, Section II (B)(2)(h)
PelletFeed2	Pelletizer Feed Storage Tank for Line # 2	
PelletFeed3	Pelletizer Feed Storage Tank for Line # 3	



STATEMENT OF BASIS
Page 15 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
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Permit Number:	0160-0023	Date:	02/08/2012

Equip ID	Source Description (Date Listed)	Basis
PelletFeed4	Pelletizer Feed Storage Tank for Line # 4	
OpenTank1	Two (2) Open Top Storage Tanks, Line #1, prior to Wet Screens	SC Regulation 61-62.1, Section II (B)(2)(h)
OpenTank2	Two (2) Open Top Storage Tanks, Line #2, prior to Wet Screens	
OpenTank3	Two (2) Open Top Storage Tanks, Line #3, prior to Wet Screens	
OpenTank4	Two (2) Open Top Storage Tanks, Line #4, prior to Wet Screens	
WetScreens 1	Eight (8) Wet Screens and One (1) Surge Tank, to separate reject grit from Pelletizer feed. Line #1	SC Regulation 61-62.1, Section II (B)(2)(h)
WetScreens 2	Eight (8) Wet Screens and One (1) Surge Tank, to separate reject grit from Pelletizer feed. Line #2	
WetScreens 3	Eight (8) Wet Screens and One (1) Surge Tank, to separate reject grit from Pelletizer feed. Line #3	
WetScreens 4	Eight (8) Wet Screens and One (1) Surge Tank, to separate reject grit from Pelletizer feed. Line #4	
T-A1, thru T-A8	Eight (8) each, 19,000 gallon, Aboveground, Storage Tanks for pure Aqueous Ammonia	SC Regulation 61-62.1, Section II (B)(2)(h)
TD1	One (1) 7,000 gallon Aboveground Diesel Storage Tank	SC Regulation 61-62.1, Section II (B)(2)(h)
TD2	One (1) 1,000 gallon Aboveground Diesel Storage Tank	SC Regulation 61-62.1, Section II (B)(2)(h)
TD3, TD4, TD5, TD6	Four (4) each, 2,375 gallon Aboveground Diesel Storage Tanks	SC Regulation 61-62.1, Section II (B)(2)(h)
T-P1 thru T-P4	Four (4) each, 60,000 gallon Aboveground Propane Storage Tanks	SC Regulation 61-62.1, Section II (B)(2)(h)
TDisp1 & TDisp2	Two (2) 14,250 gallon Dispersant Tanks.	SC Regulation 61-62.1, Section II (B)(2)(h)

EMISSIONS

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
Clay to Storage	PM	6.99E-02	3.06E-01	Engineering Calculation (a)
	PM ₁₀	3.31E-02	1.45E-01	
	PM _{2.5}	5.01E-03	2.19E-02	
10-15-1003 20-15-1003 30-10-1003 40-15-1003 (each)	PM	2.30E-02	1.01E-01	Engineering Calculation (a)
	PM ₁₀	1.09E-02	4.76E-02	
	PM _{2.5}	1.65E-03	7.21E-03	
(10-07-1002/ 11-01-1050) (20-07-1002/ 21-01-1050)	PM	4.60E-02	2.01E-01	Engineering Calculation (a)
	PM ₁₀	2.18E-02	9.53E-02	
	PM _{2.5}	3.29E-03	1.44E-02	



STATEMENT OF BASIS
Page 16 of 38
 BAQ Engineering Services Division
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 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
(30-07-1002/ 31-01-1050) (40-07-1002/ 41-01-1050) (each pair)				
11-12-1601 21-12-1601 31-12-1601 41-12-1601 (each)	PM PM ₁₀ PM _{2.5}	0.03 0.03 0.02	0.14 0.14 0.07	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
11-03-1606 21-03-1606 31-03-1606 41-03-1606 (each)	PM PM ₁₀ PM _{2.5}	0.00 0.00 0.00	0.01 0.01 0.01	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
11-29-1609 21-29-1609 31-29-1609 41-29-1609 (each)	PM PM ₁₀ PM _{2.5}	2.30E-03 1.09E-03 1.65E-04	1.01E-02 4.76E-03 7.21E-04	Engineering Calculation (a)
(12-03-1162/ 12-07-1154) (22-03-1162/ 22-07-1154) (32-03-1162/ 32-07-1154) (42-03-1162/ 42-07-1154) (each pair)	PM PM ₁₀ PM _{2.5}	0.00 0.00 0.00	0.01 0.01 0.01	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
12-27-1100 22-27-1100 32-27-1100 42-27-1100 (each)	PM PM ₁₀ PM _{2.5} SO ₂ NO _x CO VOC CO ₂ CH ₄ N ₂ O CO ₂ e Ammonia Methanol Methyl Acetate	7.70 7.70 4.26 0.05 2.25 13.73 11.78 10,106.57 0.49 0.10 10,147.52 122.71 5.48 5.48	33.72 33.72 18.64 0.20 9.86 60.12 51.59 44,266.79 2.16 0.43 44,446.13 537.45 24.00 24.00	Outlet grain loading for PM/PM ₁₀ /PM ₂ . AP-42 Fifth Edition, Tables 1.4-1,-2, 7/98 Assumes manufacturer's guaranteed emissions for Low NO _x burners. (1) Manufacturers guarantee for CO and mass balance for VOC 40 CFR 98, subpart C, Tables C-1 & C-2.



STATEMENT OF BASIS
Page 17 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
11-07-1604	PM	0.32	1.41	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
12-13-1105	PM ₁₀	0.32	1.41	
13-24-1232	PM _{2.5}	0.17	0.74	
13-24-1233				
13-24-1234				
13-24-1235				
13-07-1239				
13-07-1240				
13-07-1241				
13-03-1230				
13-07-1234				
13-07-1193				
13-07-1231				
13-13-1194				
13-13-1208				
14-07-1403				
14-13-1484 (total of 1 group x 4 process groups)				
14-03-1400, 24-03-1400, 34-03-1400, 44-03-1400 (each)	PM	0.01	0.05	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
	PM ₁₀	0.01	0.05	
	PM _{2.5}	0.01	0.02	
14-03-1485, 24-03-1485, 34-03-1485, 44-03-1485 (each)	PM	0.01	0.05	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
	PM ₁₀	0.01	0.05	
	PM _{2.5}	0.01	0.02	
14-21-1410/ 14-21-1430	PM	3.95	17.29	AP-42 Fifth Edition, Tables 1.4-1,-2, 7/98
24-21-1410/ 24-21-1430,	PM ₁₀	3.95	17.29	
34-21-1410/ 34-21-1430,	PM _{2.5}	2.18	9.56	
44-21-1410/ 44-21-1430	CO	4.77	20.90	
(each pair)	VOC	0.62	2.72	
	CO ₂	7,654.04	33,524.72	
	CH ₄	0.37	1.64	
	N ₂ O	0.07	0.33	
	CO ₂ e	7,685.05	33,660.54	
	Flourides	0.02	0.09	
Ceramic Firing (each kiln)	PM condensable	5.07	22.19	AP-42 Fifth Edition, Tables 11-6.2, 7/98 Engineering Calc (c) Engineering Calc (d)
	SO ₂	116.40	509.83	
	NO _x	181.50	794.97	
	CO	51.36	224.94	
	CO ₂	616.28	2,699.31	



STATEMENT OF BASIS
Page 18 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
Control Device (each)	HCl	6.70	29.35	
	HF	10.30	45.11	
	NH ₃	0.02	0.10	
	CO ₂	351.33	1,538.85	
	NaF	0.02	0.09	
14-21-1431	PM	0.41	1.78	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
15-24-1439	PM ₁₀	0.41	1.78	
15-24-1440	PM _{2.5}	0.21	0.94	
15-24-1459				Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
15-24-1460				
15-03-1441				
15-03-1445				
15-03-1461				
15-03-1465				
15-07-1448				
15-07-1468				
15-21-1491				
15-03-1480 (total of 1 group x 4 process groups)				
16-03-1520	PM	0.01	0.05	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
26-03-1520	PM ₁₀	0.01	0.05	
36-03-1520	PM _{2.5}	0.01	0.02	
46-03-1520 (each)				
16-03-1530	PM	0.01	0.05	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
26-03-1530	PM ₁₀	0.01	0.05	
36-03-1530	PM _{2.5}	0.01	0.02	
46-03-1530 (each)				
16-03-1540, 26-03-1540, 36-03-1540, 46-03-1540 (each)	PM	0.01	0.05	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
	PM ₁₀	0.01	0.05	
	PM _{2.5}	0.01	0.02	
16-03-1550, 26-03-1550, 36-03-1550, 46-03-1550 (each)	PM	0.01	0.05	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)
	PM ₁₀	0.01	0.05	
	PM _{2.5}	0.01	0.02	



STATEMENT OF BASIS
Page 19 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)					
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions	
16-03-1560, 26-03-1560, 36-03-1560, 46-03-1560 (each)	PM PM ₁₀ PM _{2.5}	0.01 0.01 0.01	0.05 0.05 0.02	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)	
16-07-1570, 16-07-1571 16-03-1572 16-18-1576 (each)	PM PM ₁₀ PM _{2.5}	0.69 0.69 0.36	3.02 3.02 1.59		
26-07-1570, 26-07-1571 26-03-1572 26-18-1576 (each)	PM PM ₁₀ PM _{2.5}	0.69 0.69 0.36	3.02 3.02 1.59		
36-07-1570, 36-07-1571 36-03-1572 36-18-1576 (each)	PM PM ₁₀ PM _{2.5}	0.69 0.69 0.36	3.02 3.02 1.59		
46-07-1570, 46-07-1571 46-03-1572 46-18-1576 (each)	PM PM ₁₀ PM _{2.5}	0.69 0.69 0.36	3.02 3.02 1.59	Outlet grain loading for PM/PM ₁₀ /PM _{2.5} . (b)	
SBSilo1 SBSilo2 SBSilo3 SBSilo4 (each)	PM PM ₁₀ PM _{2.5}	0.02 0.02 0.01	0.09 0.09 0.05		
B1 / B2 (each)	PM	0.04	0.17		AP-42 Fifth Edition, External Combustion, Natural gas, Tables 1.4-1,-2, 7/98 40 CFR 98, Subpart C, Tables C-1 and C-2
	PM ₁₀	0.04	0.17		
	PM _{2.5}	0.04	0.17		
	SO ₂	0.00	0.01		
	NO _x	0.71	3.11		
	CO	0.05	0.24		
	VOC	0.42	1.84		
	CO ₂	673.77	2,951.12		
	CH ₄	0.03	0.14		
	N ₂ O	0.01	0.03		
CO ₂ e	676.50	2,963.08			



STATEMENT OF BASIS
Page 20 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
V1	PM	0.03	0.13	AP-42 Fifth Edition, External Combustion, Natural gas, Tables 1.4-1,-2, 7/98 40 CFR 98, Subpart C, Tables C-1 and C-2
	PM ₁₀	0.03	0.13	
	PM _{2.5}	0.03	0.13	
	SO ₂	0.00	0.00	
	NO _X	0.53	2.33	
	CO	0.31	1.35	
	VOC	0.04	0.18	
	CO ₂ e	507.38	2,222.31	
Flare	VOC	2.80	1.68E-02	AP-42 Fifth Edition, External Combustion, Section 13.5-1. Smokeless Flare 40 CFR 98, Subpart C, Tables C-1 and C-2
	CO	7.40	4.44E-02	
	NO _X	1.36	8.16E-03	
	PM	0.00	0.00	
	CO ₂	2,709.89	16.26	
	CH ₄	0.13	7.94E-04	
	N ₂ O	0.03	1.59E-04	
	CO ₂ e	2,720.87	16.33	
Emergency Generators Line 1 – 4 (each)	PM	0.44	0.02	AP-42 Fifth Edition, Section 3.3, Tables 3.3-1 and 3.3-2, 7/98
	PM ₁₀	0.44	0.02	
	PM _{2.5}	0.44	0.02	
	SO _X	3.10	0.16	
	NO _X	8.82	0.44	
	VOC	8.82	0.44	40 CFR 98, subpart C, Tables C-1 & C-2.
	CO	7.72	0.39	
	CO ₂	1,728.03	86.40	
	CH ₄	7.01E-02	3.50E-03	
	N ₂ O	1.40E-02	7.01E-04	
CO ₂ e	1,733.85	86.69		
Emergency Engines 1 – 8 (each)	PM	0.03	1.44E-03	AP-42 Fifth Edition, Section 3.3, Tables 3.3-1 and 3.3-2, 7/98 40 CFR 98, subpart C, Tables C-1 & C-2.
	PM ₁₀	0.03	1.44E-03	
	PM _{2.5}	0.03	1.44E-03	
	SO _X	0.12	5.95E-03	
	NO _X	0.72	0.04	
	VOC	0.72	0.04	
	CO	0.53	0.03	
	CO ₂	33.10	1.65	
	CH ₄	1.34E-01	6.71E-05	
	N ₂ O	2.69E-04	1.34E-05	
CO ₂ e	66.42	3.32		
Fire Pump	PM	0.17	8.27E-03	AP-42 Fifth Edition, Section 3.3, Tables 3.3-1 and 3.3-2, 7/98
	PM ₁₀	0.17	8.27E-03	
	PM _{2.5}	0.17	8.27E-03	
	SO _X	1.03	5.13E-02	



STATEMENT OF BASIS
Page 21 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

UNCONTROLLED POTENTIAL EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
	NO _x	3.31	0.17	40 CFR 98, subpart C, Tables C-1 & C-2.
	VOC	3.31	0.17	
	CO	2.89	0.14	
	CO ₂	570.68	28.53	
	CH ₄	2.31E-02	1.16E-03	
	N ₂ O	4.63E-01	2.31E-04	
	CO ₂ e	572.60	28.63	
Roads (total)	PM	4.14	18.02	AP-42 Section 13.2.1-1, Equation 3
	PM ₁₀	0.83	3.60	
	PM _{2.5}	0.20	0.88	
Add1	PM	0.02	0.09	
Add2 (each)	PM ₁₀	0.02	0.09	
	PM _{2.5}	0.01	0.05	

- (a) Process rate X # of drop points X control eff. x Emission Factor
Emission factor EPA AP-42, Section 13.2.4, Equation 1.
 - (b) Outlet grain loading of control device X flow rate of the exhaust stream (dscfm)
 - (c) Calculation assumes all carbon in clay is converted to CO₂
 - (d) Calculation assumes all fluoride/chloride in clay is converted to HF/HCl
- (1) Low NO_x burners guarantee: NO_x = 0.030 lb/million BTU, CO = 0.183 lb/million BTU.

CONTROLLED POTENTIAL PM EMISSIONS (PROJECT ONLY)								
ID	Grain Loading	PM		PM ₁₀		PM _{2.5}		Method for Estimating Emissions
		lb/hr	TPY	lb/hr	TPY	lb/hr	TPY	
12-03-1162 12-07-1154	0.005	0.00	0.01	0.00	0.01	0.00	0.01	Controlled emissions for PM/PM ₁₀ /PM _{2.5} , as explained in Uncontrolled emission section (a)
11-12-1601	0.005	0.03	0.14	0.03	0.14	0.02	0.07	
11-03-1606	0.005	0.00	0.01	0.00	0.01	0.00	0.01	
Add1	0.005	0.02	0.09	0.02	0.09	0.01	0.05	
22-03-1162 22-07-1154	0.005	0.00	0.01	0.00	0.01	0.00	0.01	
21-12-1601	0.005	0.03	0.14	0.03	0.14	0.02	0.07	
21-03-1606	0.005	0.00	0.01	0.00	0.01	0.00	0.01	
32-03-1162 32-07-1154	0.005	0.00	0.01	0.00	0.01	0.00	0.01	
31-12-1601	0.005	0.03	0.14	0.03	0.14	0.02	0.07	
31-03-1606	0.005	0.00	0.01	0.00	0.01	0.00	0.01	
Add2	0.005	0.02	0.09	0.02	0.09	0.01	0.05	
42-03-1162 42-07-1154	0.005	0.00	0.01	0.00	0.01	0.00	0.01	
41-12-1601	0.005	0.03	0.14	0.03	0.14	0.02	0.07	
41-03-1606	0.005	0.00	0.01	0.00	0.01	0.00	0.01	



Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

CONTROLLED POTENTIAL PM EMISSIONS (PROJECT ONLY)								
ID	Grain Loading	PM		PM ₁₀		PM _{2.5}		Method for Estimating Emissions
11-07-1604 12-13-1105 13-24-1232 13-24-1233 13-24-1234 13-24-1235 13-07-1239 13-07-1240 13-07-1241 13-07-1193 13-07-1231 13-03-1230, 13-13-1194, 13-13-1208, 14-07-1403, 14-13-1484	0.005	0.32	1.41	0.32	1.41	0.17	0.74	
21-07-1604, 22-13-1105, 23-24-1232, 23-24-1233, 23-24-1234, 23-24-1235, 23-07-1239, 23-07-1240, 23-07-1241, 23-07-1193, 23-07-1231, 23-03-1230, 23-13-1194, 23-13-1208, 24-07-1403, 24-13-1484	0.005	0.32	1.41	0.32	1.41	0.17	0.74	



STATEMENT OF BASIS
Page 23 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

CONTROLLED POTENTIAL PM EMISSIONS (PROJECT ONLY)								
ID	Grain Loading	PM		PM ₁₀		PM _{2.5}		Method for Estimating Emissions
31-07-1604, 32-13-1105, 33-24-1232, 33-24-1233, 33-24-1234, 33-24-1235, 33-07-1239, 33-07-1240, 33-07-1241, 33-07-1193, 33-07-1231, 33-03-1230, 33-13-1194, 33-13-1208, 34-07-1403, 34-13-1484	0.005	0.32	1.41	0.32	1.41	0.17	0.74	
41-07-1604, 42-13-1105, 43-24-1232, 43-24-1233, 43-24-1234, 43-24-1235, 43-07-1239, 43-07-1240, 43-07-1241, 43-07-1193, 43-07-1231, 43-03-1230, 43-13-1194, 43-13-1208, 44-07-1403, 44-13-1484	0.005	0.32	1.41	0.32	1.41	0.17	0.74	
14-03-1485	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
14-03-1400	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
24-03-1485	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
24-03-1400	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
34-03-1485	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
34-03-1400	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
44-03-1485	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
44-03-1400	0.005	0.01	0.05	0.01	0.05	0.01	0.02	



STATEMENT OF BASIS
Page 24 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

CONTROLLED POTENTIAL PM EMISSIONS (PROJECT ONLY)								
ID	Grain Loading	PM		PM ₁₀		PM _{2.5}		Method for Estimating Emissions
14-21-1431, 15-24-1439, 15-24-1440, 15-24-1459, 15-24-1460, 15-03-1441, 15-03-1445, 15-03-1461, 15-03-1465, 15-07-1448, 15-07-1468, 15-21-1491, 15-03-1480	0.005	0.41	1.78	0.41	1.78	0.21	0.94	
24-21-1431, 25-24-1439, 25-24-1440, 25-24-1459, 25-24-1460, 25-03-1441, 25-03-1445, 25-03-1461, 25-03-1465, 25-07-1448, 25-07-1468, 25-21-1491, 25-03-1480	0.005	0.41	1.78	0.41	1.78	0.21	0.94	
34-21-1431, 35-24-1439, 35-24-1440, 35-24-1459, 35-24-1460, 35-03-1441, 35-03-1445, 35-03-1461, 35-03-1465, 35-07-1448, 35-07-1468, 35-21-1491, 35-03-1480	0.005	0.41	1.78	0.41	1.78	0.21	0.94	



STATEMENT OF BASIS
Page 25 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

CONTROLLED POTENTIAL PM EMISSIONS (PROJECT ONLY)

ID	Grain Loading	PM		PM ₁₀		PM _{2.5}		Method for Estimating Emissions
44-21-1431, 45-24-1439, 45-24-1440, 45-24-1459, 45-24-1460, 45-03-1441, 45-03-1445, 45-03-1461, 45-03-1465, 45-07-1448, 45-07-1468, 45-21-1491, 45-03-1480	0.005	0.41	1.78	0.41	1.78	0.21	0.94	
16-03-1520	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
16-03-1530		0.01	0.05	0.01	0.05	0.01	0.02	
16-03-1540		0.01	0.05	0.01	0.05	0.01	0.02	
16-03-1550		0.01	0.05	0.01	0.05	0.01	0.02	
16-03-1560		0.01	0.05	0.01	0.05	0.01	0.02	
16-07-1570, 16-07-1571, 16-03-1572, 16-18-1576	0.005	0.69	3.02	0.69	3.02	0.36	1.59	
26-03-1520	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
26-03-1530		0.01	0.05	0.01	0.05	0.01	0.02	
26-03-1540		0.01	0.05	0.01	0.05	0.01	0.02	
26-03-1550		0.01	0.05	0.01	0.05	0.01	0.02	
26-03-1560		0.01	0.05	0.01	0.05	0.01	0.02	
26-07-1570, 26-07-1571, 26-03-1572, 26-18-1576	0.005	0.69	3.02	0.69	3.02	0.36	1.59	
36-03-1520	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
36-03-1530		0.01	0.05	0.01	0.05	0.01	0.02	
36-03-1540		0.01	0.05	0.01	0.05	0.01	0.02	
36-03-1550		0.01	0.05	0.01	0.05	0.01	0.02	
36-03-1560		0.01	0.05	0.01	0.05	0.01	0.02	
36-07-1570, 36-07-1571, 36-03-1572, 36-18-1576	0.005	0.69	3.02	0.69	3.02	0.36	1.59	
46-03-1520	0.005	0.01	0.05	0.01	0.05	0.01	0.02	
46-03-1530		0.01	0.05	0.01	0.05	0.01	0.02	
46-03-1540		0.01	0.05	0.01	0.05	0.01	0.02	
46-03-1550		0.01	0.05	0.01	0.05	0.01	0.02	
46-03-1560		0.01	0.05	0.01	0.05	0.01	0.02	



STATEMENT OF BASIS
Page 26 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

CONTROLLED POTENTIAL PM EMISSIONS (PROJECT ONLY)								
ID	Grain Loading	PM		PM ₁₀		PM _{2.5}		Method for Estimating Emissions
46-07-1570, 46-07-1571, 46-03-1572, 46-18-1576	0.005	0.69	3.02	0.69	3.02	0.36	1.59	
SBSilo1	0.005	0.02	0.09	0.02	0.09	0.01	0.05	
SBSilo2		0.02	0.09	0.02	0.09	0.01	0.05	
SBSilo3		0.02	0.09	0.02	0.09	0.01	0.05	
SBSilo4		0.02	0.09	0.02	0.09	0.01	0.05	

CONTROLLED POTENTIAL COMBUSTION EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
12-27-1100	PM	7.70	33.72	Emissions from combustion and product firing, as explained in uncontrolled emission section (a)
22-27-1100	PM ₁₀	7.70	33.72	
32-27-1100	PM _{2.5}	4.26	18.64	
42-27-1100	SO ₂	0.05	0.20	
(each)	NO _x	2.25	9.86	
	CO	13.73	60.12	
	VOC	0.82	3.59	
	CO ₂	10,106.57	44,266.79	
	CH ₄	0.49	2.16	
	N ₂ O	0.10	0.43	
	CO ₂ e	10,147.52	44,446.13	
14-21-1410/	PM	3.95	17.29	
14-21-1430,	PM ₁₀	3.95	17.29	
24-21-1410/	PM _{2.5}	2.18	9.56	
34-21-1430,	CO	4.77	20.90	
44-21-1410/	VOC	0.62	2.72	
44-21-1430	CO ₂	7,654.04	33,524.72	
(each pair)	CH ₄	0.37	1.64	
	N ₂ O	0.07	0.33	
	CO ₂ e	7,685.05	33,660.54	
Ceramic Firing (each pair)	PM condensable	5.07	22.19	
	SO ₂	11.64	51.00	
	NO _x	36.30	158.99	
	CO	51.36	224.94	
	CO ₂	616.28	2,699.31	
	HCl	0.67	2.94	
Control Device (each pair)	HF	1.03	4.52	
	NH ₃	0.02	0.10	
	CO ₂	351.33	1,538.85	
	NaF	0.02	0.09	



STATEMENT OF BASIS
Page 27 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

CONTROLLED POTENTIAL COMBUSTION EMISSIONS (PROJECT ONLY)				
ID	Pollutant	lb/hr	TPY	Method for Estimating Emissions
B1 / B2 (each)	PM	0.04	0.17	
	PM ₁₀	0.04	0.17	
	PM _{2.5}	0.04	0.17	
	SO ₂	0.00	0.01	
	NO _x	0.71	3.11	
	CO	0.05	0.24	
	VOC	0.42	1.84	
	CO ₂	673.77	2,951.12	
	CH ₄	0.03	0.14	
	N ₂ O	0.01	0.03	
	CO ₂ e	676.50	2,963.08	

(a) BACT emission limits were established for PM/PM₁₀/PM_{2.5}, SO₂, CO, NO_x, VOC, and CO₂e. Since control devices are federally enforceable and in place at all times, the calculated uncontrolled and controlled emissions are the same for most pollutants.

FACILITY WIDE EMISSIONS		
Pollutant	Uncontrolled Emissions	Controlled Emissions
	TPY	TPY
PM	23,246.59	340.27
PM ₁₀	23,231.36	325.03
PM _{2.5}	12,810.53	217.51
SO ₂	2,041.34	205.50
NO _x	3,229.94	686.03
CO	1,227.49	1,227.49
VOC	223.22	223.22
NH ₃	0.41	0.41
NaF	0.38	0.38
CO ₂	336,637.88	336,637.88
CH ₄	15.76	15.76
N ₂ O	3.16	3.16
CO ₂ e	337,932.80	337,932.80
HCl	117.40	11.77
HF	180.44	18.08
Ammonia	2,150.00	2,150.00
Methanol	96.00	96.00
Methyl Acetate	96.00	96.00
Total VOC	2,640.00	2,370.00
Total HAP	394.00	126.00

The "controlled" PM emissions are based on grain loading of the control device exhaust x flow rate of the exhaust stream. To arrive at an "uncontrolled" emissions rate the controlled rate ÷ (1 - baghouse control efficiency).



Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW																							
Regulation	Applicable		Comments																				
	Yes	No																					
South Carolina Regulation 61-62.1 through 62.99: Air Pollution Regulations (PROJECT ONLY)																							
Section II(E): Synthetic Minor		X	This project is a PSD Construction Permit application.																				
Section II(G): Conditional Major		X	This project is a PSD Construction Permit application.																				
Standard 1: Fuel Burning Operations	X		This Standard will apply to the two 5 million BTU/hr Boilers.																				
Standard 2: Ambient Air Quality Standards	X		This facility has demonstrated compliance through modeling; see modeling summary dated February 8, 2012.																				
Standard 3: Waste Combustion/Reduction (state only)		X	This project does not contain waste combustion or reduction sources.																				
Standard 3.1: HMI Waste Incinerators		X	No medical waste incineration.																				
Standard 4: Emissions from Process Industries	X		<p>The following emission sources have opacity limits (including any fugitives) and Particulate Matter (PM) allowable emissions rates (based on a process weight rate in tons per hour) imposed by this standard:</p> <table border="1"> <thead> <tr> <th>Unit ID</th> <th>Opacity</th> <th>PM Allowable (lb/hr)</th> <th>Process Weight Rate (tons/hr)</th> </tr> </thead> <tbody> <tr> <td>01 SB & Additive Silos</td> <td align="center">20</td> <td align="center">6.74</td> <td align="center">2.1</td> </tr> <tr> <td>01 Handling & Storage</td> <td align="center">20</td> <td align="center">Standard 4, Section X</td> <td align="center">N/A</td> </tr> <tr> <td>02 - 05</td> <td align="center">20</td> <td align="center">33.80</td> <td align="center">23.3</td> </tr> <tr> <td>06</td> <td align="center">20</td> <td align="center">N/A</td> <td align="center">N/A</td> </tr> </tbody> </table> <p>The PM allowable limit above applies to each Unit ID for each of the four Process Lines</p>	Unit ID	Opacity	PM Allowable (lb/hr)	Process Weight Rate (tons/hr)	01 SB & Additive Silos	20	6.74	2.1	01 Handling & Storage	20	Standard 4, Section X	N/A	02 - 05	20	33.80	23.3	06	20	N/A	N/A
Unit ID	Opacity	PM Allowable (lb/hr)	Process Weight Rate (tons/hr)																				
01 SB & Additive Silos	20	6.74	2.1																				
01 Handling & Storage	20	Standard 4, Section X	N/A																				
02 - 05	20	33.80	23.3																				
06	20	N/A	N/A																				
Standard 5: Volatile Organic Compounds		X	While the facility will have the PTE of > 100 TPY of VOC, none of the processes which are regulated by this regulation apply.																				
Standard 5.1: BACT/LAER For VOC (state only)	X		The proposed VOC emissions for this project exceeds 100 tons per year, therefore Standard 5.1 applies. Standard 5.1 will be met for the proposed project by applying BACT to VOC emissions.																				
Standard 5.2: Control of Oxides of Nitrogen		X	<p>Standard 5.2, Section I(a) The provisions of this regulation shall apply to any stationary source that emits or has the potential to emit oxides of nitrogen (NOx) generated from fuel combustion that has not undergone a Best Available Control Technology (BACT) analysis for NOx in accordance with SC Regulation 61-62.5, Standard No. 7 and that meets one or more of the criteria specified in paragraphs (a)(1), (a)(2), and (a)(3) of this part:</p> <p>(1) Any new source that is constructed after June 25, 2004;</p> <p>This PSD Permit will have a detailed NOx BACT analysis. For that reason, this standard will not apply.</p>																				
Standard 7: Prevention of Significant Deterioration	X		This facility is subject to PSD permitting for CO, NOx, SO ₂ , GHG, PM/ PM ₁₀ / PM _{2.5} , and VOC.																				
Standard 7(c): Ambient Air Increments	X		A baseline for PM ₁₀ , SO ₂ , and NO ₂ was set on 12/27/2007. The Class II Incremental Analysis was completed.																				
Standard 7.1: Standards for Non Attainment Areas		X	This area is in attainment.																				



STATEMENT OF BASIS

Page 29 of 38

BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
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Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
Standard 8: Toxic Air Pollutants (state only)		X	This standard will not apply to this project for the following two reasons: This Standard does not apply to fuel burning sources which burn only virgin fuel or specification used oil. I(D)(1) Affected sources that emit Hazardous Air Pollutants (HAPs) (42 U.S.C. 112(b)) and are subject to one or more Federal Maximum Achievable Control Technology (MACT) standards (42 U.S.C. 112(d), (g), (h), or (j)) are exempt.
Regulation 61-62.6: Control of Fugitive Particulate Matter	X		The fugitive PM (Dust) emissions must be controlled in a manner that will not produce undesirable levels of PM (Dust) emissions.
Regulation 61-62.60: SC Designated Facility Plan and NSPS	X		See Federal Regulations below
Regulation 61-62.61: NESHAP		X	This operation does not emit the pollutants subject to this standard (asbestos, benzene, beryllium, coke oven emissions, arsenic, mercury, radio nuclide, radon, or vinyl chloride).
Regulation 61-62.63: NESHAP For Source Categories	X		See Federal Regulations below.
Regulation 61-62.68: Chemical Accident Prevention		X	The facility will not exceed the threshold quantity of 20,000 lbs of aqueous ammonia. The facility indicates that the solution will be less than 20% ammonia. A 112(r) plan will not be required.
Regulation 61-62.70: Title V	X		The facility will be a major source. A Title V permit application must be received within 12 months of commencement of operations.
Regulation 61-62.72: Acid Rain		X	None of the sources are an industrial utility unit.
Regulation 61-62.96: Nitrogen Oxides (NO _x) and Sulfur Dioxide (SO ₂) Budget Trading Program		X	None of the sources are an industrial utility unit. Therefore they do not have to participate in the NO _x Budget Trading Program.
Regulation 61-62.99: Nitrogen Oxides (NO _x) Budget Program Requirements for Stationary Sources Not In the Trading Program		X	None of the sources are a kiln that has NO _x emissions greater than 1 ton per day.

Federal Regulations (PROJECT ONLY)

NSPS (Part 60)	X		<p>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</p> <p>40 CFR §60.110b Applicability And Designation Of Affected Facility.</p> <p>(a) Except as provided in paragraph (b) of this section, the affected facility to which this subpart applies is each storage vessel with a capacity greater than or equal to 75 cubic meters (m³) that is used to store volatile organic liquids (VOL) for which construction, reconstruction, or modification is commenced after July 23, 1984.</p> <p>The only vessels planned for the facility with capacities greater than 75 m³ (19,813 gallons) are the four(4) 60,000 gallon propane storage tanks.</p> <p>(d) This subpart does not apply to the following: (d)(2) Pressure vessels designed to operate in excess of 204.9 kPa and</p>
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STATEMENT OF BASIS

Page 30 of 38

BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
			<p>without emissions to the atmosphere.</p> <p>The application indicates that the propane storage vessels are designed to operate in excess of 204.9 kPa and without emissions to the atmosphere.</p> <p>For the above reasons, none of the proposed storage tanks are subject to subpart Kb.</p> <p>Subpart Dc--Standards Of Performance For Small Industrial-Commercial-Institutional Steam Generating Units</p> <p>40 CFR §60.40c Applicability And Delegation Of Authority. (a) Except as provided in paragraphs (d), (e), (f), and (g) of this section, the affected facility to which this subpart applies is each steam generating unit for which construction, modification, or reconstruction is commenced after June 9, 1989 and that has a maximum design heat input capacity of 29 megawatts (MW) (100 million British thermal units per hour (MMBtu/hr)) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).</p> <p>This subpart will not apply to the proposed 5 million BTU/hr boilers indicated under this project.</p> <p>Subpart OOO--Standards Of Performance For Nonmetallic Mineral Processing Plants</p> <p>40 CFR §60.670 Applicability And Designation Of Affected Facility. (a)(1) Except as provided in paragraphs (a)(2), (b), (c), and (d) of this section, the provisions of this subpart are applicable to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station.</p> <p>(a)(2) The provisions of this subpart do not apply to the following operations: All facilities located in underground mines; plants without crushers or grinding mills above ground; and wet material processing operations (as defined in §60.671).</p> <p>This plant does not have crushers or grinding mills above ground. For this reason, this subpart will not apply.</p> <p>Subpart UUU--Standards Of Performance For Calciners And Dryers In Mineral Industries</p> <p>40 CFR §60.730 Applicability And Designation Of Affected Facility. (a) The affected facility to which the provisions of this subpart apply is</p>



STATEMENT OF BASIS

Page 31 of 38

BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
			<p>each calciner and dryer at a mineral processing plant. Feed and product conveyors are not considered part of the affected facility. For the brick and related clay products industry, only the calcining and drying of raw materials prior to firing of the brick are covered.</p> <p>In view of the definitions below the Calcining kilns and pelletizers will be subject to this subpart.</p> <p>40 CFR §60.731 Definitions. Calciner means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and multiple hearth funaces.</p> <p>Dryer means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.</p> <p>Mineral processing plant means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (> 50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.</p> <p><i>40 CFR §60.732 Standards For Particulate Matter.</i> Each owner or operator of any affected facility that is subject to the requirements of this subpart shall comply with the emission limitations set forth in this section on and after the date on which the initial performance test required by §60.8 is completed, but not later than 180 days after the initial startup, whichever date comes first. No emissions shall be discharged into the atmosphere from any affected facility that:</p> <p>(a) Contains particulate matter in excess of 0.092 gram per dry standard cubic meter (g/dscm) [0.040 grain per dry standard cubic foot (gr/dscf)] for calciners and for calciners and dryers installed in series and in excess of 0.057 g/dscm (0.025 gr/dscf) for dryers; and</p> <p>(b) Exhibits greater than 10 percent opacity, unless the emissions are discharged from an affected facility using a wet scrubbing control device.</p> <p><i>40 CFR §60.734 Monitoring Of Emmisions And Operations.</i> (a) With the exception of the process units described in, paragraphs (b), (c), and (d) of this section the owner or operator of an affected facility subject to the provisions of this subpart who uses a dry control device to comply with the mass emission standard shall install, calibrate, maintain, and operate a continous monitoring</p>



STATEMENT OF BASIS

Page 32 of 38

BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
 Phone: 803-898-4123 Fax: 803-898-4079

Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
			<p>system to measure and record the opacity of emissions discharged into the atmosphere from the control device.</p> <p>(b) In lieu of a continuous capacity monitoring system, the owner or operator of a ball clay vibrating grate dryer, a bentonite rotary dryer, a diatomite flash dryer, a diatomite rotary calciner, a feldspar rotary dryer, a fire clay rotary dryer, an industrial sand fluid bed dryer, a kaolin rotary calciner, a perlite rotary dryer, a roofing granules fluid bed dryer, a roofing granules rotary dryer, a talc rotary calciner, a titanium dioxide spray dryer, a titanium dioxide fluid bed dryer, a vermiculite fluid bed dryer, or a vermiculite rotary dryer who uses a dry control device may have a certified visible emissions observer measure and record three 6-minute averages of the opacity of visible emissions to the atmosphere each day of operation in accordance with Method 9 of appendix A of part 60.</p> <p>(From Std Conditions) The owner/operator shall maintain on file all measurements including continuous monitoring system or monitoring device performance measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; and all other information required in a permanent form suitable for inspection by Department personnel.</p> <p><i>40 CFR §60.735 Recordkeeping And Reporting Requirements.</i></p> <p>(a) Records of the measurements required in §60.734 of this subpart shall be retained for at least 2 years.</p> <p>(c) Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by §60.734 of this subpart. For the purpose of these reports, exceedances are defined as follows:</p> <p>(c)(1) All 6-minute periods during which the average opacity from, dry control, devices is greater than 10 percent;</p> <p><i>40 CFR §60.7 Notification And Record Keeping.</i></p> <p>(a) Records of the measurements required in §60.734 of this subpart shall be retained for at least 2 years.</p> <p>(c) Each owner or operator shall submit written reports semiannually of exceedances of control device operating parameters required to be monitored by §60.734 of this subpart. For the purpose of these reports, exceedances are defined as follows:</p>



Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
			<p><i>40 CFR §60.736 Test Methods And Procedures.</i></p> <p>(a) In conducting the performance tests required in §60.8, the owner or operator shall use the test methods in Appendix A of this part or other, methods and procedures as specified in this section except as provided in §60.8(b).</p> <p>(b) The owner or operator shall determine compliance with the particulate matter standards in §60.732 as follows:</p> <p>(b)(1) Method 5 shall be used to determine the particulate matter concentration. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm.</p> <p>(b)(2) Method 9 and the procedures in §60.11 shall be used to determine opacity from stack emissions.</p> <p>Subpart III--Standards Of Performance For Stationary Compression Ignition Internal Combustion Engines</p> <p>40 CFR §60.4200 Am I Subject To This Subpart?</p> <p>a) The provisions of this subpart are applicable to manufacturers, owners, and operators of stationary compression ignition (CI) internal combustion engines (ICE) and other persons as specified in paragraphs (a)(1) through (4) of this section. For the purposes of this subpart, the date that construction commences is the date the engine is ordered by the owner or operator.</p> <p>(a)(2) Owners and operators of stationary CI ICE that commence construction after July 11, 2005, where the stationary CI ICE are:</p> <p>(a)(2)(i) Manufactured after April 1, 2006, and are not fire pump engines,</p> <p>40 CFR §60.4202 What Emission Standards Must I Meet For Emergency Engines If I Am A Stationary CI Internal Combustion Engine Manufacturer?</p> <p>(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 KW (3,000 HP) and a displacement of less than 10 liters per cylinder that are not fire pump engines to the emission standards specified in paragraphs (a)(1) through (2) of this section.</p> <p>(a)(1) For engines with a maximum engine power less than 37 KW (50 HP):</p> <p>(a)(1)(ii) The certification emission standards for new nonroad CI engines in 40 CFR 1039.104, 40 CFR 1039.105, 40 CFR 1039.107, 40 CFR 1039.115, and table 2 to this subpart, for 2008 model year and later engines</p>



Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments																																	
	Yes	No																																		
			<p>40 CFR Table 2 To Subpart IIII Of Part 60.--Emission Standards For 2008 Model Year And Later Emergency Stationary CI ICE <37 KW (50 HP) With A Displacement Of <10 Liters Per Cylinder</p> <table border="0"> <tr> <td>Pollutant</td> <td align="center" colspan="2">Emission Limit</td> </tr> <tr> <td></td> <td align="center">(g/kW-hr)</td> <td align="center">(g/HP-hr)</td> </tr> <tr> <td>NMHC + NOX =</td> <td align="center">7.5</td> <td align="center">5.6</td> </tr> <tr> <td>CO</td> <td align="center">5.5</td> <td align="center">4.1</td> </tr> <tr> <td>PM</td> <td align="center">0.30</td> <td align="center">0.22</td> </tr> </table> <p>(a)(2) For engines with a maximum engine power greater than or equal to 37 KW (50 HP), the certification emission standards for new nonroad CI engines for the same model year and maximum engine power in 40 CFR 89.112 and 40 CFR 89.113 for all pollutants beginning in model year 2007.</p> <p>40 CFR §89.112 Oxides Of Nitrogen, Carbon Monoxide, Hydrocarbon, And Particulate Matter Exhaust Emission Standards.</p> <p>(a) Exhaust emission from nonroad engines to which this subpart is applicable shall not exceed the applicable exhaust emission standards contained in Table 1, as follows:</p> <table border="0"> <tr> <td colspan="3">Table 1</td> </tr> <tr> <td>Pollutant</td> <td align="center" colspan="2">Emission Limit</td> </tr> <tr> <td></td> <td align="center" colspan="2">(g/kW-hr)</td> </tr> <tr> <td>NMHC + NOX =</td> <td align="center">4.0</td> <td></td> </tr> <tr> <td>CO</td> <td align="center">3.5</td> <td></td> </tr> <tr> <td>PM</td> <td align="center">0.20</td> <td></td> </tr> </table> <p>40 CFR §89.113 Smoke Emission Standard.</p> <p>(a) Exhaust opacity from compression-ignition nonroad engines for which this subpart is applicable must not exceed:</p> <p>(a)(1) 20 percent during the acceleration mode;</p> <p>(a)(2) 15 percent during the lugging mode; and</p> <p>(a)(3) 50 percent during the peaks in either the acceleration or lugging modes.</p> <p>40 CFR §60.4205 What Emission Standards Must I Meet For Emergency Engines If I Am An Owner Or Operator Of A Stationary CI Internal Combustion Engine?</p> <p>(b) Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in §60.4202, for all</p>	Pollutant	Emission Limit			(g/kW-hr)	(g/HP-hr)	NMHC + NOX =	7.5	5.6	CO	5.5	4.1	PM	0.30	0.22	Table 1			Pollutant	Emission Limit			(g/kW-hr)		NMHC + NOX =	4.0		CO	3.5		PM	0.20	
Pollutant	Emission Limit																																			
	(g/kW-hr)	(g/HP-hr)																																		
NMHC + NOX =	7.5	5.6																																		
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	(g/kW-hr)																																			
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Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments						
	Yes	No							
			<p>pollutants, for the same model year and maximum engine power for their 2007 model year and later emergency stationary CI ICE.</p> <p>(c) Owners and operators of fire pump engines with a displacement of less than 30 liters per cylinder must comply with the emission standards in table 4 to this subpart, for all pollutants.</p> <p>40 CFR Table 4 To Subpart IIII Of Part 60.--Emission Standards For Stationary Fire Pump Engines For 500 hp engine, with 2009+ model year: (g/KW-hr (g/HP-hr)</p> <table border="0"> <tr> <td><u>NMHC + NO_x</u></td> <td><u>CO</u></td> <td><u>PM</u></td> </tr> <tr> <td>4.0 (3.0)</td> <td>3.5 (2.6)</td> <td>0.20 (0.15)</td> </tr> </table> <p>40 CFR §60.4207 What Fuel Requirements Must I Meet If I Am An Owner Or Operator Of A Stationary CI Internal Combustion Engine Subject To This Subpart?</p> <p>(b) Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must purchase diesel fuel that meets the requirements of 40 CFR 80.510(b) for nonroad diesel fuel.</p> <p>40 CFR §80.510 What Are The Standards And Marker Requirements For NRLM Diesel Fuel And ECA Marine Fuel?</p> <p>(b) <i>Beginning June 1, 2010.</i> Except as otherwise specifically provided in this subpart, all NR and LM diesel fuel is subject to the following per-gallon standards:</p> <p>(b)(1) Sulfur content. (b)(1)(i) 15 ppm maximum for NR diesel fuel. (b)(1)(ii) 500 ppm maximum for LM diesel fuel. (b)(2) Cetane index or aromatic content, as follows: (b)(2)(i) A minimum cetane index of 40; or (b)(2)(ii) A maximum aromatic content of 35 volume percent.</p> <p>(c) Beginning June 1, 2012. Except as otherwise specifically provided in this subpart, all NRLM diesel fuel is subject to the following per-gallon standards: (c)(1) Sulfur content. 15 ppm maximum. (c)(2) Cetane index or aromatic content, as follows: (c)(2)(i) A minimum cetane index of 40; or (c)(2)(ii) A maximum aromatic content of 35 volume percent.</p> <p>40 CFR §60.4211 What Are My Compliance Requirements If I Am An Owner Or Operator Of A Stationary CI Internal Combustion Engine?</p> <p>(f) Emergency stationary ICE may be operated for the purpose of</p>	<u>NMHC + NO_x</u>	<u>CO</u>	<u>PM</u>	4.0 (3.0)	3.5 (2.6)	0.20 (0.15)
<u>NMHC + NO_x</u>	<u>CO</u>	<u>PM</u>							
4.0 (3.0)	3.5 (2.6)	0.20 (0.15)							



STATEMENT OF BASIS
Page 36 of 38
 BAQ Engineering Services Division
 2600 Bull Street, Columbia, SC 29201
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Company Name:	PyraMax Ceramics, LLC	Permit Writer:	George Robinson
Permit Number:	0160-0023	Date:	02/08/2012

PROJECT REGULATORY APPLICABILITY REVIEW			
Regulation	Applicable		Comments
	Yes	No	
			<p>maintenance checks and readiness testing, provided that the tests are recommended by Federal, State or local government, the manufacturer, the vendor, or the insurance company associated with the engine. Maintenance checks and readiness testing of such units is limited to 100 hours per year. There is no time limit on the use of emergency stationary ICE in emergency situations. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that Federal, State, or local standards require maintenance and testing of emergency ICE beyond 100 hours per year. Emergency stationary ICE may operate up to 50 hours per year in non-emergency situations, but those 50 hours are counted towards the 100 hours per year provided for maintenance and testing. The 50 hours per year for non-emergency situations cannot be used for peak shaving or to generate income for a facility to supply power to an electric grid or otherwise supply non-emergency power as part of a financial arrangement with another entity. For owners and operators of emergency engines, any operation other than emergency operation, maintenance and testing, and operation in non-emergency situations for 50 hours per year, as permitted in this section, is prohibited.</p> <p>The generators, engines, and fire pump will be considered for emergency use. For this reason, all of the various engines and generators will be included in the Exempt / Insignificant Activities List. While the above portion of subpart IIII will apply, the conditions will not be included in the permit.</p>
NESHAP (Part 61)		X	This operation does not emit the pollutants subject to this standard (asbestos, benzene, beryllium, coke oven emissions, arsenic, mercury, radio nuclide, radon, or vinyl chloride).
MACT (Part 63)	X		<p>Subpart ZZZZ--National Emission Standards For Hazardous Air Pollutants For Stationary Reciprocating Internal Combustion Engines 40 CFR §63.6585 Am I Subject To This Subpart? You are subject to this subpart if you own or operate a stationary RICE at a major or area source of HAP emissions, except if the stationary RICE is being tested at a stationary RICE test cell/stand. 40 CFR §63.6590 What Parts Of My Plant Does This Subpart Cover? This subpart applies to each affected source. (a) Affected source. An affected source is any existing, new, or reconstructed stationary RICE located at a major or area source of HAP emissions, excluding stationary RICE being tested at a stationary RICE test cell/stand. (b) Stationary RICE subject to limited requirements. (1) An affected source which meets either of the criteria in paragraphs (b)(1)(i) through (ii) of this section does not have to meet the requirements of</p>



STATEMENT OF BASIS

Page 37 of 38

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PROJECT REGULATORY APPLICABILITY REVIEW

Regulation	Applicable		Comments
	Yes	No	
			<p>this subpart and of subpart A of this part except for the initial notification requirements of §63.6645(f).</p> <p>(b)(1)(i) The stationary RICE is a new or reconstructed emergency stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions.</p> <p>40 CFR §63.6645 What Notifications Must I Submit And When?</p> <p>(f) If you are required to submit an Initial Notification but are otherwise not affected by the requirements of this subpart, in accordance with §63.6590(b), your notification should include the information in §63.9(b)(2)(i) through (v), and a statement that your stationary RICE has no additional requirements and explain the basis of the exclusion (for example, that it operates exclusively as an emergency stationary RICE if it has a site rating of more than 500 brake HP located at a major source of HAP emissions).</p> <p>The above will apply to the 757 HP emergency generators.</p> <p>40 CFR §63.6590 What Parts Of My Plant Does This Subpart Cover?</p> <p>(c) Stationary RICE subject to Regulations under 40 CFR Part 60. An affected source that meets any of the criteria in paragraphs (c)(1) through (7) of this section must meet the requirements of this part by meeting the requirements of 40 CFR part 60 subpart IIII, for compression ignition engines or 40 CFR part 60 subpart JJJJ, for spark ignition engines. No further requirements apply for such engines under this part.</p> <p>(c)(6) A new or reconstructed emergency or limited use stationary RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions;</p> <p>The above will apply to the fire pump engine and the 29 HP engines.</p> <p>In view 40CFR63.6590 (c) and 40CFR63.6645 (f) above, no conditions or requirements will be added to the permit</p> <p>Subpart DDDDD--National Emission Standards For Hazardous Air Pollutants For Industrial, Commercial, And Institutional Boilers And Process Heaters.</p> <p>Existing affected sources shall comply with the applicable provisions by the compliance date specified in Subpart DDDDD. Any new affected sources shall comply with the requirements of these Subparts upon initial start-up unless otherwise noted.</p>



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PROJECT REGULATORY APPLICABILITY REVIEW			
Regulation	Applicable		Comments
	Yes	No	
Case-by-Case MACT Analysis (112(g))			Because the emissions of facility-wide HAPs exceed the major source threshold of 10 TPY for a single HAP and 25 TPY for a combination of HAPs and there is no NESHAP promulgated for ceramic pellet manufacturing, then HAP emissions for the facility are subject to a Case-by-Case MACT under CAA Section 112(g).
Area Source Standards (Part 63)		X	This facility will be a major source of air pollutants.
Compliance Assurance Monitoring (CAM) (Part 64)	X		The application indicates that the facility will address Compliance Assurance Monitoring applicability in the initial Title V Operating Permit Application.

Pollutant	Controlled Emissions Increase	PSD Significant Threshold	Significant Increase?
	TPY	TPY	
PM	340.27	25	Yes
PM ₁₀	325.03	15	Yes
PM _{2.5}	217.51	10	Yes
SO ₂	205.49	40	Yes
NO _x	686.03	40	Yes
CO	1,226.14	100	Yes
VOC	223.22	40	Yes
Fluorides	0.38	3	No
Combustion CO _{2e} (GHG)	336,638	75,000	Yes

PUBLIC NOTICE COMMENTS:

Responses to the written and oral questions and comments are included in the Final Determination.

SUMMARY AND CONCLUSIONS

It has been determined that this source, if operated in accordance with the submitted application, will meet all applicable requirements and emission standards.