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June 22, 2006

Mr. Jason Waters
Air Program Permitting Supervisor
F.D.E.P. Southwest District
Air Resource Management
13051 N. Telecom Parkway
Tampa, Florida 33637-0926
Phone: 813-632-7600

SUBJECT: Response to 2nd Request for Additional Information (RAI)
Air Construction Permit Application for Clay Shredder System and
Concurrent Title V Air Operation Permit Revision
(DEP Project Nos. ~~1050010~~053-020-AC & ~~1050010~~053-021-AV)

Dear Mr. Waters:

This letter is a response to your March 30, 2006 RAI letter concerning the above mentioned project addressed to Mr. Gonzales of CEMEX Cement, Inc. I have responded to your comments from your letter by adding them to this letter in *italics* and presenting my response in **bold lettering**.

5. Current Use and Handling of Clay. In the response it was stated that clay is not currently being used as a raw material in the kiln mix. This raises the following questions:

a. Has clay been used in the kiln mix in the past?

Yes

b. If clay has been used in the past:

i. When was it used (specific time periods), what was the kiln mix makeup (raw materials and percentages of each in mix), and what was the source of the clay?

Clay was used in the process starting in November 21, 1982 through December 5, 1982 and again in late November 2004 through March 27, 2005. The mixture of clay in raw materials by percent varied from 12-31.2 percent during the 1982 period. The clay was mined at CEMEX Brooksville. See Table 1 for an in-house analysis of the 2005 mix makeup.

Table 1. CEMEX Analysis of Kiln Feed Makeup During 11/04 -3/05 Period.

Mix Component	Clay/Fly ash Operating Mix Variations %
Limestone %	75 % to 80 %
Sand %	0 % to 1 %
Dry Fly Ash %	4% to 5 %
Wet Fly Ash %	4% to 7 %
Mill Scale %	0 to 0.5%
Clay %	10 % to 15 %

ii. How does the analysis of the clay used in the past compare to that for the clay to be used from the CEMEX quarry as a result of installing the clay shredder system?

The clay and mix will be approximately the same because of the same mining location.

iii. Has compliance testing for compliance with permit limitations and/or MACT D/F limitation been conducted while using any kiln mix containing clay? If so when was the testing done, what was the kiln mix makeup, and what was the source of the clay?

Compliance testing was not conducted while utilizing clay in the kiln raw material mix.

6. Potential PM/PM_{10} Emission Calculations (Table 1 in Appendix A to the application)
In the Description of the Proposed Construction it is stated that while shredding the clay flyash is added to coat the clay and reduce the moisture content of the resulting mix. In the response letter it was stated that the moisture content of the clay/flyash mix is estimated to be 9%. For purposes of adjusting the PM/PM_{10} emission factors (Ef) for estimating PM emissions from the shredder (Clay Processing) and the post-shredder material transfer points (Fugitive Sources), 9% would appear to be the appropriate moisture content to be used to compare with the moisture content the emission factors are based on rather than the 15% moisture content that was used. Please provide justification for the use of the 15% moisture content, or revise Table 1 (Potential PM/PM 10 Emissions from Clay Shredder System) to reflect use of a revised (higher) Ef adjustment factor.

It is coincidental that nine percent is used to reduce the emission factor of the crushed rock and estimate percent moisture of the clay/fly ash mix. Table 1 only to clay and fugitive emissions to determine potential emissions and does not refer to clay/fly ash mix in determining potential emissions.

The clay moisture content of 15 % is based on data for an independent laboratory soil analysis and a conservative estimate for average moist content of clay quarried at CEMEX (See attached laboratory soil analysis document). Crushed stone moisture content of 1.3 percent is from AP-42, Chapter 11.19.2.

Table 1, Potential PM/PM_{10} Emissions from *Clay Shredder System* utilize 9 percent of the crushed stone emission factor for clay and fugitive sources only and not for clay/fly ash mix (refer to Note (6)). The clay and fugitive sources emission factors are reduced to nine percent of the emission factor for rock crushing and is not a moisture content percent.

$$100\% - ((15\% - 1.3\%) / 15\%) = 9\%$$

CEMEX request that the permit allow for the addition of ***WET*** fly ash to the clay shredder system. The wet fly ash would further reduce fugitive emission. Calculations for wet fly ash are included revised Table 1 of Attachment A in this submittal.

Please contact me if you have any questions.

Sincerely,

Neil A. Lofgren, P.E.
Project Engineer

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Attachments: Attachment A

KOOGLER & ASSOCIATES, INC.
ENVIRONMENTAL SERVICES

P.E.

ATTACHMENT A

Neil A. Lofgren
P.E. 61744

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Table 1. Potential PM/PM_{10} Emissions from Clay Shredder

CEMEX USA Inc., Quarry (Revised 06/20/2006)

Process: Clay Shredding

Pollutant	Production Rate (TPH)	Production Percent (1) (%)	Operating Hours (hr/day)	Operating Hours (hr/yr)	Emission Factor (2) (lb/ton)	Potential Emissions Hourly (lb/hr)	Potential Emissions Annual (tpy)
PM	200	85%	24	8,760	0.00026 (6)	0.04	0.19
PM_{10}	200	85%	24	8,760	0.00010 (6)	0.02	0.08

Process: Fly Ash Addition (Dry)

Pollutant	Production Rate (TPH)	Production Percent (1) (%)	Operating Hours (hr/day)	Operating Hours (hr/yr)	Emission Factor (3) (lb/ton)	Potential Emissions Hourly (lb/hr)	Potential Emissions Annual (tpy)
PM	200	15%	24	8,760	0.00447	0.13	0.59
PM_{10}	200	15%	24	8,760	0.00243	0.07	0.32

Process: Fugitive Sources (4)

Pollutant	Production Rate (TPH)	Production Percent (1) (%)	Operating Hours (hr/day)	Operating Hours (hr/yr)	Emission Factor (5) (lb/ton)	Potential Emissions Hourly (lb/hr)	Potential Emissions Annual (tpy)
PM	200	100%	24	8,760	0.00026 (6)	0.16	0.68
PM_{10}	200	100%	24	8,760	0.00010 (6)	0.06	0.25

Process: Fly Ash Addition (Wet) (7)

Pollutant	Production Rate (TPH)	Production Percent (1) (%)	Operating Hours (hr/day)	Operating Hours (hr/yr)	Emission Factor (3) (lb/ton)	Potential Emissions Hourly (lb/hr)	Potential Emissions Annual (tpy)
PM	200	15%	24	8,760	0.00032	0.010	0.042
PM_{10}	200	15%	24	8,760	0.00018	0.005	0.023

	Potential Emissions Hourly (lb/hr)	Potential Emissions Annual (tpy)
Combined Process Totals with Dry Fly Ash		
PM	0.33	1.46
PM_{10}	0.15	0.65
Combined Process Totals with Wet Fly Ash		
PM	0.21	0.92
PM_{10}	0.08	0.35

Notes:

(1) Base on Shredder capacity of 200 tph, 85% clay & 15% fly ash.

(2) Clay emission factors based on AP-42, 11.19.2 Crushed stone Processing and Pulverized Mineral Processing emission factors for crushed stone processing operations, Table 11.19.2-2.

(3) Fly ash emission factors based on AP-42 Section 11.12 Concrete Batching background documentation, Table 5.5 - Cement Supplement Silo Filling Emission Factors.

(4) Fugitive sources include three points: clay loading hopper, drop point from shredder to conveyor and the mixer at the end of the conveyor.

(5) Fugitive emission factors based on AP-42, 11.19.2 Crushed stone Processing and Pulverized Mineral Processing emission factors for crushed stone processing operations, Table 11.19.2-2 for conveyor transfer points.

(6) Emission factors reduced by 91% to allow for increase moisture content difference of rock (1.3%) and wet clay (15%). The combined moisture content result is 9% .

(7) Emission factors reduced by 93% to allow for increase moisture content difference of rock (1.3%) and wet fly ash (18%). The combined moisture content result is 7%.

Table 2. Potential PM/PM_{10} Emissions from Fly Ash Handling,
CEMEX USA Inc., Quarry (Revised 06/20/2006

Process: Fly Ash Handling (Dry)

Pollutant	Delivery Rate (1) (TPH)	Operating Hours (hr/day)	Operating Hours (hr/yr)	Emission Factor (2) (lb/ton)	Potential Emissions Hourly (lb/hr)	Potential Emissions Annual (tpy)
PM	25	16	5,840	0.00447	0.11	0.33
PM_{10}	25	16	5,840	0.00243	0.06	0.18

Process: Fly Ash Handling (Wet)

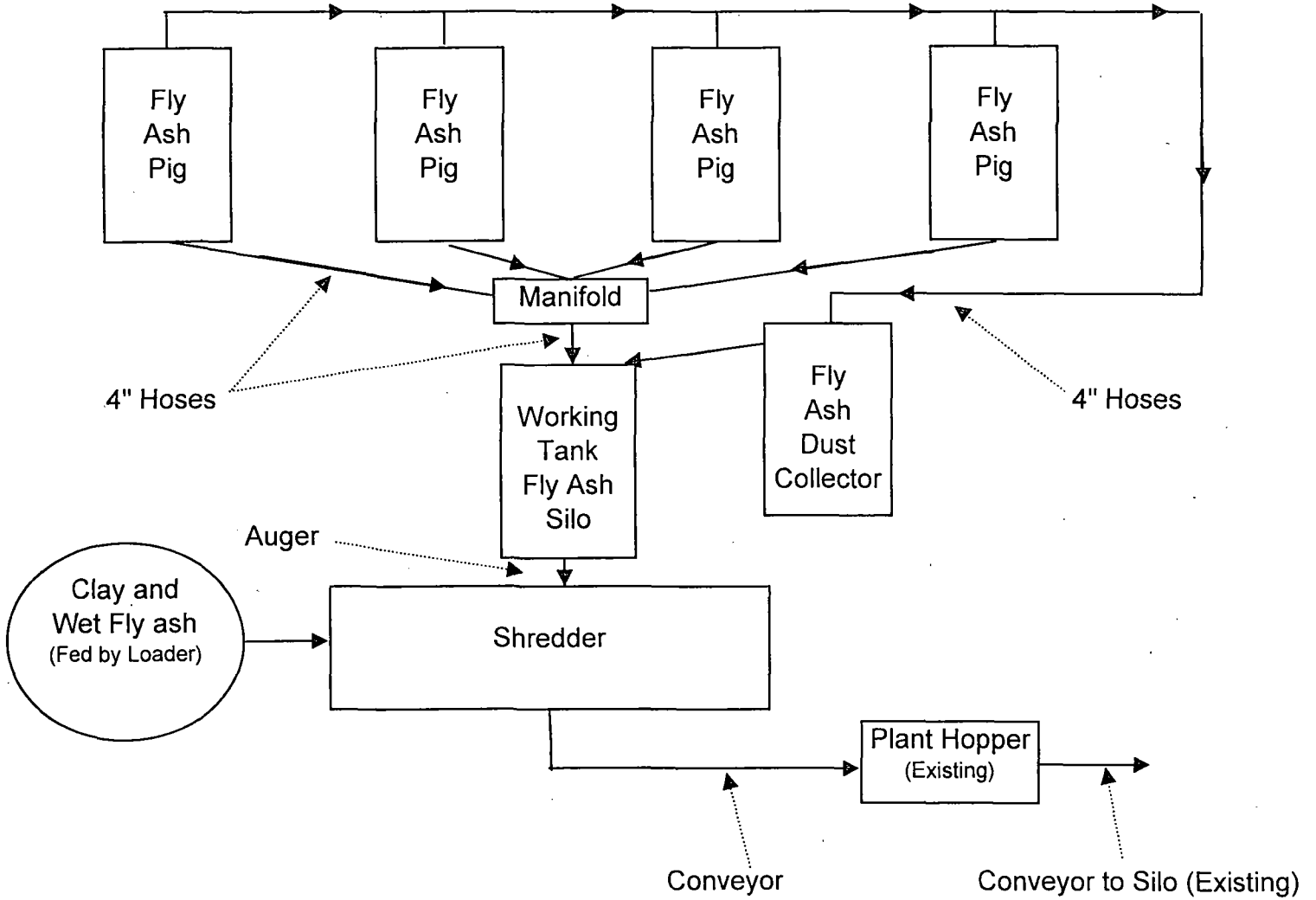
Pollutant	Delivery Rate (1) (TPH)	Operating Hours (hr/day)	Operating Hours (hr/yr)	Emission Factor (3) (lb/ton)	Potential Emissions Hourly (lb/hr)	Potential Emissions Annual (tpy)
PM	25	16	5,840	0.00000	0.0000	0.0000
PM_{10}	25	16	5,840	0.00000	0.0000	0.0000

Notes:
(1) Base on delivery truck capacity of 25 ton per load and 1 hour loading time.
(2) Fly ash emission factors based on AP-42 Section 11.12 Concrete Batching background documentation, Table 5.5 - Cement Supplement Silo Filling Emission

Table 3. Potential PM/PM10 Emissions from Clay Shredding and Fly Ash Handling, CEMEX USA Inc., Quarry (Revised 06/20/2006)

Combined Total Emissions:	Potential Emissions	
Pollutant	Hourly (lb/hr)	Annual (tpy)
Process: Table 1. Clay Shredder		
PM	0.33	1.46
PM_{10}	0.15	0.65
Process: Table 2. Fly Ash Handling		
PM	0.11	0.33
PM_{10}	0.06	0.18
Combined Totals		
PM	0.45	1.79
PM_{10}	0.21	0.82

Figure 1- Process Flow Diagram - Shredder and Associated Equipment.
CEMEX USA Inc., Quarry (Revised 06/20/2006)



Description of Proposed Construction

CEMEX is proposing to construct a clay shredder at the CEMEX cement facility in Brooksville, Florida. Clay is an additive in the cement making process.

Clay is mined on CEMEX Brooksville property at 10 to 22% moisture content. Wet clay can cause equipment plugging in the process and therefore can not be utilized. The clay supply is mixed onsite to lower the moisture content to approximately 15% prior to processing in the shredder.

The shredder installation will consists of four fly ash storage tanks (pigs), a fly ash storage silo (working tank) with a dust house, a shredder, a conveyor and connecting hoses. The shredder is to be utilized in processing clay as an additive in the cement making process.

Wet clay will be loaded into the shredder hopper and shredded to reduce the clay clumps size to 1" to 3". While shredding the clay, fly ash is added to coat the clay and reduce the moisture level of the mix *in order to reduce process plugging.* Fly ash is also an additive in the cement making process. The mixture, required to reduce the clay to the desired moisture content the will vary from approximately 85% clay and 15% fly ash.

Fly ash is to be delivered to CEMEX and loaded into one of the four "pigs", which store 125 tons of fly ash each. The pig transfer fly ash to the 25 ton storage capacity "working tank" that will meters the fly ash at the required volume to the shredder through a variable speed auger. Potential particulate emissions from fly ash transfers to the pigs and working tank will be controlled by a dust house located atop the working tank. *Wet fly ash mayalso be utilized and will be added to the clay shredder by means of a front-end loader.*

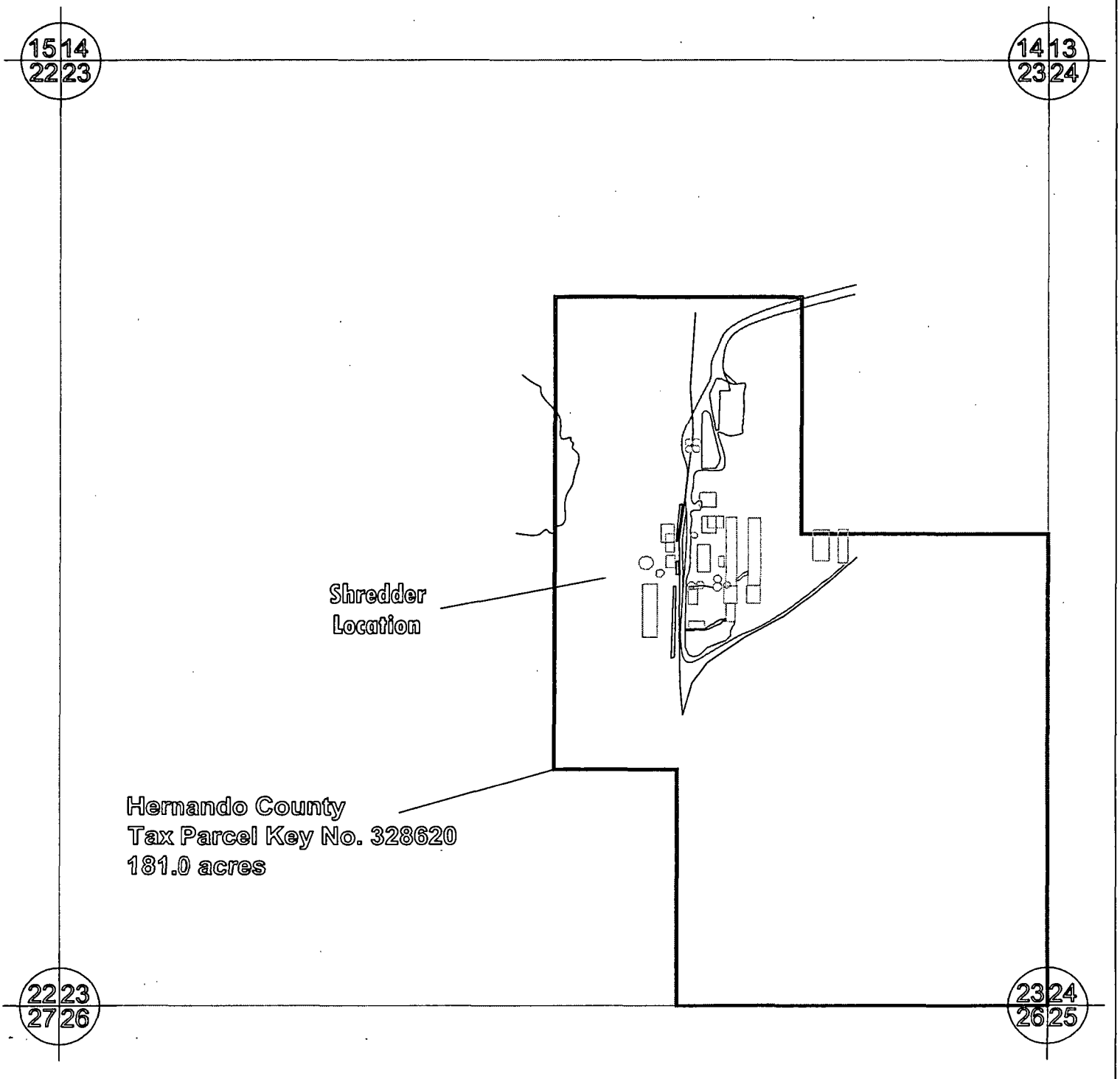
The combined product is then transferred by belt conveyor to the cement facility and utilized as an additive in the cement making process.

Rule Applicability Analysis

40 CFE 63 Part LLL— Subpart LLL--National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry

§63.1348 Standards for affected sources other than kilns; in-line kiln/raw mills; clinker coolers; new and reconstructed raw material dryers; and raw and finish mills.

§62-296.320, F.A.C., General Pollutant Emission Limiting Standards.



CEMEX Cement, Inc. Brooksville Plant	Figure 2. GENERAL SITE PLAN Section 23 Township 21s, Range 18e	Koogler & Associates Drawn By: SCC Date: 7/2001 Date Revised: 10/2005

Table 1: sample description and moisture content results for various samples		
Sample	***Moisture content***	***% of saturation***
North "ranch" clay (in-situ; capped)	≈ 14% (***as received***)	≈ 63%
North "ranch" clay (in-situ; capped)	≈ 8% (*adjusted*)	≈ 36%
North "ranch" clay (in-situ; capped)	≈ 19% (*adjusted*)	≈ 86%
North "ranch" clay/rock	≈ 18% (***as received***)	≈ 75%
North "ranch" clay/rock	≈ 11% (*adjusted*)	≈ 46%
North "ranch" clay/rock	≈ 20% (*adjusted*)	≈ 83%
Central "clay pile 3" clay/rock	≈ 21% (***as received***)	≈ 78%
Central "clay pile 3" clay/rock	≈ 14% (*adjusted*)	≈ 52%
Central "clay pile 3" clay/rock	≈ 23% (*adjusted*)	≈ 85%
South clay/rock	≈ 20% (***as received***)	≈ 67%
South clay/rock	≈ 11% (*adjusted*)	≈ 37%
South clay/rock	≈ 25% (*adjusted*)	≈ 83%
North "ranch" clay (in-situ; **bottom**)	≈ 13% (*as received*)	≈ 59%
North "ranch" clay/rock (**bottom**)	≈ 18% (*as received*)	≈ 75%
South clay/rock (**bottom**)	≈ 16% (*as received*)	≈ 53%
Limestone screenings (-1/4 inch)	≈ 11% (*as received*)	Not measured
Wet fly ash (Crystal River)	≈ 18% (*as received*)	Not measured
Dry fly ash (TECO)	≈ 0% (*as received*)	Not measured
North clay (in-situ), 2.5% wet ash	Clay ≈ 19%, ash ≈ 18%	Not measured
North clay (in-situ), 5% wet ash	Clay ≈ 19%, ash ≈ 18%	Not measured
North clay (in-situ), 5% screenings	Clay ≈ 19%, scr. ≈ 11%	Not measured
North clay (in-situ), 5% dry clay	Clay ≈ 19%, dry cl ≈ 5%	Not measured
North clay (in-situ), 25% dry clay	Clay ≈ 19%, dry cl ≈ 5%	Not measured
North clay (in-situ), 50% dry clay	Clay ≈ 19%, dry cl ≈ 5%	Not measured
North clay/rock, 2.5% wet ash	Clay ≈ 20%, ash ≈ 18%	Not measured
North clay/rock, 5% wet ash	Clay ≈ 20%, ash ≈ 18%	Not measured
North clay/rock, 5% screenings	Clay ≈ 20%, scr. ≈ 11%	Not measured
North clay/rock, 5% dry clay	Clay ≈ 20%, dry cl ≈ 5%	Not measured
South clay/rock, 2.5% wet ash	Clay ≈ 20%, ash ≈ 18%	Not measured
South clay/rock, 5% wet ash	Clay ≈ 20%, ash ≈ 18%	Not measured
South clay/rock, 5% screenings	Clay ≈ 20%, scr. ≈ 11%	Not measured
South clay/rock, 5% dry clay	Clay ≈ 20%, dry cl ≈ 5%	Not measured
Central clay/rock, 2.5% wet ash	Clay ≈ 21%, ash ≈ 18%	Not measured
Central clay/rock, 5% wet ash	Clay ≈ 21%, ash ≈ 18%	Not measured
Central clay/rock, 5% screenings	Clay ≈ 21%, scr. ≈ 11%	Not measured
Central clay/rock, 5% dry clay	Clay ≈ 21%, dry cl ≈ 5%	Not measured