TITLE V APPLICATION REVIEW

Facility Name: Medusa Citadel, Inc.
City: Clinchfield
County: Houston
AIRS #: 153-0003 Application #: TV- 9347

Date Application Received: 10/23/96
Date Application Deemed Administratively Complete: 1/16/97
Date of Draft Permit: 11/19/97
Permit No: 3241-153-0003-V-01-0

Program	Review Engineers	Review Managers
SSPP/ASU	Cornwell	Current
SSCP/ASU	McDonald	Musgrove
ISMP	Belflower	Webber
TOXICS		

Introduction

This narrative is being provided to assist the reader in understanding the content of the referenced draft Title V operating permit. Complex issues and unusual items are explained in simpler terms and/or greater detail than is sometimes possible in the actual permit. This permit is being proposed pursuant to: (1) Section 391-3-1-.03(10) of the Georgia Rules for Air Quality Control, (2) Part 70 of Chapter I of Title 40 of the Code of Federal Regulations, and (3) Title V of the Clean Air Act Amendments of 1990. The primary purpose of this permit is to consolidate and identify existing state and federal air requirements applicable to Medusa-Citadel and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the draft permit and is presented in the same general order as the permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the methods for determining compliance with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

I. Facility Description

A. Facility Identification

1. Facility Name — Medusa-Citadel, Inc.
2. Parent/Holding Company Name — Medusa Corporation
3. Previous and/or Other Name(s) — Medusa Cement
4. Facility Location — Hwy 341 South
Clinchfield, Houston Co. 31013
5. This source is located in an attainment area.
6. There are no Class I Areas within 100 km of this source

B. Site Determination

This is one site under Title V, and one Title V permit will serve the entire facility. No site determination issues apply, and there are no other facilities which could possibly be contiguous or adjacent and under common control.

C. Existing Permits

Table 1: List of Current Permits, as Amended

Permit Number and/or Purpose of Issuance	Date of Issuance and Date of Amendments (if any)	Comments	
		Yes	No
3241-076-388-C/ construction of cement plant	5/22/73	x	
3241-076-1555-C / construction of baghouse	6/19/74	x	
3241-076-1556-C / construction of baghouse	6/19/74	x	
3241-076-1557-C / modify ESP (no longer used)	6/19/74	x	
3241-076-2529-C / construction of 2 baghouses	10/30/74	x	
3241-076-3620 -C / construct mill and 2 baghouses	6/18/75	x	
3241-076-6444-O/ cement plant except dryer/kiln/cooler	1/16/79 , none		x
3241-076-6095-O/ #5 dryer/kiln/cooler	5/12/78, 4/3/81, 1/23/84, 1/22/85, 9/8/86, 4/27/88, 1/16/90, 10/5/92, 11/30/92, 7/21/93, 4/20/94, 9/28/94, 1/6/95, 1/12/96, 8/16/96	x	

Table 2: Comments on Specific Permits

Permit Number	Comments
3241-076-6095	Amendments dated 4/3/81, 1/23/84, 1/22/85, 4/27/88 not listed in Title V application
3241-076-388-c	not listed in Title V application
3241-076-1555-c	not listed in Title V application
3241-076-1556-c	not listed in Title V application
3241-076-1557-c	not listed in Title V application
3241-076-2529-c	not listed in Title V application
3241-076-3620-c	not listed in Title V application

D. Process Description

1. SIC Code(s) 3241

2. Description of Product(s) Portland hydraulic cement shipped in bags and in bulk

3. Overall Facility Process Description

Limestone, clay, fuller's earth, and other raw materials are transported to the raw storage shed. The materials are crushed, mixed, dried (1 coal fired dryer), milled (1 roller mill), and fired, forming into 1-2" balls called "clinker" (1 coal/tire fired kiln). The clinker is cooled (1 clinker cooler), stored (1 clinker ladder), milled (3 ball mills), bagged for shipping or stored for bulk loadout. Production rates average about 85 tons per hour. Major sources of particulate matter emissions are the dryer, roller mill, kiln, clinker cooler, and finish ball mills. Particulate matter emissions also come from storage bins, mixing bins, silos, bagging operations. The dryer and kiln also emit significant amounts of SO2, NOx, CO, VOC, and HCl.

4. Overall Process Flow Diagram - See Attachment A

E. Regulatory Status

1. PSD/NSR

This source is a PSD Major source under 40 CFR Part 52, but has never undergone a PSD review. In order to avoid PSD reviews for modifications, the source has taken PSD avoidance conditions and "netted out" of PSD with emission offsets. Below are referenced the conditions in Permit No. 3241-076-6095-O that Medusa has accepted to avoid a PSD review:

Cond. No. Amend date	limit set for avoidance of PSD
(38) 1/6/95	particulate matter from clinker ladder baghouse limited to 3.5 #/hr
(39) 1/6/95	SO2 and NOx from kiln/dryer stack limited to 1617.9 tpy and 1857.6 tpy, respectively
(40) 1/12/96	kiln feed limited to 1,200,000 tons per year, and clinker to 748,000 tpy produced
(15) 9/8/86	#5 dryer coal limited to 1.34% sulfur content

2. Title V Major Source Status by Pollutant

Table 3: Title V Major Source Status

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's Title V status?		
		Major Source Status	Major Source requesting SM Status	Non-Major Source Status
PM	y	x		
PM_{10}	y	x		
SO_2	y	x		
VOC	y	x		
NO_x	y	x		
CO	y	x		
TRS	n			x
H_2S	n			x
Individual HAP	y	x		
Total HAPs	y	x		

3. MACT Standards

Future MACT standard for Portland Cement Manufacturing Plants.

4. Program Applicability

Program Code 6 - PSD:	no
Program Code 8 - Part 61 NESHAP:	no
Program Code 9 - NSPS:	yes
Program Code M - Part 63 NESHAP	future
Program Code V - Title V:	yes

II. Facility Wide Requirements

There are no facility-wide emission caps or limits associated with this source, except for the following rules. The General Provisions apply to every facility, so this has been added to Section 2. Fugitive dust rule (n) applies to all sources of fugitives unless otherwise specified, and the visible emissions rule (b) applies to all sources unless otherwise specified; these conditions are listed in Section 8.

III. Regulated Equipment Requirements

In order to determine compliance with Georgia Rule (e), the flow diagram of the entire plant has been broken down into 5 separate processes that are independent of each other (separated by storage areas). Most sources at this plant are only subject to the emission limit specified in Rule (e). The exceptions include the dryer, roller mill, kiln, clinker cooler, and clinker ladder.

The five processes break down as (#1) raw materials crushing, (#2) limestone dryer and associated bins, (#3) roller mill and homogenizing silos, (#4) preheater, kiln and clinker storage, (#5) finish mills and silos, bagging. Many of the sources listed as part of the processes qualify as insignificant sources (i.e. PTE < 5 tpy PM)

A. Brief Process Description:

Process #1, “raw materials crushing”, involves the unloading of mined raw material (limestone and fuller’s earth) from the pit. The material is crushed (roll crusher), conveyed (4 belts), and crushed again (hammermill). The material is then conveyed (4 belts) and stored in outdoor piles. This process is a source of fugitive particulate matter emissions.

Process #2, “ drying”, begins as the crushed raw materials and other materials from off site (iron slag, clay) are loaded into open top bins. The materials are measured out by a weigh table/feeder , and conveyed into the # 5 limestone dryer. Coal is weighed, milled, and burned as fuel for the dryer. The dried material then goes to a bucket elevator and a mill feed bin. This process is a source of fugitive PM, as well as stack emissions of PM, NOx, SO2. Exhaust from the dryer goes to the G25B baghouse.

Process #3, “roller mill”, begins with the roller mill. The material is then cyclone separated, and goes to homogenizing silos. This process is a source of stack particulate matter emissions. Exhaust from the roller mill goes through the cyclone separators and the G25B baghouse.

Process #4, “kiln & cooler”, begins as dried, homogenized materials are fed via airslide and bucket elevator to the 4 stage preheater, then to the kiln. Coal is weighed, milled, and burned as fuel for the kiln. In the kiln, the dried materials form small balls (1-2") called clinker. The clinker drops into the clinker cooler, then conveyed to bucket elevators. The elevators dump the cement clinker down a clinker ladder into a stockpile. This process is a source of fugitive PM, as well as stack emissions of PM, NOx, SO2, VOC, and HCl. SO2 emissions are lower than the amount generated as product of combustion; the cement clinker absorbs part of the sulfur that otherwise would exit the stack as SO2 gas. Exhaust from the kiln goes up through the preheater and into the G25B baghouse. Exhaust from the clinker cooler goes to the H50 baghouse. Exhaust from the clinker ladder goes to the CLDC baghouse.

Process # 5, “finish mill & silos” begins as gypsum is brought in and mixed with the clinker (mix is about 5% gypsum by weight). This mixture is conveyed to one of three (3) finish ball mills, each is controlled by its own baghouse. The milled cement is then conveyed to one of many silos for bulk loadout, or to the bagging room. This process is a source of particulate matter and VOC.

B. Equipment List for the Process #1:

Unit I.D.	Source Description	Pollutants Emitted	Applicable Rule/reg	Fed. Enf. ?
QRRD	Quarry roads	PM, PM-10	Rule (n)	yes
HLRD	Haul roads	PM, PM-10	Rule (n)	yes
PVRD	Paved roads	PM, PM-10	Rule (n)	yes
PC01	Primary Crusher	PM, PM-10	Rule (e)(n)	yes
02PC	Pit belt #2*	PM, PM-10	Rule (e)(n)	yes
01PC	Pit belt #1*	PM, PM-10	Rule (e)(n)	yes
01LC	Long belt #1*	PM, PM-10	Rule (e)(n)	yes
02LC	Long belt #2*	PM, PM-10	Rule (e)(n)	yes
HC02	Hammermill crusher	PM, PM-10	Rule (e)(n)	yes
03GC	Gathering belt #3*	PM, PM-10	Rule (e)(n)	yes
04LC	Long belt #4*	PM, PM-10	Rule (e)(n)	yes
65TC	Tripper belt #65*	PM, PM-10	Rule (e)(n)	yes
67CC	Cross belt #67*	PM, PM-10	Rule (e)(n)	yes
ORMP	Outdoor raw material piles	PM, PM-10	Rule (n)	yes
SRMP	Storage hall raw material piles	PM, PM-10	Rule (n)	yes
G25P	G25 dust piles	PM, PM-10	Rule (n)	yes
KSDP	Kiln feed end seal discharge piles	PM, PM-10	Rule (n)	yes

* Grouped in the equipment list as “conveyors”

Equipment List for the Process #2:

Unit I.D.	Source Description	Pollutants Emitted	Applicable Rule/reg	Fed. Enf. ?
EIRB	Medium Limestone Bin**	PM, PM-10	Rule (e)(n)	yes
E2RB	High limestone Bin**	PM, PM-10	Rule (e)(n)	yes
E3RB	Fuller's Earth Bin**	PM, PM-10	Rule (e)(n)	yes
E4RB	Clay Bin**	PM, PM-10	Rule (e)(n)	yes
E5RB	Iron Slag Bin**	PM, PM-10	Rule (e)(n)	yes
E6TF	Medium Limestone Table Feeder***	PM, PM-10	Rule (e)(n)	yes
E7TF	High Limestone Table Feeder***	PM, PM-10	Rule (e)(n)	yes
E8TF	Fuller's Earth Table Feeder***	PM, PM-10	Rule (e)(n)	yes
E9TF	Clay Table Feeder***	PM, PM-10	Rule (e)(n)	yes
E10W	Medium Limestone Weigh Feeder***	PM, PM-10	Rule (e)(n)	yes
E11W	High Limestone Weigh Feeder***	PM, PM-10	Rule (e)(n)	yes
E12W	Fuller's Earth Weigh Feeder***	PM, PM-10	Rule (e)(n)	yes
E13W	Clay Weigh Feeder***	PM, PM-10	Rule (e)(n)	yes
E14W	Iron Slag Weigh Feeder***	PM, PM-10	Rule (e)(n)	yes
E18C	E18 Belt Conveyor*	PM, PM-10	Rule (e)(n)	yes
E19C	E19 Belt Conveyor*	PM, PM-10	Rule (e)(n)	yes
E21D	#5 limestone dryer	PM, PM-10, NOx, SO2, CO	NSPS (F)	yes
E33C	E33 belt conveyor*	PM, PM-10	Rule (e)(n)	yes
E34E	E34 bucket elevator	PM, PM-10	Rule (e)(n)	yes
5DCM	E21dryer coal mill	PM, PM-10	NSPS(F)	yes
18RP	E18/E19 conveyor reject piles	PM, PM-10	Rule (n)	yes
RSTP	Reject storage piles	PM, PM-10	Rule (n)	yes

* Grouped in the equipment list as "conveyors"
** Grouped in the equipment list as "raw material bins"
*** Grouped in the equipment list as "feeders"

Equipment List for the Process #3:

Unit I.D.	Source Description	Pollutants Emitted	Applicable Rule/reg	Fed. Enf. ?
G2TF	G2 Table feeder***	PM, PM-10	Rule (e)(n)	yes
G4RM	G4 Roller mill	PM, PM-10	NSPS (F)	yes
RMRP	Roller mill reject pile	PM, PM-10	Rule (n)	yes
G41P	G41 Pumping system	PM, PM-10	Rule (e), NSPS (F)	yes
HS13	Homogenizing silos 1,2,3	PM, PM-10	Rule (e), NSPS (F)	yes
HSIB	Homogenizing silo bottoms	PM, PM-10	Rule (e), NSPS (F)	yes
MLSS	Masonry limestone silo	PM, PM-10	Rule (e), NSPS (F)	yes

Equipment List for the Process #4:

Unit I.D.	Source Description	Pollutants Emitted	Applicable Rule/reg	Fed. Enf. ?
PHAF	Preheater alleviator filter	PM, PM-10	Rule (e), NSPS (F)	yes
5KSD	#5 Kiln feed end seal discharge chute	PM, PM-10	Rule (e)(n)	yes
H75K	#5 Cement kiln	PM, PM-10, SO2, NOx,, HAPS, CO	NSPS (F)	yes
P1HP	Coal pit hopper	PM, PM-10	Rule (e)(n)	yes
P1DC	Pit drag conveyor	PM, PM-10	Rule (e)(n)	yes
PIBE	Pit bucket elevator	PM, PM-10	Rule (e)(n)	yes
ULC2	Unloading belt conveyor 2	PM, PM-10	Rule (e)(n)	yes
H29M	#5 kiln coal mill	PM, PM-10	NSPS(F)	yes
H14C	#5 clinker cooler	PM, PM-10, SO2,NOx, VOC	NSPS (F)	yes
CLCS	Clinker conveying system	PM, PM-10	Rule (e)(b)	yes
CSCL	Clinker ladder	PM, PM-10	permit limit	yes
CHCP	Clinker piles	PM, PM-10	Rule (n)	yes
CHGP	Gypsum piles	PM, PM-10	Rule (n)	yes

Equipment List for the Process #5:

Unit I.D.	Source Description	Pollutants Emitted	Applicable Rule/reg	Fed. Enf. ?
04GB	#4 finish mill gypsum bin*	PM, PM-10	Rule (e)(n)	yes
05GB	#5 finish mill gypsum bin*	PM, PM-10	Rule (e)(n)	yes
06GB	#6 finish mill gypsum bin*	PM, PM-10	Rule (e)(n)	yes
04CB	#4 finish mill clinker bin*	PM, PM-10	Rule (e)(n)	yes
05CB	#5 finish mill clinker bin*	PM, PM-10	Rule (e)(n)	yes
06CB	#6 finish mill clinker bin*	PM, PM-10	Rule (e)(n)	yes
04SB	#4 finish mill specialty bin*	PM, PM-10	Rule (e)(n)	yes
05SB	#5 finish mill specialty bin*	PM, PM-10	Rule (e)(n)	yes
MLSF	Masonry limestone feeder	PM, PM-10	Rule (e)(n)	yes
FMMF	Finish mill methylcellulose feeder	PM, PM-10	Rule (e)(n)	yes
OGYP	Outdoor gypsum piles	PM, PM-10	Rule (n)	yes
04FM	#4 finish mill	PM, PM-10, VOC	Rule (e)(b)	yes
05FM	#5 finish mill	PM, PM-10, VOC	Rule (e)(b)	yes
06FM	#6 finish mill	PM, PM-10, VOC	Rule (e), NSPS (F)	yes
04FA	#4 finish mill auxiliary system	PM, PM-10	Rule (e)(b)	yes
05FA	#5 finish mill auxiliary system	PM, PM-10	Rule (e)(b)	yes
06FA	#6 finish mill auxiliary system	PM, PM-10	Rule (e), NSPS (F)	yes
BS23	Bulk silos south side	PM, PM-10	Rule (e)(b)	yes
BS19	Bulk silos north side	PM, PM-10	Rule (e)(b)	yes
OSM9	Old silos middle section	PM, PM-10	Rule (e)(b)	yes
OSSM	Old silos south section	PM, PM-10	Rule (e)(b)	yes
OSN1	Old silos north section	PM, PM-10	Rule (e)(b)	yes
PKMC	Packing equipment	PM, PM-10	Rule (e), NSPS (F)	yes
BSLO	Bulk silo loadouts	PM, PM-10	Rule (e), NSPS (F)	yes
BSLP	Bulk silo loadout piles	PM, PM-10	Rule (n)	yes

* Grouped in the equipment list as “finish bins”

C. Equipment & Rule Applicability:

- Emission and Operating Caps (Process #1 / raw material crushing)

  There are no emission caps on Process #1. PM emissions and opacity are regulated under Ga. rules (e) and (n). Rule (e) and Rule(n) apply to the crushers and conveyor belts, while piles are only subject to the fugitive dust Rule (n).

- Emission and Operating Caps (Process #2 / Drying)

  Existing Condition 39 (1/6/95) limits the NOx and SO2 from the dryer/kiln/roller mill baghouse stack to 1857.6 tpy and 1617.9 tpy, respectively. This limit is a PSD avoidance condition put in place 1/6/95 when permitted production was increased. This condition is incorporated into the Title V permit as conditions 3.2.9 and 3.2.8

  Existing permit Condition 15 (9/8/86) limits the sulfur content of coal used in the dryer to 1.34%. This was put in to avoid PSD when the dryer switched from burning oil to coal. Incorporated as Condition 3.2.1

  Existing permit Condition 30 (7/21/93) limits the type and amount of on-site generated waste oils and solvent burned in the dryer to 13,000 gallons per year. This amount was established in the permit application to burn waste materials. Incorporated as Conditions 3.2.2, 3.2.4, and 3.2.5.

- Emission and Operating Caps (Process #3 / Roller mill system)

  There are no emission caps associated with process # 3.

- Emission and Operating Caps (Process #4 / Kiln & cooler)

  Existing Condition 39 (1/6/95) limits the NOx and SO2 from the dryer/kiln/roller mill baghouse stack to 1857.6 tpy and 1617.9 tpy, respectively. This limit is a PSD avoidance condition put in place 1/6/95 when permitted production was increased. This condition is incorporated into the Title V permit as conditions 3.2.9 and 3.2.8

  Existing Condition 40 (originally 1/6/95, modified 1/12/96) limits the kiln to 1,200,000 tons dried feed input and 748, 000 tons clinker produced per 12 month period. This Condition is PSD avoidance put in when the permitted production rate was increased. This condition is incorporated into the Title V permit as condition 3.2.10.

  Existing permit Condition 38 (1/6/95) limits PM from the clinker ladder baghouse to 3.5 lbs./hour to avoid PSD. This limit was put into place as “net reductions” of emissions when the permitted production rate was increased. This condition is incorporated into the Title V permit as condition 3.2.7.

  Existing Condition 13 (8/16/96) limits the amount of tires burned in the kiln to 27% of the total fuel weight. This condition was agreed upon by EPD and Medusa because this was the rate of feed at which background information was developed. This condition is incorporated into the new Title V permit as Condition 3.2.6.

Existing Condition 20 (7/21/93) limits the amount of on-site generated waste oil burned in the kiln to 13,000 gallons per year, as per the permit application. It also limits the amount of on site generated hazardous waste burned in the system to 1200 gallons per month, and 20 gallons per hour. This condition keeps Medusa out of BIF regulations. This condition is incorporated into the new Title V permit as Conditions 3.2.2 through 3.2.4.

- Emission and Operating Caps (Process #5 / finish mill & silos)

  There are no emission caps associated with process #5.

- Applicable Rules and Regulations -

  Rules and Regulations Assessment:
  Following is an overview of the Specific Rules and Regulations that apply to this facility.

  Ga. Rule (e) "Particulate Emission from Manufacturing Processes" applies to all processes that are not covered by a more specific rule or regulation. A process is defined as an operation that can operate independently of other processes. In Medusa's case, stockpiles and storage areas separate processes that can operate while the rest of the plant does not.

  Ga. Rule (n) "Fugitive Dust" applies to all sources of fugitive dust not covered by another more stringent limit. Incorporated into permit as Cond. 3.4.4 and 8.22

  Ga. Rue (b) "Visible Emissions" applies to all sources which do not have a more stringent limit. Incorporated into permit as Cond 3.4.5.

  Ga. Rule (g) " Sulphur Dioxide" applies to all fuel burning sources capable of burning fossil fuel. The kiln (390 MMBtu/hr capacity) is subject to the 3% sulfur limit, the dryer (150 MMBtu/hr capacity) is an affected facility subject to 3% sulfur limit, however, an existing permit condition limits coal sulfur content to 1.34% by weight.

  40 CFR Part 60, Subpart F "Standards of Performance for Portland Cement Plants" applies to facilities built or modified after 8/17/71. Kilns, clinker coolers, raw material drying, milling, storage, clinker storage, finish milling, storage, bagging, loading, and conveyor transfers are affected facilities. The kiln baghouse stack (also the dryer and roller mill baghouse) is limited to 0.30 lbs. PM/ton dry feed into kiln & 20% opacity. The clinker cooler baghouse stack is limited to 0.10 lbs. PM/ton dry feed into the kiln & 10% opacity. All other affected facilities are limited to 10% opacity; no emission rate limit applies. NSPS also requires COMs for both the kiln and clinker cooler baghouse stacks.

Emission and Operating Standards:

Equipment in Process #1, unless otherwise specified, is subject to is Ga. Rule (e) for particulate matter emissions, as well as Rule (n) for fugitive opacity. All emission units in this process are uncontrolled. The Rule (e) PM emission limit is incorporated into the new permit as Conditions 3.4.1 and 3.4.2. Future construction or modification of would be subject to the opacity limit of Subpart OOO, as well as Rule (e). Piles are only subject to the Rule (n) for fugitive dust.

Equipment in Process #2 , unless otherwise specified, is subject to Ga. Rule (e) for particulate matter, Rule (n) for fugitive dust and Rule (b) for baghouse stack opacity. Most of the conveyors, bins, and feeders are open/uncontrolled sources, so only Rules (e) and (n) apply to them. Limestone dryer #5, which is part of process #2, is subject to NSPS Subpart F. The dryer/kiln/roller mill baghouse is limited to 0.3 # PM/ton dry feed into the kiln and 20% opacity. The dryer is subject to Ga. Rule (g), limiting sulfur in fuel to 3% by weight. The coal mill exhausts directly to the dryer, so NSPS (F) is applicable. Piles are only subject to the Rule (n) for fugitive dust.

Process #3: The kiln/dryer/roller mill baghouse is subject to the NSPS Subpart F limits of 0.3 lbs PM./ton dry feed into the kiln and 20% for PM. The homogenizing silos and bottoms, masonry limestone silo, and the G41 pumping station were built after 1971, and therefore are subject to the NSPS Subpart opacity limit of 10%, as well as Rule(e). Future construction or modifications would be subject to Subpart F and Rule (e). All other equipment is subject to Rule (e), Rule (b) for baghouse stack opacity, and (n) for fugitive dust opacity. Bins with open tops are subject to Rule (e) and Rule (n) unless otherwise noted. Silos are subject to Rule (e) and Rule (b) unless otherwise noted. Piles are only subject to the Rule (n) for fugitive dust.

Process #4: Equipment, unless otherwise specified, is subject to a PM limit under Ga. Rule (e), (n) for fugitive dust opacity and (b) for baghouse stack opacity. The kiln/dryer/roller mill baghouse is subject to NSPS, which limits PM to 0.3 #/ton of dry feed to the kiln and 20% opacity. The clinker cooler is subject to 40 CFR Part 60, Subpart F, which carries a PM limit of 0.1 #/ton of dried feed into the kiln, and a 10% opacity standard. The kiln and dryer are also subject to Ga. Rule (g) limiting Sulfur in fuel is limited to 3%. The alleviator filter, clinker storage ladder, and kiln feed delivery system were built after 1971, and therefore are subject to the NSPS Subpart opacity limit of 10%. Future construction or modifications would be subject to Subpart F and Rule(e). Bins with open tops are subject to Rule (e) and Rule (n) unless otherwise noted. Silos are subject to Rule (e) and Rule (b) unless otherwise noted. Piles are only subject to the Rule (n) for fugitive dust.

Process #5: Equipment, unless otherwise specified, is subject to Ga. Rule (e) for particulate matter emissions, (n) for fugitive dust, and (b) for baghouse stack opacity. The #6 finish mill, #6 mill auxiliary system, packing equipment, and bulk silo loadouts were built after 1971, and therefore are subject to the NSPS Subpart opacity limit of 10%. Future construction or modification would be subject to the opacity limit in Subpart F, as well as Rule (e). Bins with open tops are subject to Rule (e) and Rule (n) unless otherwise noted. Silos are subject to Rule (e) and Rule (b) unless otherwise noted. Piles are only subject to the Rule (n) for fugitive dust.

D. Compliance Status: According to Medusa's Section 11 forms, this source is operating in compliance with the permit and all rules and regulations.

E. Testing, Monitoring and Recordkeeping:

- Testing on the kiln stack is required to determine compliance with 40 CFR Part 60, Subpart F particulate matter limit; see Section IV for details
- Monitoring is required to determine compliance with NSPS, SO2 and NOx permit limits, PM and visible emissions rules; see Section V for details
- Recordkeeping is required to determine compliance with production limits, and other permit conditions; see Section VI for details.

E. Operational Flexibility: Medusa has not requested any operational flexibility.

F. Permit Conditions:

3.2.1 Limits sulfur content of coal burned in limestone dryer to 1.34%. Carried over existing Condition 15 dated 9/8/86 which avoids PSD. No changes.

3.2.2 Limits waste oils and solvents burned in kiln to 13,000 gallons per 12 months. Carried over existing Condition 20 dated 7/21/93. No changes.

3.2.3 Limits on-site generated waste oils and solvents (containing hazardous waste) burned in kiln to 20 gallons/hour and 1200 gallons per month. Carried over existing Condition 20 dated 7/21/93. These values exempt Medusa from BIF regs. Modified for format.

3.2.4 Established types of on-site generated waste oils and solvents that can be burned in the kiln and dryer. This condition references the list located in Attachment D. Carried over from existing conditions 20 & 21 dated 7/21/93, and 10/5/92. List modified to allow different supplier's of same product.

3.2.5 Limits the amount of raw materials soaked in spilled (non-hazardous) waste burned in the dryer to 13,000 gallons per year. Carried over from condition 30 dated 7/21/93. No changes.

3.2.6 Limits tires burned in kiln to 27% of total fuel. Carried over existing Condition 13 dated 8/16/96. No changes

3.2.7 Limits PM from clinker ladder baghouse to 3.5 lbs./hr. Carried over existing Condition 38 dated 1/6/95 which avoids PSD; used for "netting" reduction. No changes.

3.2.8 Limits SO2 from kiln/dryer/roller mill baghouse stack to 1617.9 tons per 12 months. Carried over existing Condition 39 dated 1/6/95 which avoids PSD. CEM's insure compliance. Modified for format.

3.2.9 Limits NOx from kiln/dryer/roller mill baghouse stack to 1857.6 tons per 12 months. Carried over existing Condition 39 dated 1/6/95 which avoids PSD. CEM's insure compliance. Modified for format

3.2.10 Limits dry feed into kiln to 1,200,000 tons per 12 months and limits production of clinker to 748,000 tons per 12 months. Carried over existing Condition 40 dated 1/12/96 avoids PSD. No changes

3.3.1 Limits PM from kiln/dryer/roller mill baghouse stack to 0.3 #/ton kiln feed. NSPS (F) requirement. Carried over existing condition 7 dated 5/12/78. No changes

3.3.2 Limits PM from the clinker cooler baghouse stack to 0.1 #/ton kiln feed. NSPS (F) requirement. Carried over existing condition 8 dated 5/12/78. No changes.

3.3.3 Limits opacity to 10% from all NSPS (F) affected sources. NSPS (F) requirement. Carried over from condition 9 dated 5/12/78. Modified for more precise wording.

3.4.1 Establishes Georgia Rule (e) for old sources in the permit. Currently not in the SIP permit.

3.4.2 Established Georgia Rule (e) for new sources in the permit. Currently not in the SIP permit.

3.4.3 Establishes Georgia Rule (g) in the permit. Currently not in the SIP permit.

3.4.4 Establishes Georgia Rule (n) fugitive opacity limit for sources specified in Table 3.1.

3.4.5 Establishes Georgia Rule (b) for visible emissions from stacks specified in Table 3.1

3.5.1 Requires that clinker ladder baghouse be operated when the kiln is operated and requires pressure drop and temperature gauges. Carried over existing Condition 37 dated 1/6/95. No changes

3.5.2 Requires that the clinker ladder baghouse be maintained. Carried over existing Condition 33 dated 4/20/94. No changes.

3.5.3 Requires that spare bags for the clinker ladder baghouse be kept on site. Carried over existing Condition 34 dated 9/28/94. No changes.

3.5.4 Requires that spare parts for the clinker ladder baghouse be kept. Carried over existing Condition 35 dated 9/28/94. No changes.

IV. Testing Requirements (with Associated Recordkeeping and Reporting)

General Testing Requirements:

The No. 5 Kiln, Roller Mill, and Dryer combined stack (5KES) and the Clinker-Cooler stack (5CES) are required to be tested once every five years for Particulate Matter. These conditions were in the facility's previous permit. This permit sets the next scheduled tests for these sources to be prior to July 1, 2000. (The last emissions tests were performed in July 1995). None of the other applicable regulations requires performance testing, therefore this permit does not contain any other conditions to require specific testing for any sources. The permit does, however, specify that a performance test may be required to determine compliance with the emission limits in Part 3.0 and the test methods to be used to determine compliance are listed. A general condition to require notification of any test and for the submission of a test plan is included.

V. Monitoring Requirements (with Associated Recordkeeping and Reporting)

Specific Monitoring Requirements:

The No. 5 Kiln and No. 5 Clinker-Cooler are subject to 40CFR60 Subpart F and, therefore, are required to install Continuous Opacity Monitoring Systems. The No. 5 Kiln stack is also required to have Continuous Emission Rate Monitoring Systems for Nitrogen Oxides and Sulfur Dioxide due to a previous permit condition to avoid Prevention of Significant Determination (PSD). The original permit specified Continuous Emissions Monitoring System for Sulfur Dioxide, Nitrogen Oxides, and flow. The term was changed to Continuous Emission Rate Monitoring System to more accurately describe the equipment present. No new equipment is expected to be required. The deviation level for Nitrogen Oxides and Sulfur Dioxide is the allowable emission rate for the rolling 12-month total.

A previous permit also required the use of existing monitors to monitor the temperature, pressure, Carbon Monoxide, and Oxygen in the No. 5 kiln system to ensure continuous good combustion and the monitoring of air flow settings for the No. 5 Dryer to ensure that excess Oxygen is present. This permit does not require that pressure be monitored since it has now been determined that for this case no significant connection between pressure and good combustion is apparent. The temperature and Oxygen parameters have also been deleted at the request of the Permittee. The air temperature must be very high to produce cement, and the Oxygen monitor location does not accurately measure Oxygen concentration due to air leaking into the ductwork prior to the monitor. These parameters, therefore, do not sufficiently indicate good combustion. Carbon Monoxide will be monitored and will provide a sufficient way to assess good combustion in the kiln. The No. 5 Dryer ID Fan motor amps will be used to indicate air flow. The trigger values to report deviations are based on levels previously used by the source to indicate good combustion or excess Oxygen.

The Clinker Ladder Dust Collector (CLDC) is required by a pervious permit to monitor baghouse pressure drop and inlet temperature once per shift. This condition remains, and a condition to monitor pressure drop across all other baghouses, except the No. 5 Kiln and No. 5 Clinker-Cooler (COMS required), once per day is added. Daily maintenance checks are also required on all baghouses that monitor pressure drop. The trigger values for deviations of pressure drop were determined from pressure drops observed by the Permittee during operation of the equipment. The temperature trigger value is based on the temperature

tolerance for the bags installed. The Nomex bags can withstand 375 °F continuously with surges to 475 °F.

To determine compliance with the sulfur limitation for the coal burned in the kiln, each load of coal is to be sampled and tested for sulfur content. The Permittee is given the option of either sampling and analyzing the coal or obtaining a statement certifying that the coal has been sampled and analyzed from the coal supplier.

The permit requires all uncontrolled sources of Particulate Matter be checked daily for obvious mechanical failure and Visible Emissions and include requirements to take corrective action and keep necessary records.

Recordkeeping and Reporting Requirements:

Records, including identification of any deviations from applicable monitoring triggers, the cause of such occurrence, the corrective action taken, and the sulfur content of the coal received are required to be kept by the Permittee and reporting is required on a quarterly basis.

Quarterly reporting is required in Condition 5.3.1. This condition requires submittals for deviations as defined, CERMS and COM downtime, coal analysis, CERMS result on a daily and monthly basis, fuel usage and production. Most of these items were required under existing permit conditions.

VI. Other Recordkeeping and Reporting Requirements

General Recordkeeping and Reporting Requirements:

1. Exceptions to General Recordkeeping and Reporting Requirements - Not Applicable

Specific Recordkeeping and Reporting Requirements:

Condition 6.2.1 involves recordkeeping regarding the # 5 kiln and #5 dryer. This condition is carried over from existing condition 45 dated 1/6/95 as part of a PSD avoidance permit amendment. Condition 6.2.1 requires that monthly records be kept for: Hours of kiln operation; specific fuel usage of kiln; specific fuel usage of dryer; amount of dried raw feed and amount of clinker. These will support conditions 3.2.1, 3.2.6, and 3.2.10 (limiting sulfur in dryer coal, limiting tires as percentage total fuel, and limiting input/production, respectively).

Condition 6.2.2 is carried over from existing condition 26 dated 10/5/92 requiring that monthly records of on-site generated waste oils and solvents be kept. This will support condition 3.2.2 through 3.2.5 limiting burning of waste oils and solvents.

Condition 6.2.3 is carried over (modified) from conditions 31 and 32 dated 7/21/93 requiring that hourly and monthly records of hazardous waste burned in the kiln be kept. This will support Condition 3.2.3.

Quarterly reporting is all specified in Condition 5.3.1. See narrative for Section 5 (Monitoring) for details regarding the required quarterly reports.

VII. Specific Requirements

A. Operational Flexibility

Medusa has not requested any operational flexibility as part of the Title V permit application, however, in order to keep from having to open the Title V permit every time a change in the process equipment takes place, the emissions unit table has been developed to offer flexibility to the permit.

Instead of listing every single piece of equipment in the permit equipment list, similar sources that have small emission rates have been grouped. The sources grouped were conveyor belts, raw material bins, and feeders. PTE from these sources is less than 5 tpy each. This will allow for additional belts, feeders, and bins to be added without modifying the equipment list. All conveyors, raw bins, and feeders are subject to Rule (e).

Although the current conveyor belts, raw material bins, and feeders were all built before 1968, and therefore are not subject to NSPS (F), any new belt, bin, or feeder will be subject to NSPS (F), and opacity testing would be required. A testing condition has been added to require opacity testing on any new affected source.

B. Alternative Requirements

Existing Condition 40 limits the raw material feed to 1,200,000 tpy and the clinker produced to 748,000 tpy. Medusa has requested in Section 3.30 that the clinker limit be dropped from the Condition, reasoning that the NSPS (F) limit is based only on the raw material feed rate. *The clinker production limit cannot be dropped because it was added to avoid PSD and emissions from several sources (finish mills, bagging, etc.) would change with a change in production rate.*

Existing Condition 43 requires that SO2 and NOx CEM's be installed and maintained. Medusa has requested to modify this Condition to drop the "installation" part, reasoning that this has already been done.

C. Insignificant Activities

The insignificant activities listed in Section 4.10 of the Title V permit application are incorporated into the Permit under Attachment B.

D. Temporary Sources

No temporary sources are discussed in the permit

E. Short-Term Activities

No short term activities are listed in the Section 4.40 of the Application

F. Compliance Schedule/Progress Reports

- The scheduled MACT standard for Portland Cement Manufacturing has not been proposed yet. The Permittee must comply with the future standard if it is applicable.

G. Emissions Trading

- not applicable

H. Acid Rain Requirements

- not applicable

I. Prevention of Accidental Releases

- Medusa-Citadel has Propane on site in quantities above the 10,000 pound threshold listed in Section 12.10 of the Application. Medusa will be subject to 112(r) for flammable gases, which may require Medusa to submit a safety plan in the future.

J. Stratospheric Ozone Protection Requirements

- The facility has indicated that they are subject to Title VI; they indicated that the facility does have air conditioners that use CFC's, and they service motor vehicle air conditioners (MVAC's). Medusa is subject to 40 CFR Part 82, Subpart B (servicing MVAC's) and Subpart F (recycling and emissions reduction).

K. Revocation of Existing Permits and Amendments

- This Permit revokes the existing construction and operation permits.

L. Pollution Prevention

- There are no Pollution Prevention provisions incorporated into this Permit.

M. Specific Conditions

- None Applicable

VIII. General Provisions

Generic provisions have been included in this permit to address the requirements in 40 CFR Part 70 that apply to all Title V sources, and the requirements in Chapter 391-3-1 of the Georgia Rules for Air Quality Control that apply to all stationary sources of air pollution.

Closing Block: We have reviewed and recommend issuance of draft Permit No. 3241-153-0003-V-01-0

Program	Review Engineers	Dates	Review Managers	Dates
SSPP/ASU				
SSCP/ASU				
ISMP				
TOXICS				

Stationary Source Permitting Program Manager

Addendum

I. D. 3. MACT Standards

Proposed MACT 40 CFR Part 63, Subpart LLL.
This is changed from "future" to "proposed" because since the original application review was done, EPA has proposed the MACT standard.

III. C. Process #2/Drying
Conditions sited have been renumbered - 3.2.9, 3.2.8, 3.2.4, and 3.2.5 become 3.2.8 and 3.2.7, 3.2.3 and 3.2.4 respectively. *Done because initial Condition 3.2.3 has been removed. See III. F Permit Conditions for more details.*

III. C. Process #4/kiln
Conditions sited have been renumbered - 3.2.9, 3.2.8, 3.2.10, 3.2.7, 3.2.6, and 3.2.4 become 3.2.8, 3.2.7, 3.2.9, 3.2.6, 3.2.5, and 3.2.3, respectively. Also, all references to "hazardous waste" should be discounted. *Medusa will no longer burn anything considered hazardous waste. Because initial conditions 3.2.3 only addresses the amounts of hazardous waste permitted to burn, it has been dropped from the permit. Done because of Medusa's comments that state that they do not want to be subject to the HWC MACT, and therefore will no longer burn any material deemed hazardous waste.*

III. F Permit Conditions

Conditions 3.2.1-3.2.10 Renumbered as follows:

3.2.1 Limits sulfur content of coal burned in limestone dryer to 1.34%. Carried over existing Condition 15 dated 9/8/86 which avoids PSD. No changes.

3.2.2 Limits waste oils and solvents burned in kiln to 13,000 gallons per 12 months. Carried over existing Condition 20 dated 7/21/93. No changes.

~~3.2.3 Limits on-site generated waste oils and solvents (containing hazardous waste) burned in kiln to 20 gallons/hour and 1200 gallons per month. Carried over existing Condition 20 dated 7/21/93. These values exempt Medusa from BIF regs. Modified for format.~~

3.2.3 Established types of on-site generated waste oils that can be burned in the kiln and dryer. This condition references the list located in Attachment D. Carried over from existing conditions 20 & 21 dated 7/21/93, and 10/5/92. List modified to allow different supplier's of same product and removal of all hazardous wastes.

3.2.4 Limits the amount of raw materials soaked in spilled (non-hazardous) waste burned in the dryer to 13,000 gallons per year. Carried over from condition 30 dated 7/21/93. No changes.

3.2.5 Limits tires burned in kiln to 27% of total fuel. Carried over existing Condition 13 dated 8/16/96. No changes

Addendum, Continued

3.2.6 Limits PM from clinker ladder baghouse to 3.5 lbs./hr. Carried over existing Condition 38 dated 1/6/95 which avoids PSD; used for "netting" reduction. No changes.

3.2.7 Limits SO2 from kiln/dryer/roller mill baghouse stack to 1617.9 tons per 12 months. Carried over existing Condition 39 dated 1/6/95 which avoids PSD. CEM's insure compliance. Modified for format.

3.2.8 Limits NOx from kiln/dryer/roller mill baghouse stack to 1857.6 tons per 12 months. Carried over existing Condition 39 dated 1/6/95 which avoids PSD. CEM's insure compliance. Modified for format

3.2.9 Limits dry feed into kiln to 1,200,000 tons per 12 months and limits production of clinker to 748,000 tons per 12 months. Carried over existing Condition 40 dated 1/12/96 avoids PSD. No changes

This renumbering is due to the removal of draft condition 3.2.3 addressing the amounts of hazardous wastes burned in kiln. Medusa, in their comments to the draft, stated that they will no longer burn any hazardous waste in the kiln.

V. Specific Monitoring Requirements

Added to text of first paragraph -
Georgia EPD feels confident that COMS do provide an adequate level of compliance assurance for the particulate matter standards on both the kiln and clinker cooler. EPA, in the proposed MACT standard, has chosen COMS as the method of continuous compliance assurance with the particulate matter standard. In the preamble to the MACT standard, EPA states that a correlation exists between the particulate matter standard and the opacity standard. *This text is added because of EPA comments 1 and 2 dated 5/21/98 in which they had concerns regarding COMS as compliance assurance for the particulate matter standards.*

Second paragraph can be deleted in its entirety.
Monitoring parameters that were supposed to ensure "good combustion" were in the draft permit because of the burning of hazardous waste. Since Medusa will no longer burn hazardous waste, these conditions are no longer needed. These parameters were spelled out in condition 5.2.8 i and j. These two items have been removed from the permit, and condition 5.2.8 k has been renumbered 5.2.8i. *This is done because of Medusa's statement that hazardous waste will no longer be burned.*

Addendum, Continued

Third paragraph add the following to the explanation:
The pressure drop ranges are based on manufacturer recommendations, Permittee experience, and a site visit by associates from EPD. During the site visit, negligible visible emissions were noted from any subject baghouse. In addition, pressure drop is just one parameter utilized to assure compliance of emissions from the baghouses. Visible emission and maintenance checks are also required on the baghouses. *Change made because of Comments 4 and 5 from EPA.*

Also in the third paragraph, add this text.
Medusa believed that temperature spikes above 400 °F may occur in the CLDC that would not cause a degradation of the bags. The temperature indicator present is a thermometer in place on the CLDC inlet duct and does not continuously monitor and record the temperature. If the observer records a temperature greater than the 400 °F trigger value, he may return within the hour and take additional readings. The average of these readings taken over one hour or less would then be compared to the 400 °F trigger value to determine if a deviation took place. *Changes made because of EPA comment 6*

Fourth Paragraph, the following text should be added.
If Medusa chooses to use supplier certification, then the supplier must use one of the Division approved test methods, also, draft condition 5.2.9b has been modified to note that if supplier certification is used, Medusa must, do random on-site sulfur testing of their own. *This extra requirement was added because of EPA comment 3.*

Condition 5.3.1
Condition corrected to read "quarterly period" instead of "semiannual period", and the dates have been corrected. *Change made due to EPA comment 7.*

VI Specific Recordkeeping Requirements

Draft Condition 3.2.3 deleted in its entirety. Medusa will no longer burn hazardous waste in the kiln, and therefore, recordkeeping of the amounts burned is unneeded. Draft condition 3.2.4 renumbered as 3.2.3. *Change made due to Medusa comments stating hazardous waste will not be burned.*