KOOGLER & ASSOCIATES, INC.
Environmental Services
4014 Northwest 13th Street
Gainesville, Florida 32609
352/377-5822 FAX/377-7158

KA 690-10-03
January 4th, 2011

David Zell
Engineering Specialist IV
Florida Department of Environmental Protection
Southwest District
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926

Re: Initial Title V Air Operation Permit Application – Project No. 1190042-007-AV
American Cement Company, LLC
Sumterville Cement Plant
Request for Additional Information

Dear Mr. Zell:

Per your request for additional information to the initial Title V air operation permit application, below are the responses to the questions. Please refer to the attachments where it is indicated. RO and PE certifications statement are also included in the attachment 1.

1. Facility Process Flow Diagram Attachment – The Facility Process Flow Diagram attached to the application shows the facility as having separate wet process and dry process equipment ahead of the rotary kiln. It also shows an Optional Preheater/Precalciner or an Optional Preheater as part of the Dry Process. Based on information obtained during a site visit, the facility is using only a dry process (i.e., there is no wet process equipment) and is equipped with a preheater/precalciner as part of the dry process. Please resubmit the Facility Process Flow Diagram correcting/clarifying the items noted above, and making any other corrections/clarifications needed to accurately represent the facility process flow as it was actually built and is being operated.

Response:

Facility Process Flow Diagrams have been attached to show actual processes. See attachment 2 for details.

2. NSPS Subpart F Applicable Requirements - NSPS 40 CFR 60 Subpart F as amended in the September 9, 2010 Federal Register (effective date of November 8, 2010 , which will be prior to the effective date of the initial Title V operation permit for this facility) has additional requirements for kilns and clinker coolers for which construction

commenced after June 16, 2008. In order to confirm whether these requirements are applicable to this facility, please provide the date(s) of commencement of construction for the kiln and for the clinker cooler and the basis for these dates.

Response:

The actual commencement of construction date for the Kiln is March 13, 2007; Gantt Chart line 417 for Preheater Foundations.

The actual commencement of construction date for the Cooler is July 9, 2007; Gant Chart line 510 for Cooler/Burner Building Foundations.

See attachment 3 for details.

3. Subpart OOO Applicable Requirements - NSPS 40 CFR 60 Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) is applicable to EU 001 (Raw Material Quarrying, Crushing and Storage). This is not reflected in the application, as an identification of applicable requirements attachment was not provided for EU 001. Please provide such attachment. (See also Note below item 4. below.) Subpart OOO, as amended in the April 29, 2009 Federal Register, has additional requirements for mineral processing equipment for which construction commenced on or after April 22, 2008. In order to confirm whether these requirements are applicable to any of the non-metallic mineral processing equipment at this facility, please provide the date(s) of commencement of construction for the limestone processing, storage, and handling equipment at this facility and the basis for these dates.

Response:

The actual commencement of construction date for the Raw Material Storage is February 12, 2007; Gantt Chart line 197 for Raw Material Building excavation.

The commencement of construction date for the Quarry is not specified, but the Request for Change Order dated October 18, 2007 with attached schedule shows active construction in the Quarry.

See attachment 4 for details.

4. Subpart Y Applicable Requirements - NSPS 40 CFR 60 Subpart Y (Standards of Performance for Coal Preparation and Processing Plants) is applicable to the coal processing and conveying equipment at this facility (EU 007), including coal crushers/grinders, and coal storage, transfer and loading systems. This is not reflected in the application attachment Identification of Applicable Requirements – EU 007 (*see Subpart LLL 40 CFR 63-1356 note below). Different Subpart Y requirements apply to equipment that commenced construction on or before April 28, 2008, equipment that commenced construction after April 28 and on or before May 27, 2009, and equipment that commenced construction after May 27, 2009. In order to confirm whether these requirements are applicable to this facility, please provide the date(s) of commencement of construction for the coal processing, storage and conveying equipment at this facility and the basis for these dates.

(* Note - NESHAP Subpart LLL 40 CFR 63.1356 as amended on September 9, 2010 (effective date of November 8, 2010, which will be prior to the effective date of the initial Title V operation permit for this facility) was completely revised such that the previous subject caption of "Exemption from new source performance standards" has now been changed to read "Sources with multiple emission limits or monitoring requirements". It no longer contains direct references to the applicability or non –applicability of NSPS 40 CFR 60 Subparts F, Y or OOO. Instead of those references, it is now states that where there are other requirements under another regulation in Title 40, the affected facility must comply with the most stringent limit and is exempt from the less stringent requirements.)

Response:

The actual commencement of construction date for the Coal Storage Building is January 9, 2007; Gantt Chart line 819 for Foundations for Coal Storage Building.

The actual commencement of construction date for the Coal Conveyor is February 15, 2007; Gantt Chart line 826 for Coal Conveyor Foundation.

The actual commencement of construction date for the Coal Grinding December 3, 2007; Gantt Chart line 825 for Coal Grinding Foundation.

See attachment 5 for details.

5. <u>Hg Monitor Installation Requirement</u> – Specific Condition No. 21.b of Construction Permit 1190042-001-AC, as amended by Construction Permit 190042-006-AC, requires that a mercury (Hg) CEMS be installed within 240 days following the first year of operation, with the first year of operation defined as 365 calendar days after the first day the kiln produces clinker. Please provide the date of the first kiln clinker production, and the resulting deadline date for installation of the Hg CEMS. Please also provide the status of Hg CEMS procurement and installation, and an anticipated schedule for CEMS certification (required by the above permit condition to be completed 90 days after CEMS installation).

Response:

The first clinker was produced on May 17, 2009.

The deadline for the Hg-CEMS installation is January 12, 2011.

The Hg-CEMS will be delivered beginning the week of December 27, 2010.

Installation will begin the week of January 3, 2011.

The CEMS certification is scheduled to be performed within 90 days of the installation date.

See attachment 6 for details.

6. CAM Applicability for Baghouses DC-1 and DC-2 – In the CAM Applicability Analysis and CAM Plan attachment to the application, under the section labeled Units Not Subject to CAM Requirements, Baghouse ID No. DC-1 and DC-2 are shown in the list of five baghouses to which it was determined that CAM did not apply. While a basis for this determination was supplied for three of the listed baghouses, it was not provided for Baghouses DC- and DC-2. These two baghouses also appear in the list on the following page under Compliance Assurance Monitoring Plan: Fabric Filters for PM Control. Please indicate whether these two baghouse should be removed from the list of baghouses for which CAM does not apply, or provide a basis for why it does not apply.

(Note – As indicated in the section labeled Inherent Process Equipment in the above CAM attachment, in order for a piece of equipment to be considered as inherent to the operation rather than strictly a control device, three questions need to be answered in the affirmative. 1.) Is the primary purpose of the equipment other than to control emissions to comply with the applicable PM emissions limit (e.g., product recovery, worker safety)/ 2.) Would the equipment be installed if there were no applicable emissions limit in place for this emissions unit? 3.) Is the efficiency at which the equipment is designed to be operated above that which would be required to assure compliance with the applicable emissions limit (e.g., a significant margin of compliance)?)

Response:

The spreadsheet in the attachment 7 shows the CAM Plan applicability of the baghouses. CAM applies to DC-1 and DC-2.

7. Justification for Indicator Operating Ranges in CAM Plan for Baghouse PM Control Devices - The proposed Compliance Assurance Monitoring (CAM) Plan for the eighteen (18) baghouses at this facility to which the application indicated that CAM did apply included the same monitoring primary indicator of baghouse pressure drop, with the same indicator operating range of 2-8' w.g. The justification for this generic indicator range is not sufficient. The indicator range needs to be established and justified separately for each baghouse (or manufacturer/model number of baghouse where common equipment was installed). For those baghouses for which PM compliance stack testing was done (e.g., Main Baghouse (EU 003), and Baghouse ID N-93 (EU 005)), the indicator range should be based in part on the observed baghouse pressure drop range during the compliance test(s))(see 40 CFR 64.4(c)). (It can also include data from other emissions testing done on the stack.) For baghouses without stack testing data, as well as those with stack test data, other information may be considered in selecting the indicator operating ranges such as: data from tests performed on similar units at similar facilities; control device manufacturers data, guarantees and recommendations; empirical information concerning the assessment of control technology performance (e.g., empirical performance information from a control technology handbook); and theoretical considerations based on generally accepted engineering practices (i.e., engineering judgment and assessment). (Note – the above was taken from the EPA CAM Technical Guidance Document - 8/98.)

Please submit a baghouse pressure drop indicator operating range for each baghouse (or group of baghouses that are the same manufacturer and model number), along with a justification for each that demonstrates to the Department that operation of the baghouse within this range will provide reasonable assurance of ongoing compliance with the applicable PM/PM10 emission standards (0.01 gr/dscf and 0.007 gr/dscf, except

for EU 003 (different form of limit), and EU 005 Finish Mill Air Separator (0.007 gr/dscf for both PM & PM10)).

Response:

Information received from facility personnel indicating manufacturer's specification of the ideal operating pressure ranges of the baghouses in question are listed in the attachment 8.

For the EU 003 Main Baghouse, the response also needs to address the secondary indicator of change in duct opacity as measured by the continuous emissions monitoring (COMS) system. The proposed indicator range of "any sudden and sustained step-change (increase) in opacity documented by the trend of the 6-minute averages seems too vague and imprecise to be practical for the plant operators, or verifiable/reviewable for the Department. More specific levels/time periods should be established and justified based on analysis of available COMS data during testing periods and normal operation of the plant.

Response:

The COMS data is captured in the DAS from which 6-minute averages are continuously and historically reported. The Visible Emission limit is 10% opacity for a 6-minute averaging period. The CAM Plan will be implemented for the Main Baghouse when there are five (5) consecutive 6-minute averaging periods of Opacity above 5%. See attachment 8 for details.

8. <u>D/F Compliance/Performance Testing</u> - D/F compliance/performance testing using coke and tires as supplemental fuel was conducted beginning on September 15, 2010. In accordance with Rule 62-297.310(8), F.A.C., test reports are required to be submitted no later than 45 days after the completion of testing. Prior to issuance of an Intent to Issue and Draft Title V operation permit, the Department must receive compliance test report showing compliance with the D/F standard, using these supplemental fuels, in both the raw mill on and raw mill off operating modes. The permit application will be considered incomplete until such test report is received. Please submit a schedule for submittal of the required compliance test report.

Response:

The report was submitted on October 25, 2010. Related correspondences are provided in attachment 9.

Requested in a separate email: <u>Revised OM plan</u> – Provide a revised version of the O&M Plan of the facility

Response:

A revised OM plan is provided in the attachment 10.

Requested in a separate email: RICE Inventory and Applicability Determination - Include the facility stationary RICE inventory and applicability determination as part of the RAI response.

Response:

The RICE inventory and applicability determination is provided in the attachment 11.

If you have any questions concerning this matter please call me at (352) 377-5822.

Sincerely,

Zhang, Qi
Project Engineer
Koogler and Associates, Inc.

Attachments:

Attachment 1	RO & PE Certification Statements
Attachment 2	Process Flow Diagram
Attachment 3	Kiln and Cooler Construction Date
Attachment 4	Quarry and Raw Material Storage Construction Date
Attachment 5	Coal Mill and Coal Storage Construction Date
Attachment 6	Hg Monitor Installation Requirement
Attachment 7	CAM Applicability
Attachment 8	Indicator Ranges
Attachment 9	D/F Test Report Submission
Attachment 10	O&M Plan Revision
Attachment 11	RICE Inventory and Applicability Determination

ATTACHMENT 1
RO & PE CERTIFICATION STATEMENTS

APPLICATION INFORMATION

Application Responsible Official Certification

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

1. Application Responsible Official Name: **Cary O. Cohrs – President**

2. Application Responsible Official Qualification (Check one or more of the following options, as applicable):

   ☒ For a corporation, the president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit under Chapter 62-213, F.A.C.

   ☐ For a partnership or sole proprietorship, a general partner or the proprietor, respectively.

   ☐ For a municipality, county, state, federal, or other public agency, either a principal executive officer or ranking elected official.

   ☐ The designated representative at an Acid Rain source, CAIR source, or Hg Budget source.

3. Application Responsible Official Mailing Address...
   Organization/Firm: **American Cement Company, L.L.C.**
   Street Address: **4750 E CR 470, P. O. BOX 445**
   City: **Sumterville** State: **FL** Zip Code: **33585**

4. Application Responsible Official Telephone Numbers...
   Telephone: **(352) 569 - 5393** ext. Fax: **(352) 569 - 5397**

5. Application Responsible Official E-mail Address:
   ccohrs@americancementcompany.com

6. Application Responsible Official Certification:

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

   Signature _____ Date 1/5/11

APPLICATION INFORMATION

Professional Engineer Certification

1. Professional Engineer Name: **Steven C. Cullen, P.E.**
   Registration Number: **45188**
2. Professional Engineer Mailing Address...
   Organization/Firm: **Koogler and Associates, Inc.**
   Street Address: **4014 NW 13th Street**
   City: **Gainesville** State: **Florida** Zip Code: **32609**
3. Professional Engineer Telephone Numbers...
   Telephone: **(352) 377-5822** ext. Fax: **(352) 377-7158**
4. Professional Engineer E-mail Address: **SCullen@kooglerassociates.com**
5. Professional Engineer Statement:

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

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

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

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

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

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

STEVEN C. CULLEN LICENSE NO. 45188 STATE OF FLORIDA PROFESSIONAL ENGINEER

Signature

1/3/2011
Date

(seal)

* Attach any exception to certification statement.

ATTACHMENT 2
PROCESS FLOW DIAGRAM

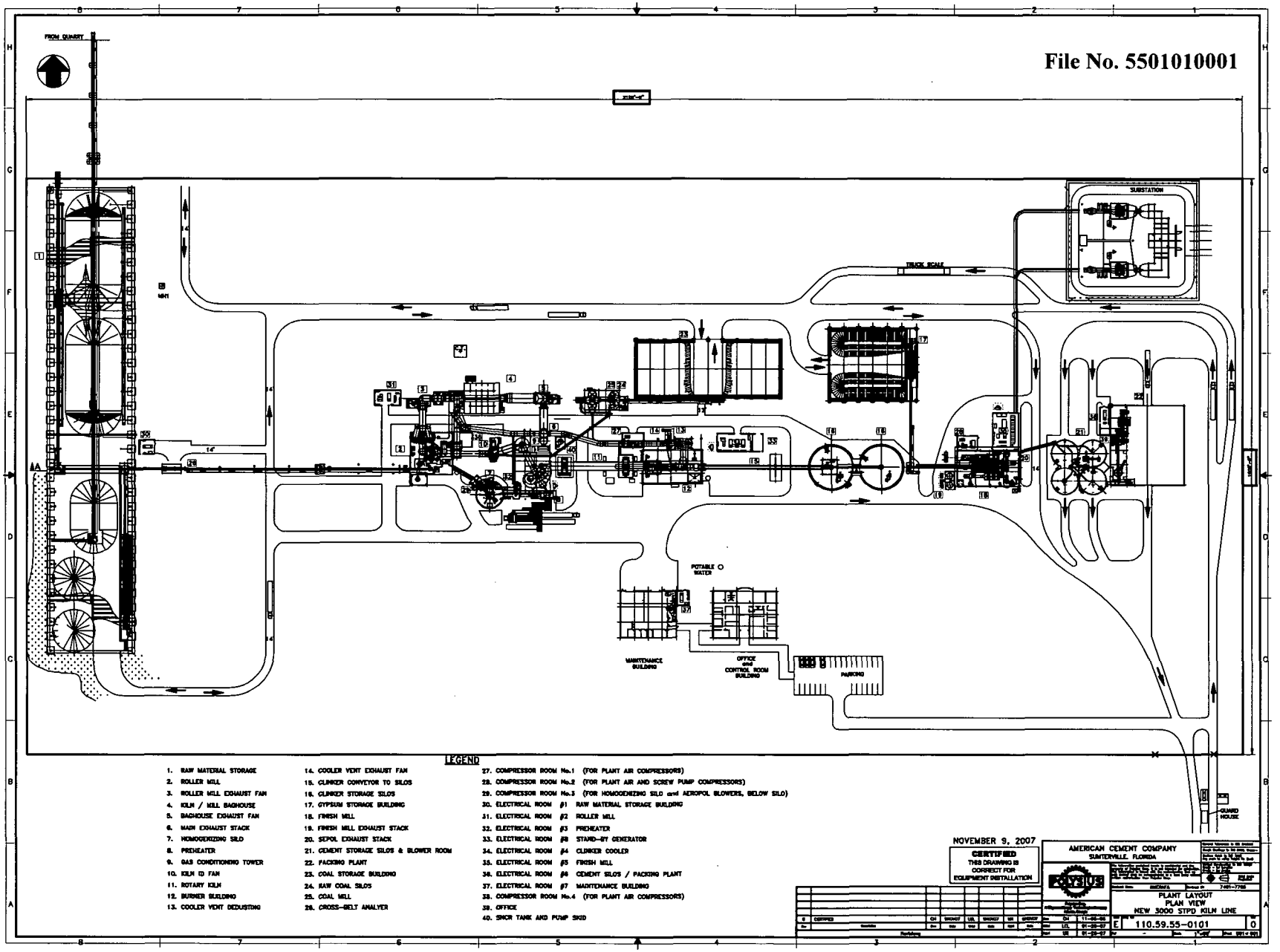
Process Flow Diagrams

1. Facility Process Flow Diagram Attachment - The Facility Process Flow Diagram attached to the application shows the facility as having separate wet process and dry process equipment ahead of the rotary kiln. It also shows an Optional Preheater/Precalciner or an Optional Preheater as part of the Dry Process. Based on information obtained during a site visit, the facility is using only a dry process (i.e., there is no wet process equipment) and is equipped with a preheater/precalciner as part of the dry process. Please resubmit the Facility Process Flow Diagram correcting/clarifying the items noted above, and making any other corrections/clarifications needed to accurately represent the facility process flow as it was actually built and is being operated.

- The Facility Process Flow Diagram has been revised to show actual processes.

DRAWING LEGEND					
Elec. File No.	**Drawing No.**	**Process**	**EU**	**Baghouse**	**Item**
5501010001	110.59.55-0101	Plot Plan			
5500022001	110.59.55-0002	Quarry / RMS	001		
5500032001	110.59.55-0003	Raw Grinding System	002		
5500052001	110.59.55-0005	Raw Meal Transport	002	F-10	A
			002	G-07	B
5500062001	110.59.55-0006	Raw Meal Blending	002	G-07	B
			002	G-10	C
5500071001	110.59.55-0007	Kiln Feed	002	H-08	E
5500042001	110.59.55-0004	Main Baghouse & Dust Transport	002	E-38	D
			003	E-19	F
5500082001	110.59.55-0008	Preheater & Calciner	003		
5500092001	110.59.55-0009	Kiln & Tertiary Air Duct	003		
5500102001	110.59.55-0010	Clinker Cooler	004	L-03	G
5500112001	110.59.55-0011	Clinker & Additive Storage	004	L-03	G
			004	L-06	H
			004	M-08	I
5500122001	110.59.55-0012	Clinker & Additive Transport	004	DC-1	J
			004	DC-2	K
5500142001	110.59.55-0014	Cement Grinding System	005	N-94	M
			006	N-91	N
5500152001	110.59.55-0015	Cement Grinding Sepol Vent	005	N-93	L
5500182001	110.59.55-0018	Cement Storage & Truck Loading	006	Q-25	O
			006	Q-26	P
			006	Q-14	Q
			006	Q-17	R
550019F001	110.59.55-0019	Packing Plant	006	R-12A	S
5500200001	110.59.55-0020	Coal Grinding Vertical Mill	007		
5500210001	110.59.55-0021	Coal Grinding System	007	S-22	T
				S-26	U

File No. 5501010001



LEGEND

1. RAW MATERIAL STORAGE
2. ROLLER MILL
3. ROLLER MILL EXHAUST FAN
4. KILN / MILL BAGHOUSE
5. BAGHOUSE EXHAUST FAN
6. MAIN EXHAUST STACK
7. HOMOGENIZING SILO
8. PREHEATER
9. GAS CONDITIONING TOWER
10. KILN ID FAN
11. ROTARY KILN
12. BURNER BUILDING
13. COOLER VENT DEDUSTING
14. COOLER VENT EXHAUST FAN
15. CLINKER CONVEYOR TO SILOS
16. CLINKER STORAGE SILOS
17. GYPSUM STORAGE BUILDING
18. FINISH MILL
19. FINISH MILL EXHAUST STACK
20. SEPOL EXHAUST STACK
21. CEMENT STORAGE SILOS & BLOWER ROOM
22. PACKING PLANT
23. COAL STORAGE BUILDING
24. RAW COAL SILOS
25. COAL MILL
26. CROSS-BELT ANALYZER
27. COMPRESSOR ROOM No.1 (FOR PLANT AIR COMPRESSORS)
28. COMPRESSOR ROOM No.2 (FOR PLANT AIR AND SCREW PUMP COMPRESSORS)
29. COMPRESSOR ROOM No.3 (FOR HOMOGENIZING SILO and AEROPOL BLOWERS, BELOW SILO)
30. ELECTRICAL ROOM #1 RAW MATERIAL STORAGE BUILDING
31. ELECTRICAL ROOM #2 ROLLER MILL
32. ELECTRICAL ROOM #3 PREHEATER
33. ELECTRICAL ROOM #8 STAND-BY GENERATOR
34. ELECTRICAL ROOM #4 CLINKER COOLER
35. ELECTRICAL ROOM #5 FINISH MILL
36. ELECTRICAL ROOM #6 CEMENT SILOS / PACKING PLANT
37. ELECTRICAL ROOM #7 MAINTENANCE BUILDING
38. COMPRESSOR ROOM No.4 (FOR PLANT AIR COMPRESSORS)
39. OFFICE
40. SNCR TANK AND PUMP SKID

NOVEMBER 9, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

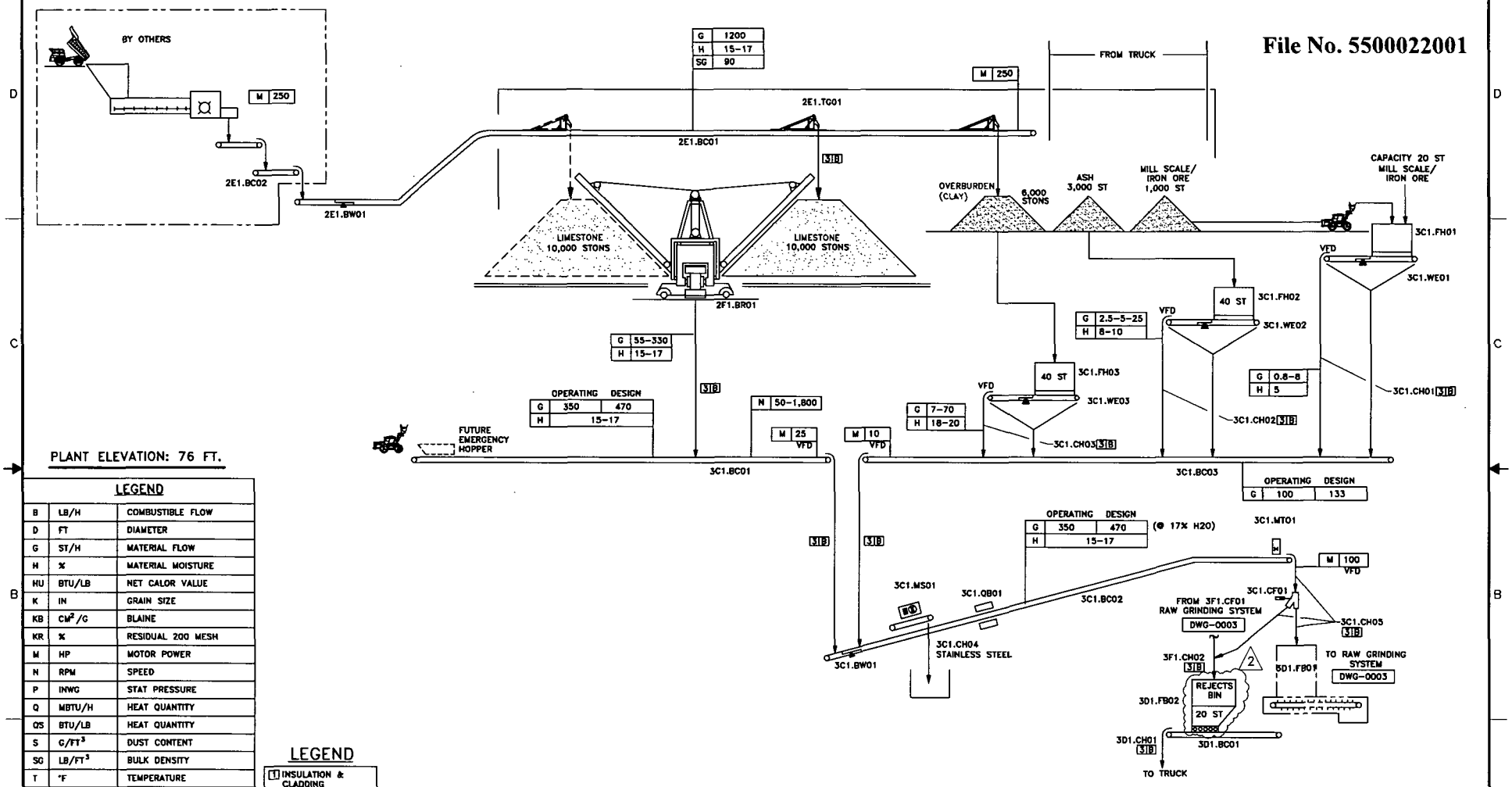
AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

PLANT LAYOUT
PLAN VIEW
NEW 3000 STPD KILN LINE

E 110.59.55-0101 0

File No. 5500022001



PLANT ELEVATION: 76 FT.

LEGEND

B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1. INSULATION & CLADDING
2. REFRACTORY/BRICKS
3. A.R. STEEL LINERS
4. DENSIT LINING
5. CERAMIC TILES
6. CASTABLES

	SUPPLY	INSTALL
A	C	C
B	P	P
C	P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Drn	Date	Chkd	Date	Appd	Date
2	CERTIFIED	PFC	11/14/07	LEL	11/14/07	UR	11/14/07
1	CERTIFIED	PFC	7/13/07	LEL	7/13/07	UR	7/13/07
0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

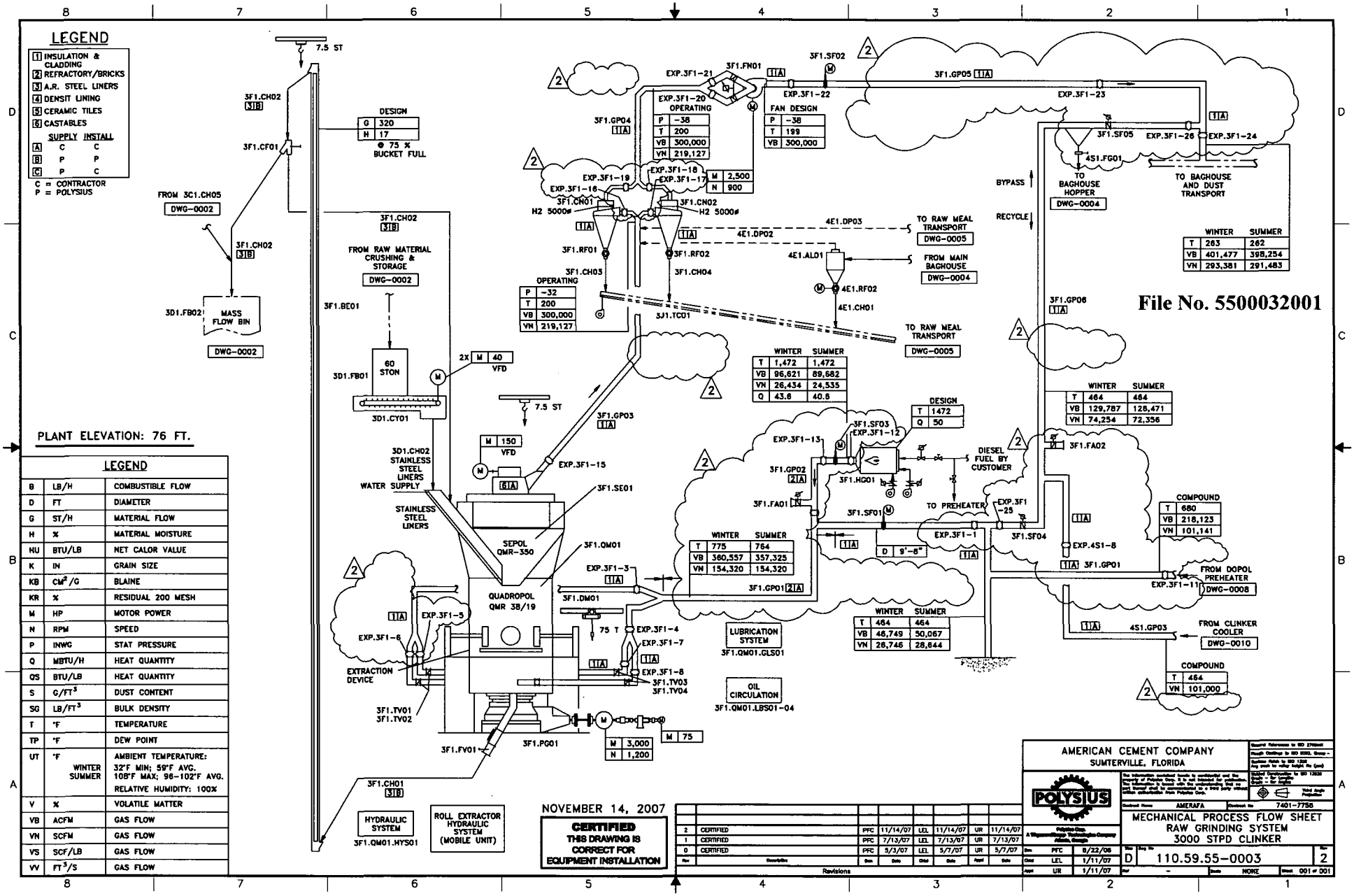
POLYSIUS
A Thyssenkrupp Technologies Company
Atlanta, Georgia

Drawn PFC 8/22/06
Chkd LEL 1/11/07
Appd UR 1/11/07

Contract Name AMERAFA Contract No. 7401-7758

MECHANICAL PROCESS FLOW SHEET
RAW MATERIAL CRUSHING & STORAGE
3000 STPD CLINKER

Size D | Dwg No. 110.59.55-0002 | Rev 2
Scale NONE | Sheet 001 of 001


LEGEND
1 INSULATION & CLADDING
2 REFRACTORY/BRICKS
3 A.R. STEEL LINERS
4 DENSIT LINING
5 CERAMIC TILES
6 CASTABLES
SUPPLY INSTALL
A C C
B P P
C P C
C = CONTRACTOR
P = POLYSIUS
PLANT ELEVATION: 76 FT.
LEGEND
B LB/H COMBUSTIBLE FLOW
D FT DIAMETER
G ST/H MATERIAL FLOW
H % MATERIAL MOISTURE
HU BTU/LB NET CALOR VALUE
K IN GRAIN SIZE
KB CM²/G BLAINE
KR % RESIDUAL 200 MESH
M HP MOTOR POWER
N RPM SPEED
P INWG STAT PRESSURE
Q MBTU/H HEAT QUANTITY
QS BTU/LB HEAT QUANTITY
S G/FT³ DUST CONTENT
SG LB/FT³ BULK DENSITY
T °F TEMPERATURE
TP °F DEW POINT
UT °F WINTER SUMMER AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V % VOLATILE MATTER
VB ACFM GAS FLOW
VN SCFM GAS FLOW
VS SCF/LB GAS FLOW
VV FT³/S GAS FLOW
7.5 ST
3F1.CH02 3B
3F1.CF01
DESIGN G 320 H 17 @ 75 % BUCKET FULL
FROM 3C1.CH05 DWG-0002
3F1.CH02 3B
3D1.FB02 MASS FLOW BIN
DWG-0002
FROM RAW MATERIAL CRUSHING & STORAGE DWG-0002
3F1.CH02 3B
3F1.BE01
3D1.FB01 60 STON
3D1.CY01
2X M 40 VFD
3D1.CH02 STAINLESS STEEL LINERS WATER SUPPLY
STAINLESS STEEL LINERS
7.5 ST
M 150 VFD
6A
3F1.GP03 1A
EXP.3F1-15
3F1.SE01
SEPOL QMR-350
QUADROPOL QMR 38/19
3F1.QM01
EXP.3F1-3 1A
3F1.DM01
75 T
EXP.3F1-4
EXP.3F1-7
EXP.3F1-8
3F1.TV03
3F1.TV04
EXP.3F1-5
EXP.3F1-6
EXTRACTION DEVICE
3F1.TV01
3F1.TV02
3F1.FV01
3F1.PG01
M 3,000 N 1,200
M 75
3F1.CH01 3B
HYDRAULIC SYSTEM 3F1.QM01.HYS01
ROLL EXTRACTOR HYDRAULIC SYSTEM (MOBILE UNIT)
EXP.3F1-21
3F1.FN01 1A
3F1.SF02
EXP.3F1-22
EXP.3F1-20 OPERATING P -38 T 200 VB 300,000 VN 219,127
FAN DESIGN P -38 T 199 VB 300,000
3F1.GP05 1A
EXP.3F1-23
3F1.GP04 1A
EXP.3F1-19
EXP.3F1-18
EXP.3F1-17
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EXP.3F1-16
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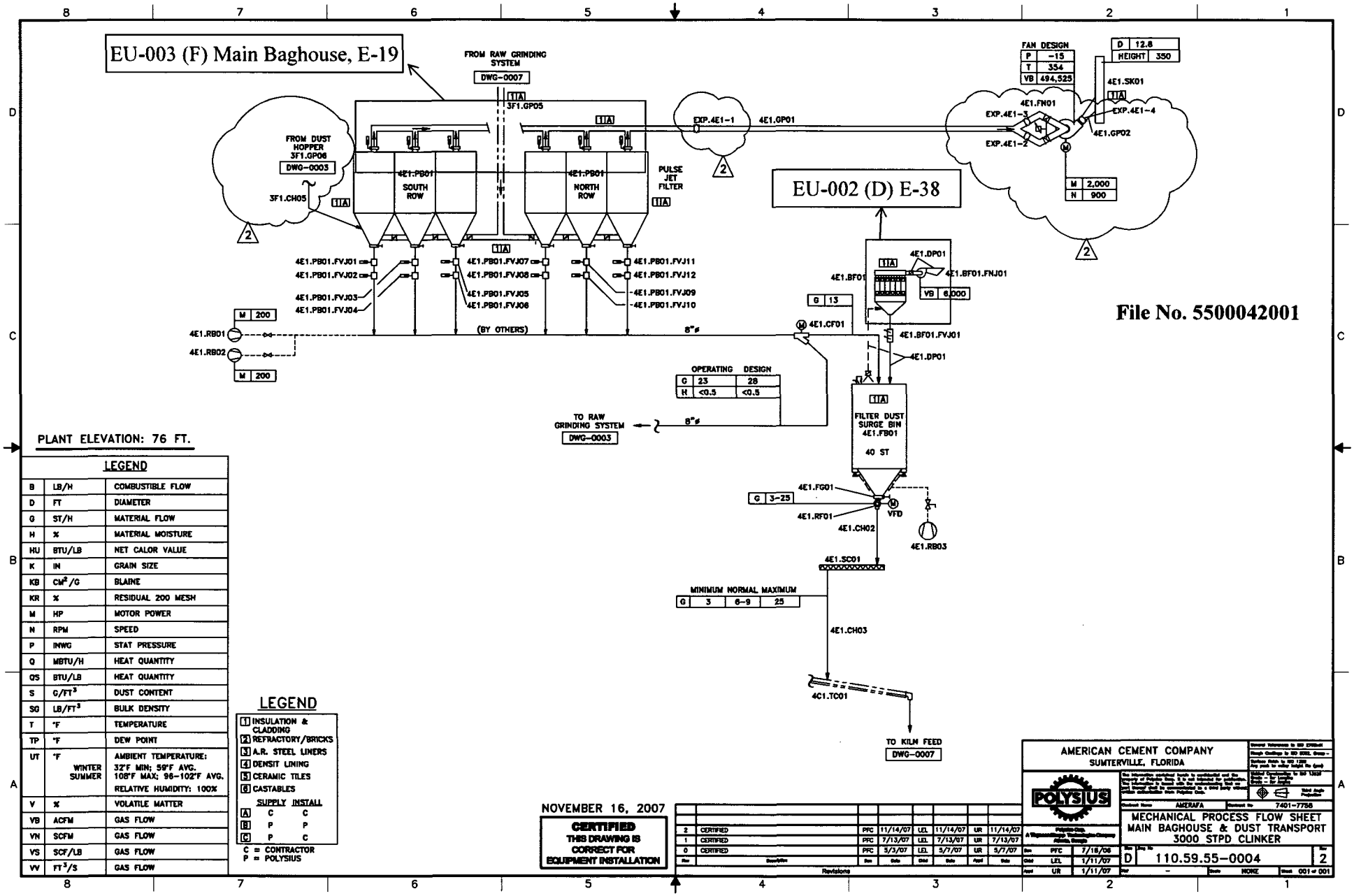
4E1.DP03
4E1.DP02
TO RAW MEAL TRANSPORT DWG-0005
3F1.RF01
3F1.RF02
4E1.ALD1
FROM MAIN BAGHOUSE DWG-0004
3F1.CH05 OPERATING P -32 T 200 VB 300,000 VN 219,127
3F1.CH04
4E1.RF02
4E1.CH01
3J1.TC01
TO RAW MEAL TRANSPORT DWG-0005
WINTER SUMMER T 1,472 1,472 VB 96,621 89,682 VN 26,434 24,535 Q 43.6 40.6
DESIGN T 1472 Q 50
EXP.3F1-13
3F1.SF03
EXP.3F1-12
3F1.GP02 2A
3F1.HG01
DIESEL FUEL BY CUSTOMER
3F1.FA01
TO PREHEATER
3F1.SF01
WINTER SUMMER T 775 764 VB 360,557 357,325 VN 154,320 154,320
3F1.GP01 2A
D 9'-6"
EXP.3F1-1
EXP.3F1-25
3F1.SF04
EXP.4S1-8
1A 3F1.GP01
FROM DOPOL PREHEATER EXP.3F1-11 DWG-0008
WINTER SUMMER T 464 464 VB 46,749 50,067 VN 26,746 28,644
LUBRICATION SYSTEM 3F1.QM01.GLS01
OIL CIRCULATION 3F1.QM01.LBS01-04
4S1.GP03
FROM CLINKER COOLER DWG-0010
COMPOUND T 464 VN 101,000
BYPASS
RECYCLE
4S1.FG01
TO BAGHOUSE HOPPER DWG-0004
TO BAGHOUSE AND DUST TRANSPORT
WINTER SUMMER T 263 262 VB 401,477 398,254 VN 293,381 291,483
3F1.FA02
WINTER SUMMER T 464 464 VB 129,787 128,471 VN 74,254 72,356
COMPOUND T 680 VB 218,123 VN 101,141
3F1.GP06 1A
File No. 5500032001
NOVEMBER 14, 2007
CERTIFIED THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION
2 CERTIFIED PFC 11/14/07 LEL 11/14/07 UR 11/14/07
1 CERTIFIED PFC 7/13/07 LEL 7/13/07 UR 7/13/07
0 CERTIFIED PFC 5/3/07 LEL 5/7/07 UR 5/7/07
Revisions
AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA
POLYSIUS
AMERAFA 7401-7755
MECHANICAL PROCESS FLOW SHEET
RAW GRINDING SYSTEM
3000 STPD CLINKER
PFC 8/22/06
LEL 1/11/07
UR 1/11/07
D 110.59.55-0003 2
NONE 001 of 001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

SUPPLY	INSTALL
A C	C
B P	P
C P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Drn	Date	Chkd	Date	Appd	Date
2	CERTIFIED	PFC	11/14/07	LEL	11/14/07	UR	11/14/07
1	CERTIFIED	PFC	7/13/07	LEL	7/13/07	UR	7/13/07
0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

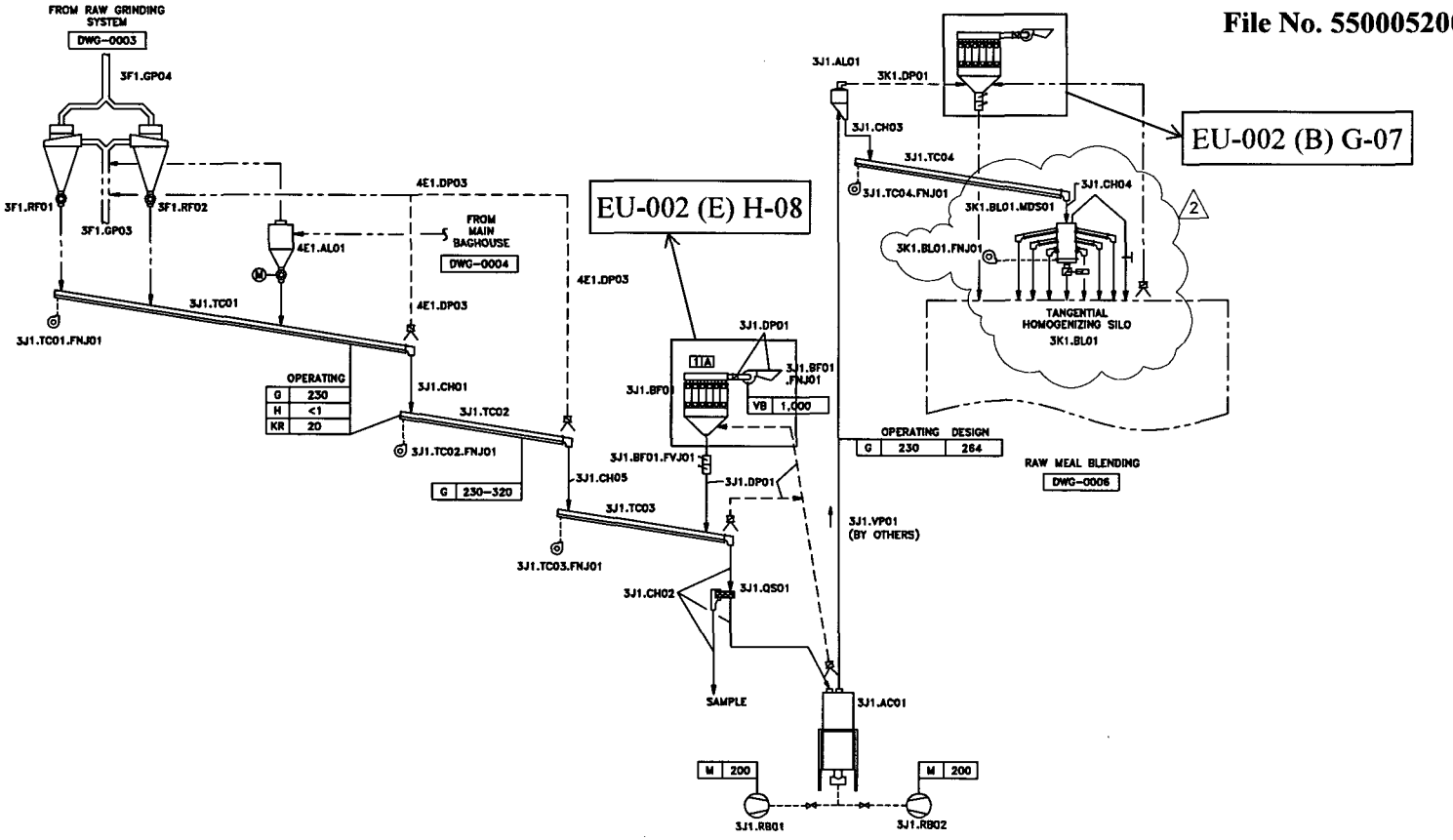
Drn PFC 7/18/06
Chkd LEL 1/11/07
Appd UR 1/11/07

Project Name AMERAFA
Document No. 7401-7758

MECHANICAL PROCESS FLOW SHEET
MAIN BAGHOUSE & DUST TRANSPORT
3000 STPD CLINKER

Size D
Dwg. No. 110.59.55-0004
Rev 2
Scale NONE
Sheet 001 of 001

File No. 5500052001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

SUPPLY	INSTALL
A C	C
B P	P
C P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Dsn	Date	Chkd	Date	Appd	Date
2	CERTIFIED	PFC	11/14/07	LEL	11/14/07	UR	11/14/07
1	CERTIFIED	PFC	7/13/07	LEL	7/13/07	UR	7/13/07
0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

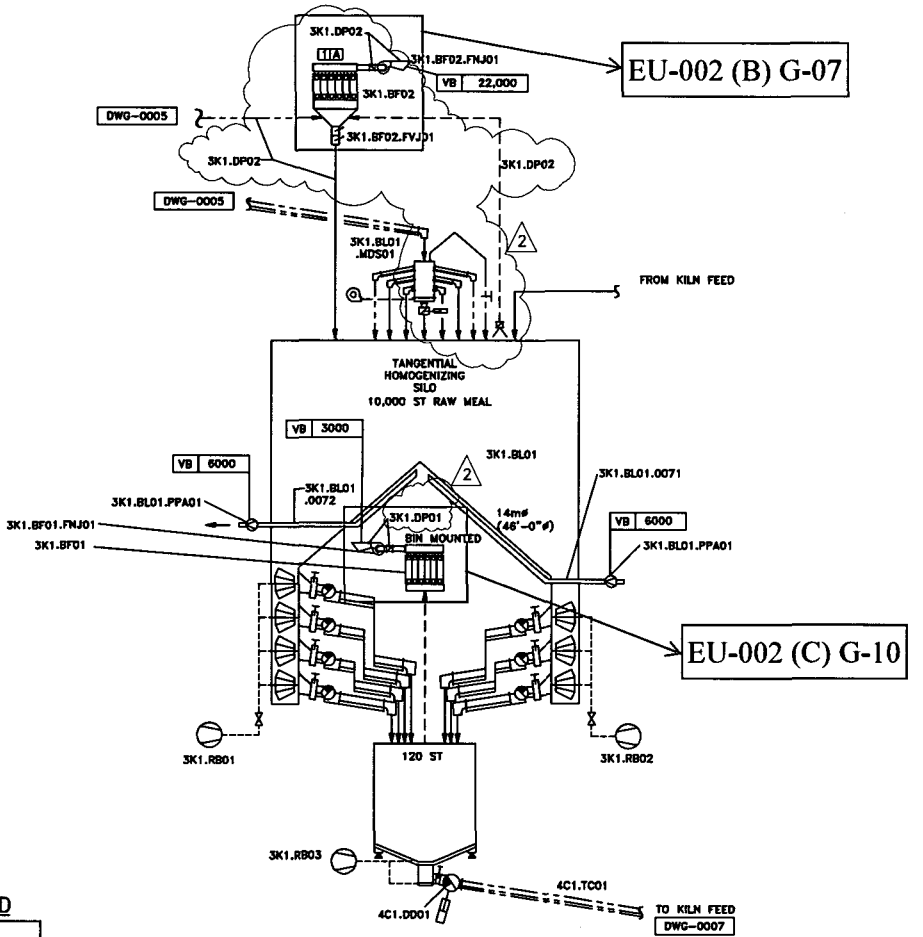
Drawing Name: AMERAFA | Document No: 7401-7758

MECHANICAL PROCESS FLOW SHEET
RAW MEAL TRANSPORT
3000 STPD CLINKER

Dsn	PFC	8/22/06
Chkd	LEL	1/11/07
Appd	UR	1/11/07

Size: D | Dwg No: 110.59.55-0005 | Rev: 2
Ref: - | Scale: NONE | Sheet: 001 of 001

File No. 5500062001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

SUPPLY	INSTALL
A C	C
B P	P
C P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Date	Drawn	Date	Chkd	Date	Appd	Date
2	CERTIFIED		PFC	11/14/07	LEL	11/14/07	UR	11/14/07
1	CERTIFIED		PFC	7/13/07	LEL	7/13/07	UR	7/13/07
0	CERTIFIED		PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

Drawn	PFC	5/22/08
Chkd	LEL	1/11/07
Appd	UR	1/11/07

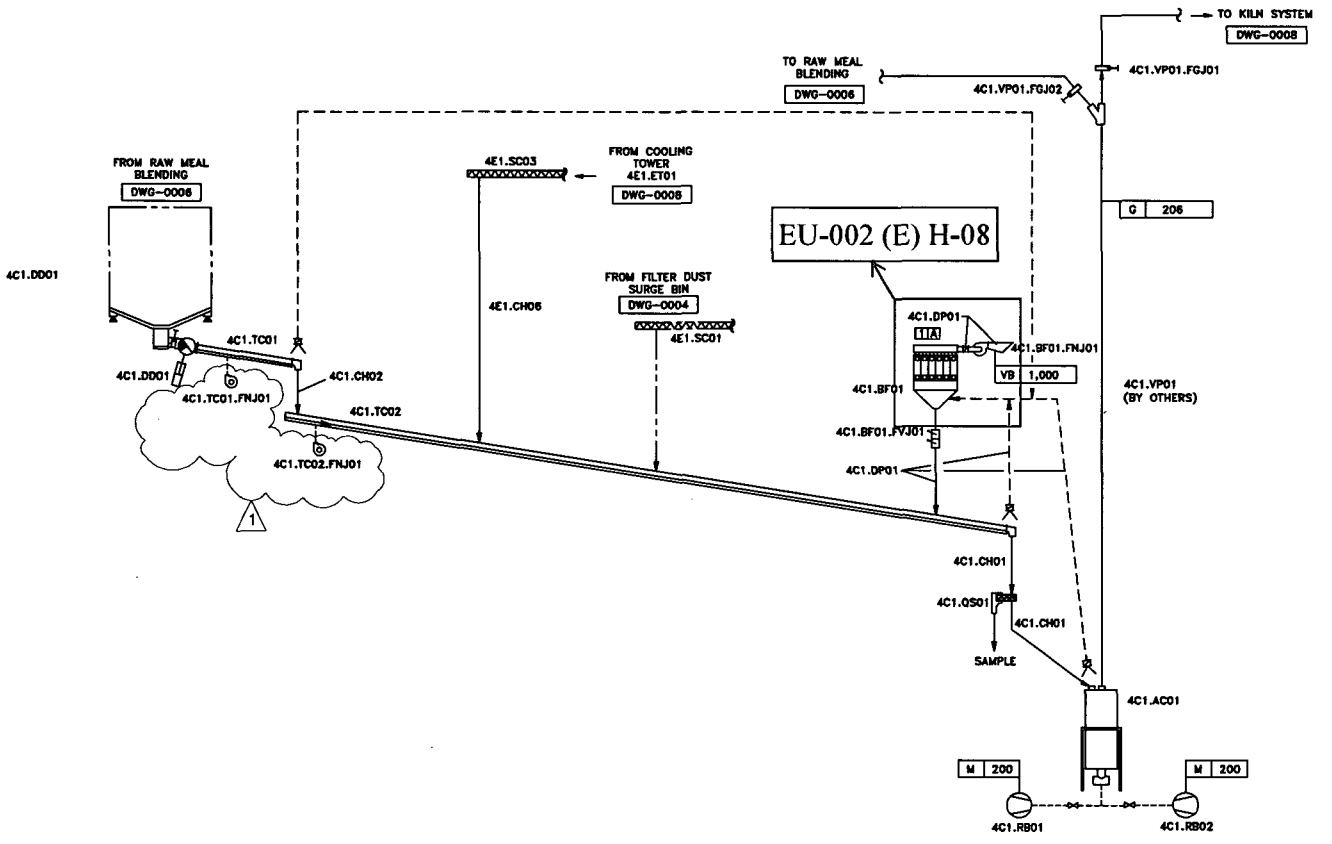
Customer Name: AMERAFA — Customer No: 7401-7756

MECHANICAL PROCESS FLOW SHEET
RAW MEAL BLENDING
3000 STPD CLINKER

Size: D — Dwg No: 110.59.55-0006 — Rev: 2
Ref: – — Scale: NONE — Sheet: 001 of 001

Dept. Of Environmental Protection
Southwest District
JAN 06 2011

File No. 5500071001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

	SUPPLY	INSTALL
1 INSULATION & CLADDING		
2 REFRACTORY/BRICKS		
3 A.R. STEEL LINERS		
4 DENSIT LINING		
5 CERAMIC TILES		
6 CASTABLES		
A	C	C
B	P	P
C	P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Date	Chkd	Date	Appd	Date
1	CERTIFIED	PFC 11/14/07	LEL 11/14/07	UR 11/14/07		
0	CERTIFIED	PFC 5/3/07	LEL 5/7/07	UR 5/7/07		

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

Drawn PFC 6/22/06
Chkd LEL 1/11/07
Appd UR 1/11/07

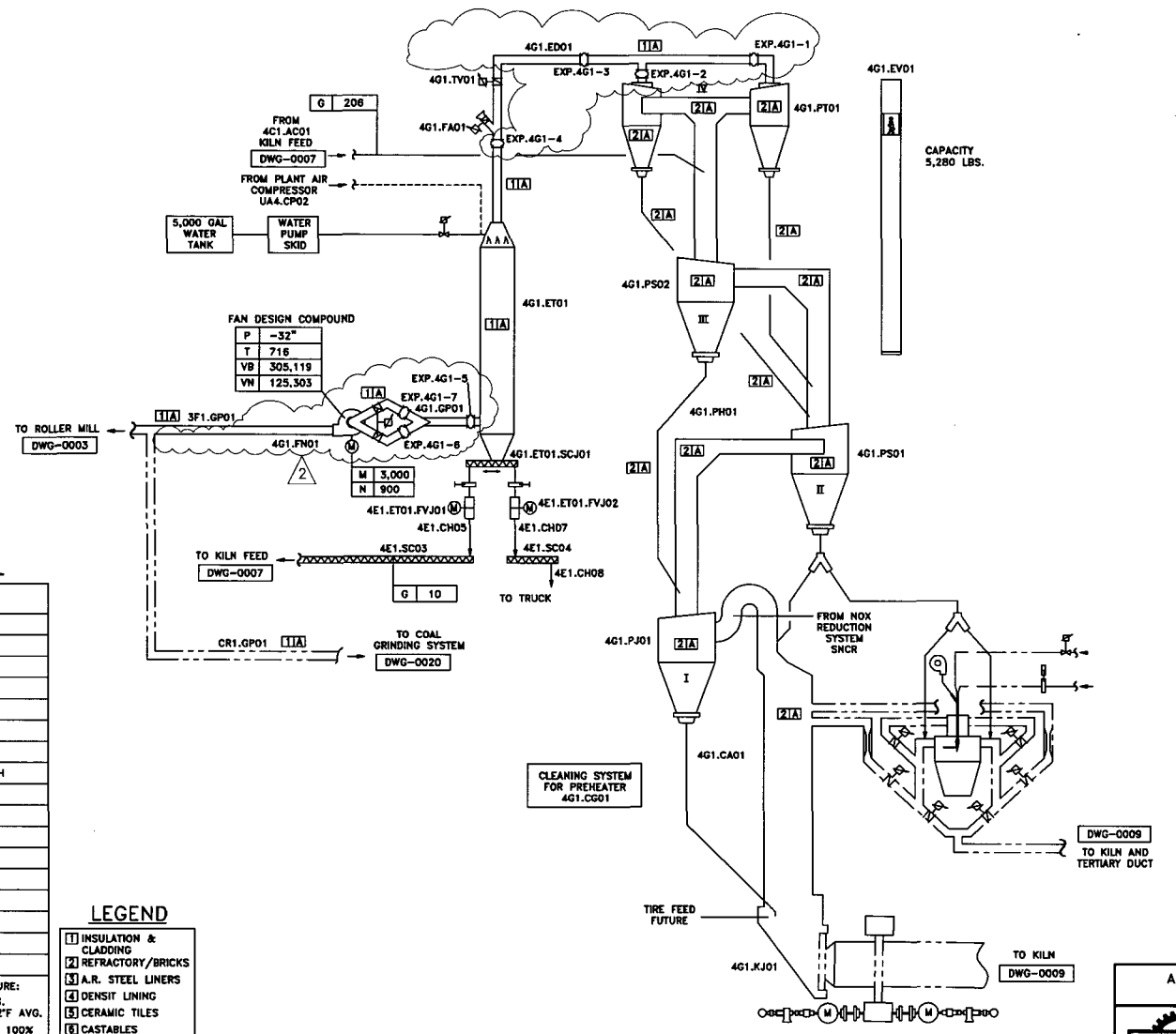
Customer Name AMERAFA Contract No. 7401-7758

MECHANICAL PROCESS FLOW SHEET
KILN FEED
3000 STPD CLINKER

Dwg No. 110.59.55-0007 Rev D 1

Ref - Scale NONE Sheet 001 of 001

File No. 5500082001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING	
2	REFRACTORY/BRICKS	
3	A.R. STEEL LINERS	
4	DENSIT LINING	
5	CERAMIC TILES	
6	CASTABLES	
	SUPPLY	INSTALL
A	C	C
B	P	P
C	P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Des	Date	Chkd	Date	Appd	Date
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1	CERTIFIED	PFC	7/13/07	LEL	7/13/07	UR	7/13/07
0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS
A Thyssenkrupp Technologies Company
Atlanta, Georgia

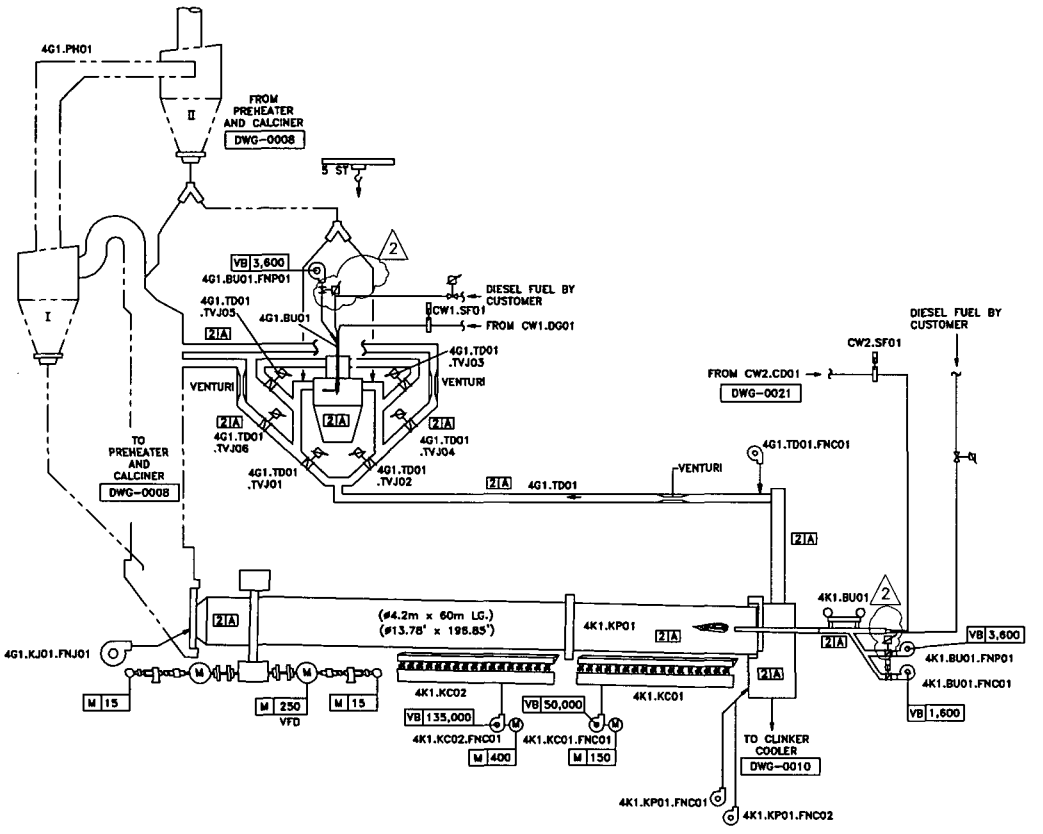
Des	PFC	8/22/06
Chkd	LEL	1/11/07
Appd	UR	1/11/07

Contract Name AMERAFA Contract No. 7401-7758

MECHANICAL PROCESS FLOW SHEET
PREHEATER AND CALCINER
3000 STPD CLINKER

Size D | Dwg No. 110.59.55-0008 | Rev 2
Rev – | Scale NONE | Sheet 001 of 001

File No. 5500092001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

SUPPLY	INSTALL
A C	C
B P	P
C P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Drn	Date	Chkd	Date	Appd	Date
2	CERTIFIED	PFC	11/14/07	LEL	11/14/07	UR	11/14/07
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0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS
A Thyssenkrupp Technologies Company
Pittsburg, California
Atlanta, Georgia

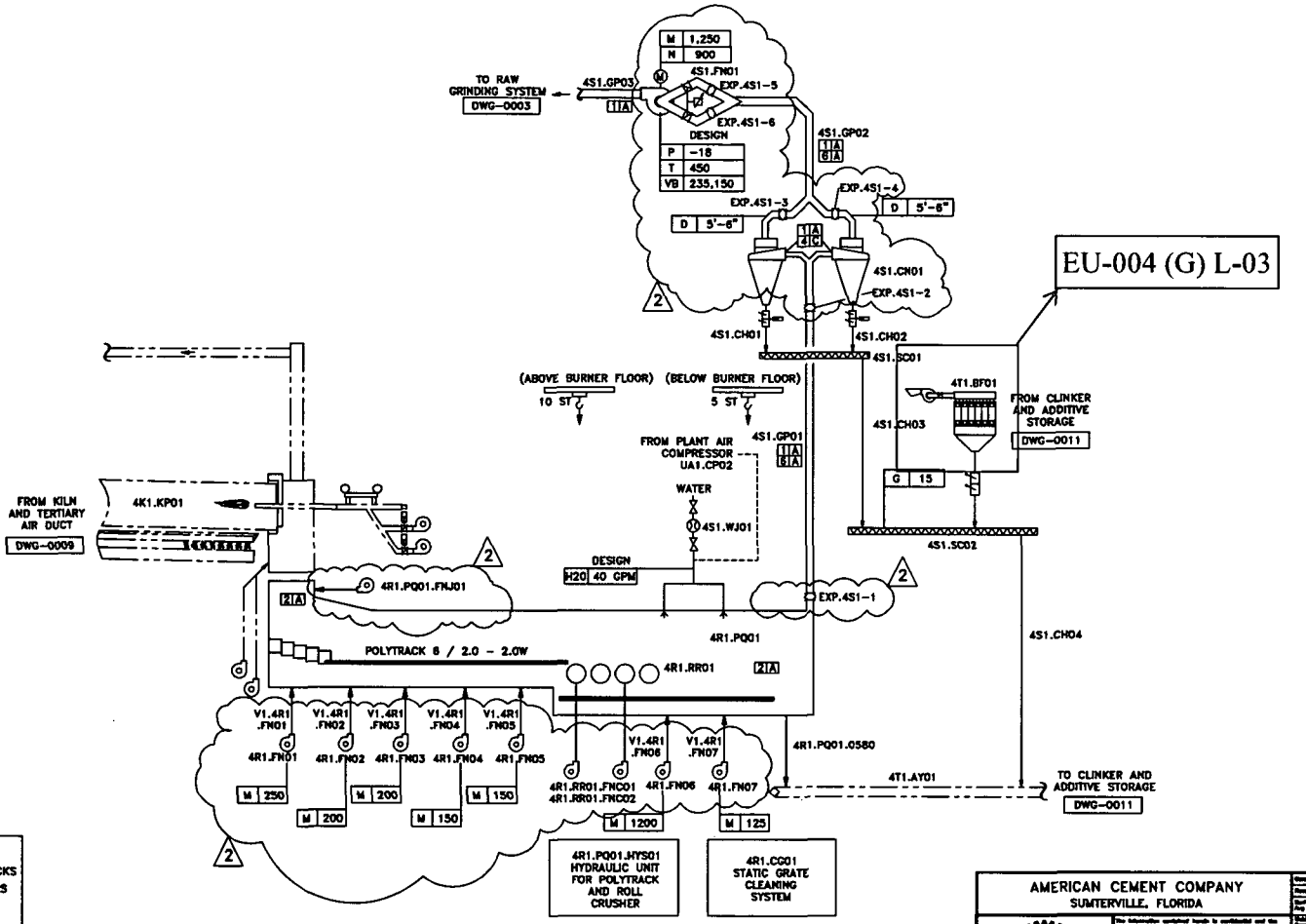
Drn	PFC	8/22/06	
Chkd	LEL	1/11/07	
Appd	UR	1/11/07	

Contract Name: AMERAFA
Contract No: 7401-7758

MECHANICAL PROCESS FLOW SHEET
KILN AND TERTIARY AIR DUCT
3000 STPD CLINKER

Size: D
Dwg No: 110.59.55-0009
Rev: 2
Scale: NONE
Sheet: 001 of 001

File No. 5500102001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96–102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING	
2	REFRACTORY/BRICKS	
3	A.R. STEEL LINERS	
4	DENSIT LINING	
5	CERAMIC TILES	
6	CASTABLES	
	SUPPLY	INSTALL
A	C	C
B	P	P
C	P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Drn	Date	Chkd	Date	Appd	Date
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0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

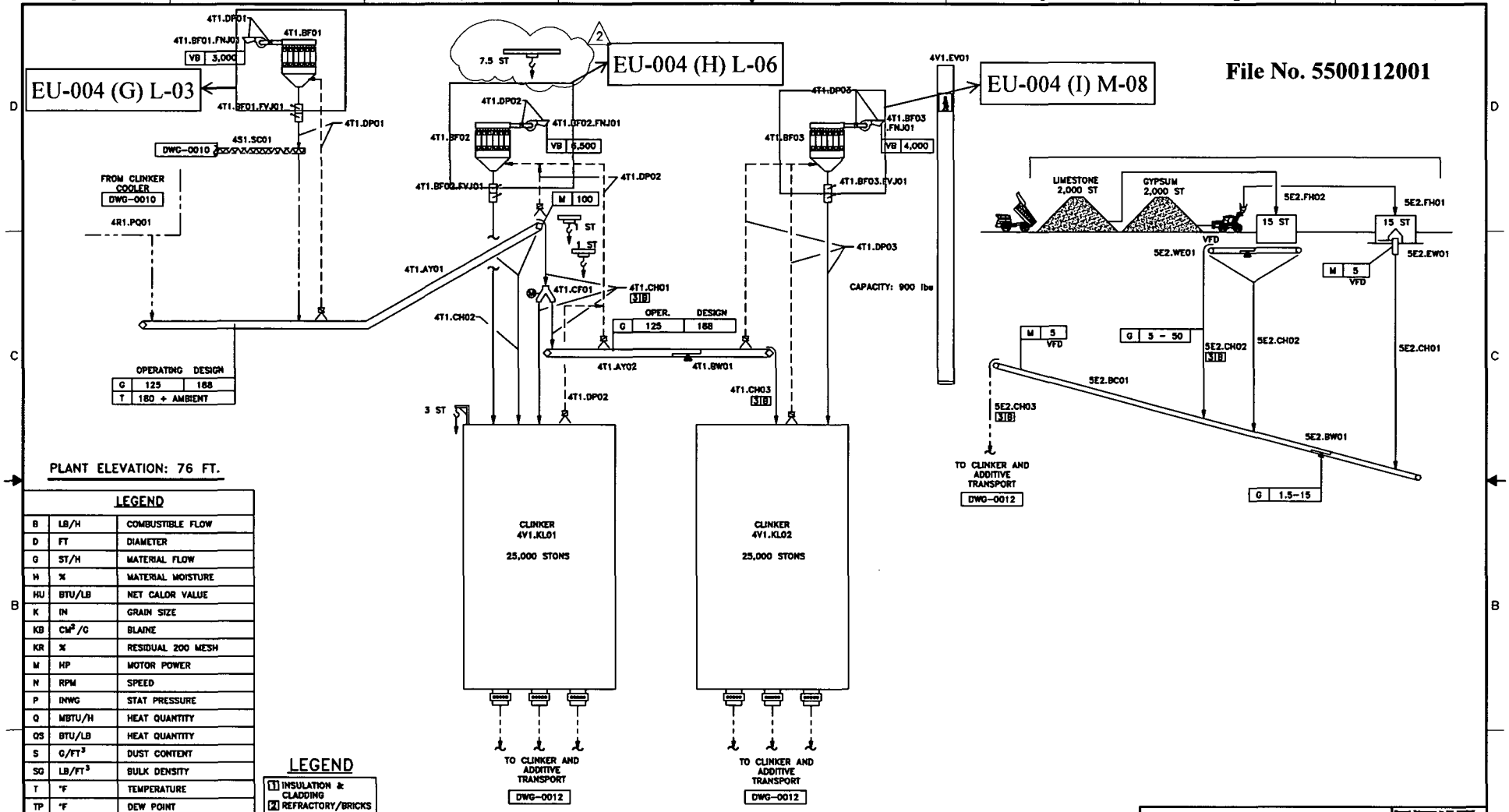
POLYSIUS

Drn PFC 6/23/06
Chkd LEL 1/11/07
Appd UR 1/11/07

Product Name AMERAFA Product No 7401-7758

MECHANICAL PROCESS FLOW SHEET
CLINKER COOLER
3000 STPD CLINKER

Dwg No 110.59.55-0010 Rev 2
Size D Scale NONE Sheet 001 of 001



PLANT ELEVATION: 76 FT.

LEGEND

B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F	AMBIENT TEMPERATURE: WINTER 32°F MIN; 59°F AVG. SUMMER 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1. INSULATION & CLADDING
2. REFRACTORY/BRICKS
3. A.R. STEEL LINERS
4. DENSIT LINING
5. CERAMIC TILES
6. CASTABLES

	SUPPLY	INSTALL
A	C	C
B	P	P
C	P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Dsn	Date	Chkd	Date	Appd	Date
2	CERTIFIED	PFC	11/14/07	LEL	11/14/07	UER	11/14/07
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0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UER	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

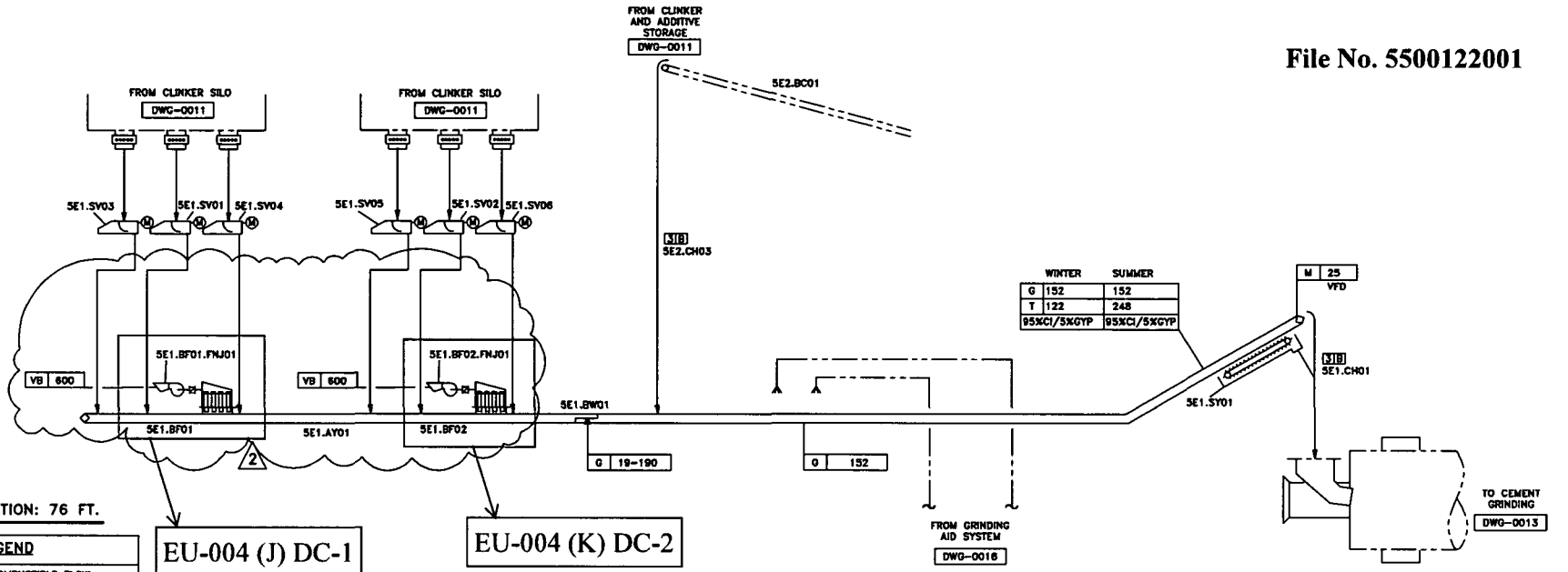
Dsn PFC 6/22/06
Chkd LEL 1/11/07
Appd UER 1/11/07

Customer Name AMERAFA — Customer No. 7401-7756

MECHANICAL PROCESS FLOW SHEET
CLINKER AND ADDITIVE STORAGE
3000 STPD CLINKER

Size D — Dwg No. 110.59.55-0011 — Rev 2
Rev – — Sheet NONE — Sheet 001 of 001

File No. 5500122001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

SUPPLY	INSTALL
A C	C
B P	P
C P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Date	Orig	Date	Appd	Date
2	CERTIFIED	PFC 11/14/07	LEL	11/14/07	UR	11/14/07
1	CERTIFIED	PFC 7/13/07	LEL	7/13/07	UR	7/13/07
0	CERTIFIED	PFC 5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

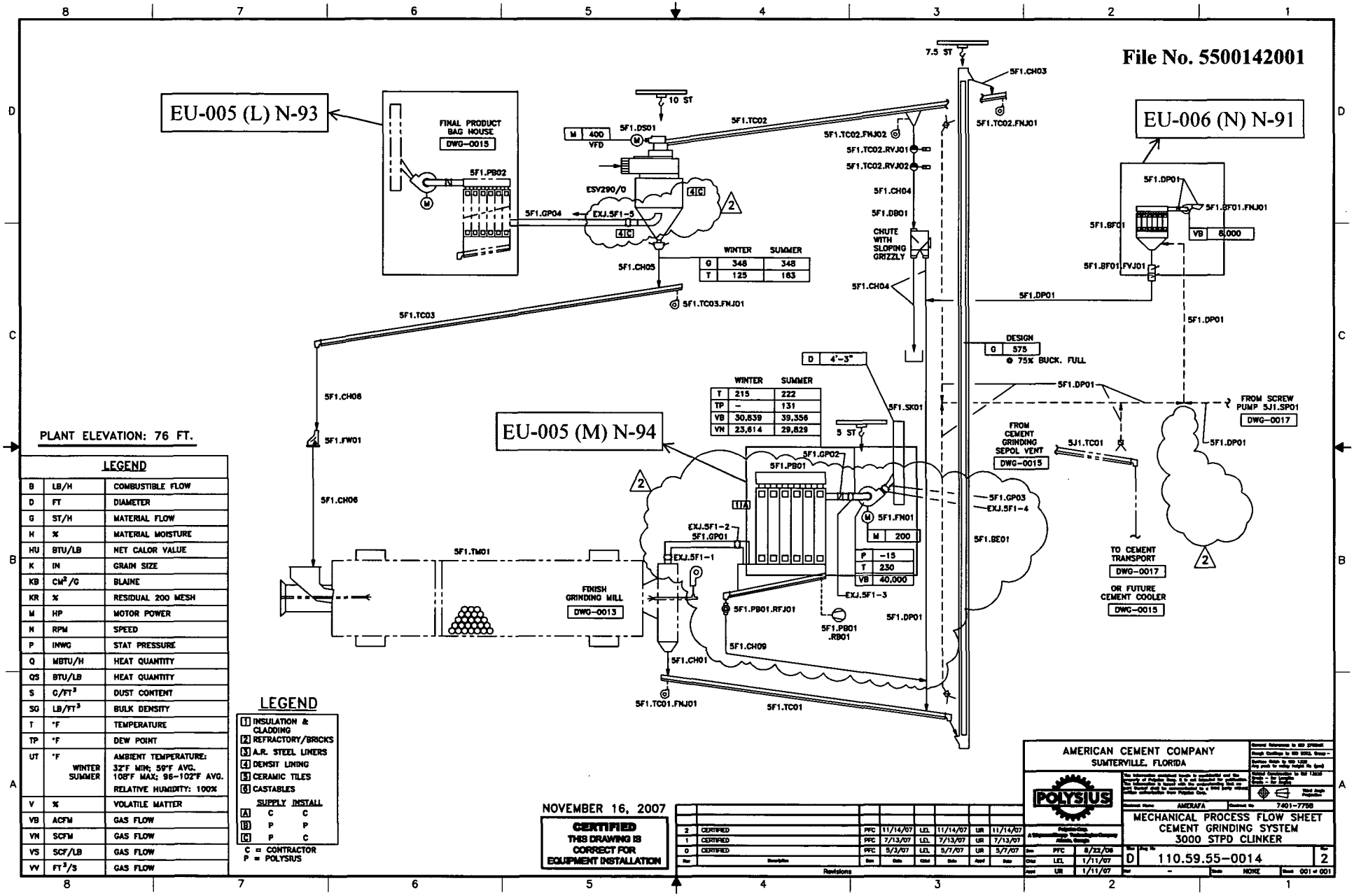
POLYSIUS

Drawn PFC 8/22/08
Orig LEL 1/11/07
Appd UR 1/11/07

Customer Name AMERAFA
Customer No 7401-7756

MECHANICAL PROCESS FLOW SHEET
CLINKER AND ADDITIVE TRANSPORT
3000 STPD CLINKER

Dwg No 110.59.55-0012
Rev 2
Size D
Scale NONE
Sheet 001 of 001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
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V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

SUPPLY	INSTALL
A C	C
B P	P
C P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Rev	Date	Chkd	Date	Appd	Date
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0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

Polysius Corporation
A Thyssenkrupp Technologies Company
Atlanta, Georgia

Customer Name: AMERAFA
Contract No: 7401-7758

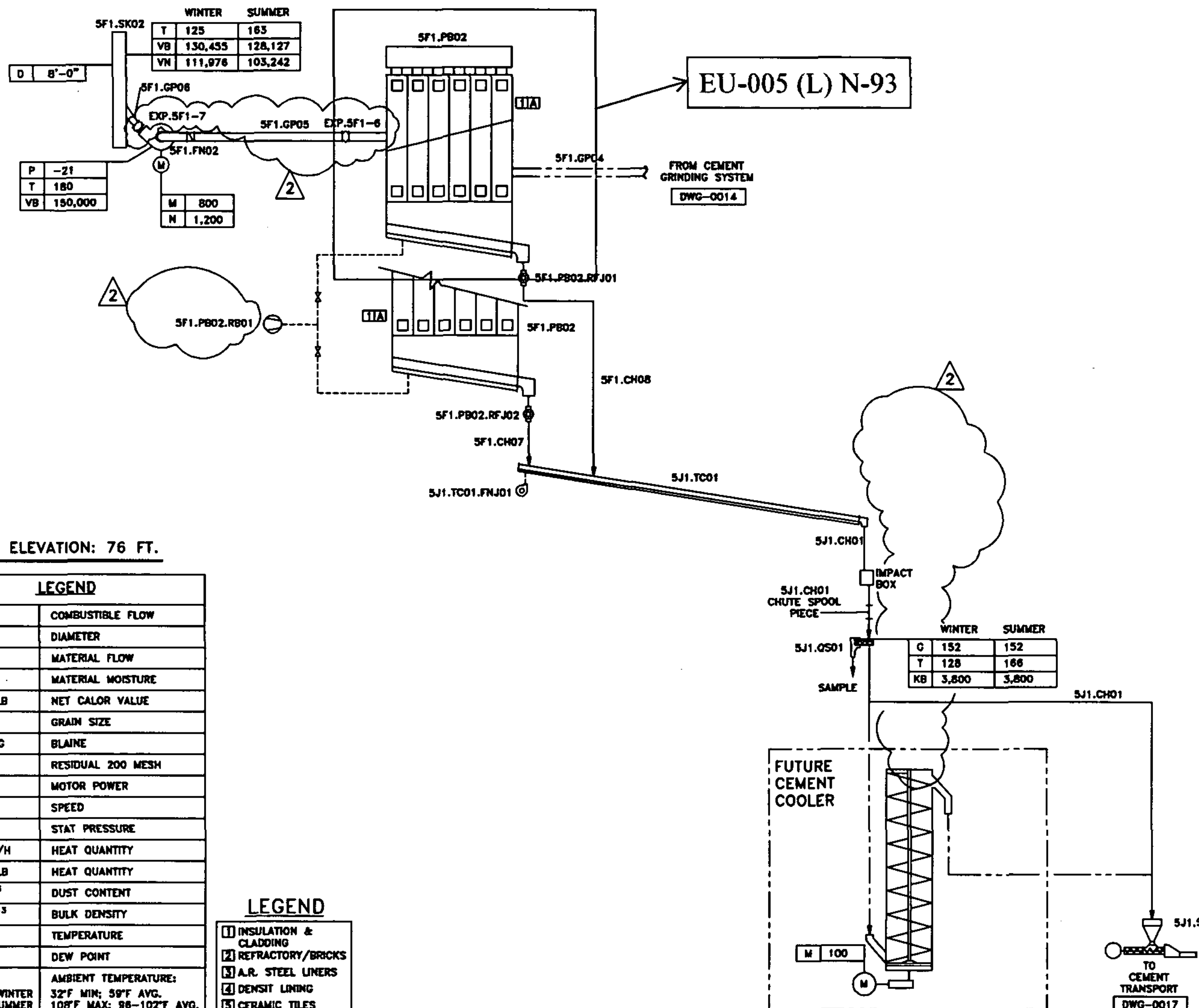
MECHANICAL PROCESS FLOW SHEET
CEMENT GRINDING SYSTEM
3000 STPD CLINKER

Dwg No: 110.59.55-0014
Rev: D
Sheet: 001 of 001
Rev: 2
Ref: -
Scale: NONE

Drawn: PFC 8/22/06
Chkd: LEL 1/11/07
Appd: UR 1/11/07

File No. 5500152001

EU-005 (L) N-93



PLANT ELEVATION: 76 FT.

LEGEND

B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 98-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1 INSULATION & CLADDING
2 REFRACTORY/BRICKS
3 A.R. STEEL LINERS
4 DENSIT LINING
5 CERAMIC TILES
6 CASTABLES

	SUPPLY	INSTALL
A	C	C
B	P	P
C	P	C

C = CONTRACTOR
P = POLYSIUS

NOVEMBER 16, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Dsn	Date	Chkd	Date	Appd	Date
2	CERTIFIED	PFC	11/14/07	LEL	11/14/07	UR	11/14/07
1	CERTIFIED	PFC	7/13/07	LEL	7/13/07	UR	7/13/07
0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

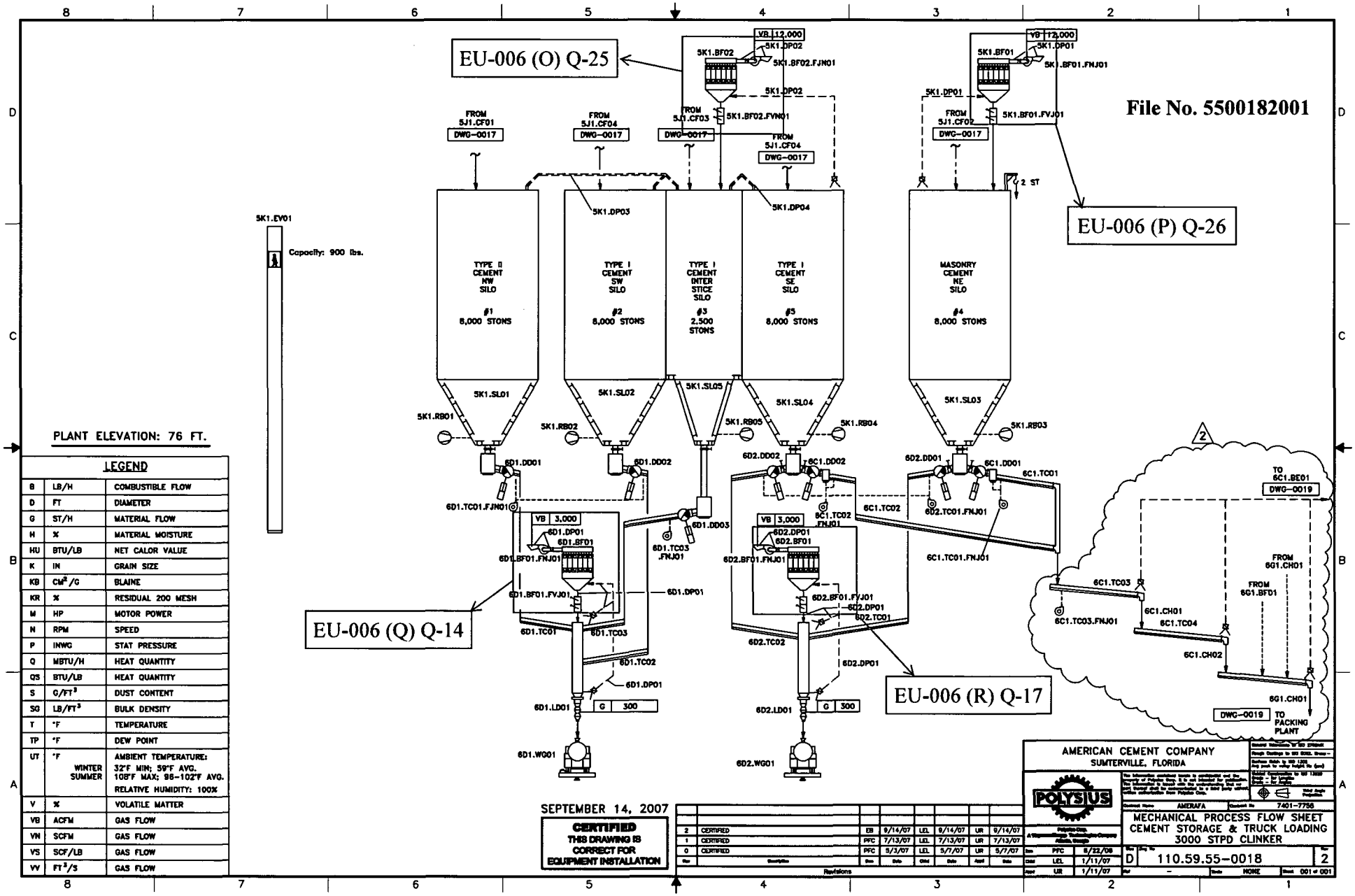
AMERAFA 7401-7758

MECHANICAL PROCESS FLOW SHEET
CEMENT GRINDING SEPOL VENT
3000 STPD CLINKER

Dsn	PFC	8/22/06
Chkd	LEL	1/11/07
Appd	UR	1/11/07

D 110.59.55-0015 Rev 2

Scale NONE Sheet 001 of 001



LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

SEPTEMBER 14, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Drn	Date	Chkd	Date	Appd	Date
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0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

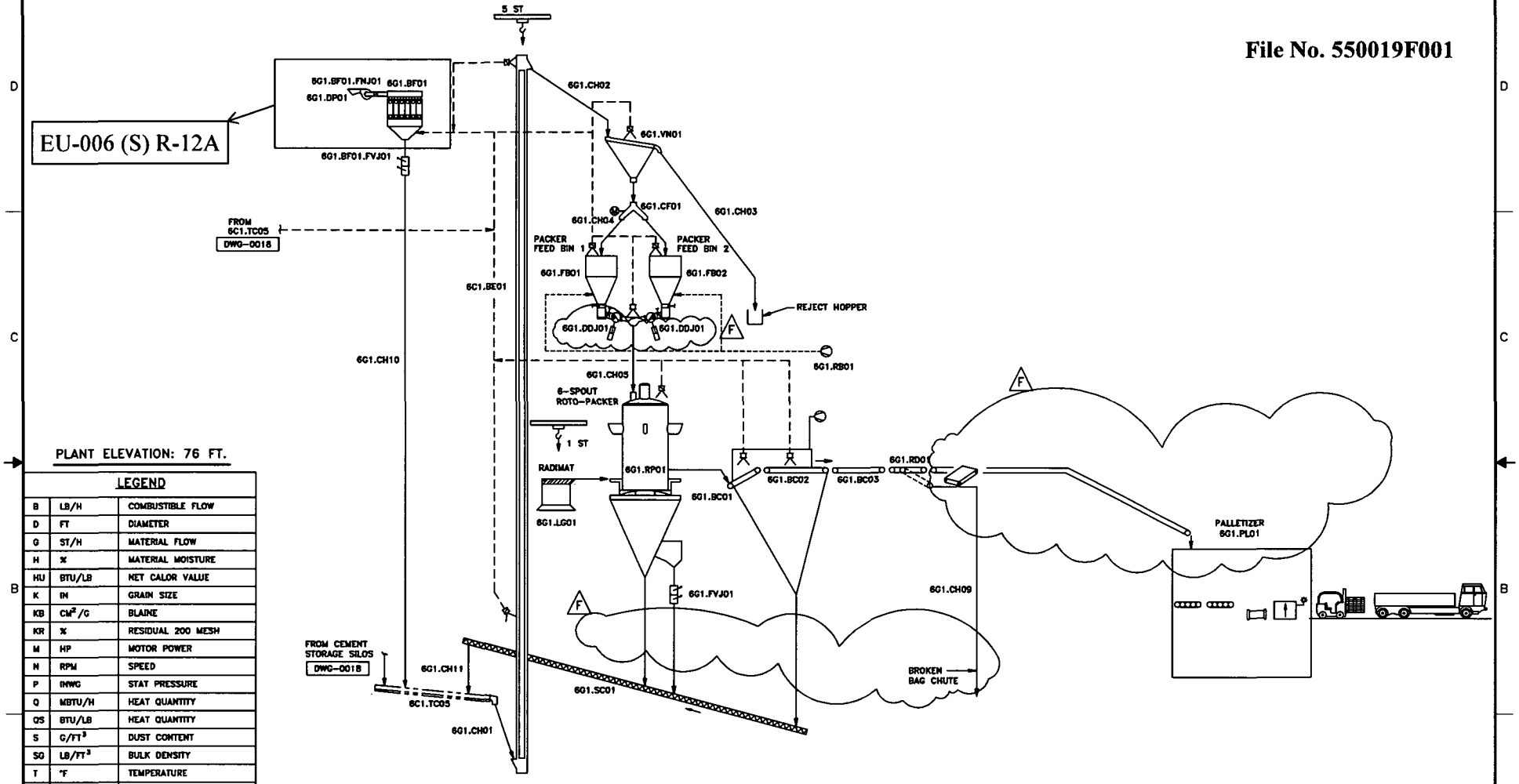
Drawn PFC 6/22/06
Chkd LEL 1/11/07
Appd UR 1/11/07

Document Name AMERAFA Document No. 7401-7756

MECHANICAL PROCESS FLOW SHEET
CEMENT STORAGE & TRUCK LOADING
3000 STPD CLINKER

Dwg. No. 110.59.55-0018 Rev. 2
Size D Scale NONE Sheet 001 of 001

File No. 550019F001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200 MESH
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

NOVEMBER 16, 2007

FOR APPROVAL
DRAWING IN PROGRESS
ISSUED FOR CLIENT APPROVAL

Rev	Description	Drn	Date	Chkd	Date	Appd	Date
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E	FOR APPROVAL	EB	9/14/07	LCL	9/14/07	UR	9/14/07
D	ADDED CHUTES/DUCTS NUMBERS	PFC	3/2/07	LCL	3/2/07	UR	3/2/07
C	FOR APPROVAL	PFC	1/11/07	LCL	1/11/07	UR	1/11/07
B	ADDED SAP NUMBERS	PFC	11/10/06	-	-	-	-

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS
A Thyssenkrupp Technologies Company
Atlanta, Georgia

Checked Name AMERAFA Checked No 7401-7758

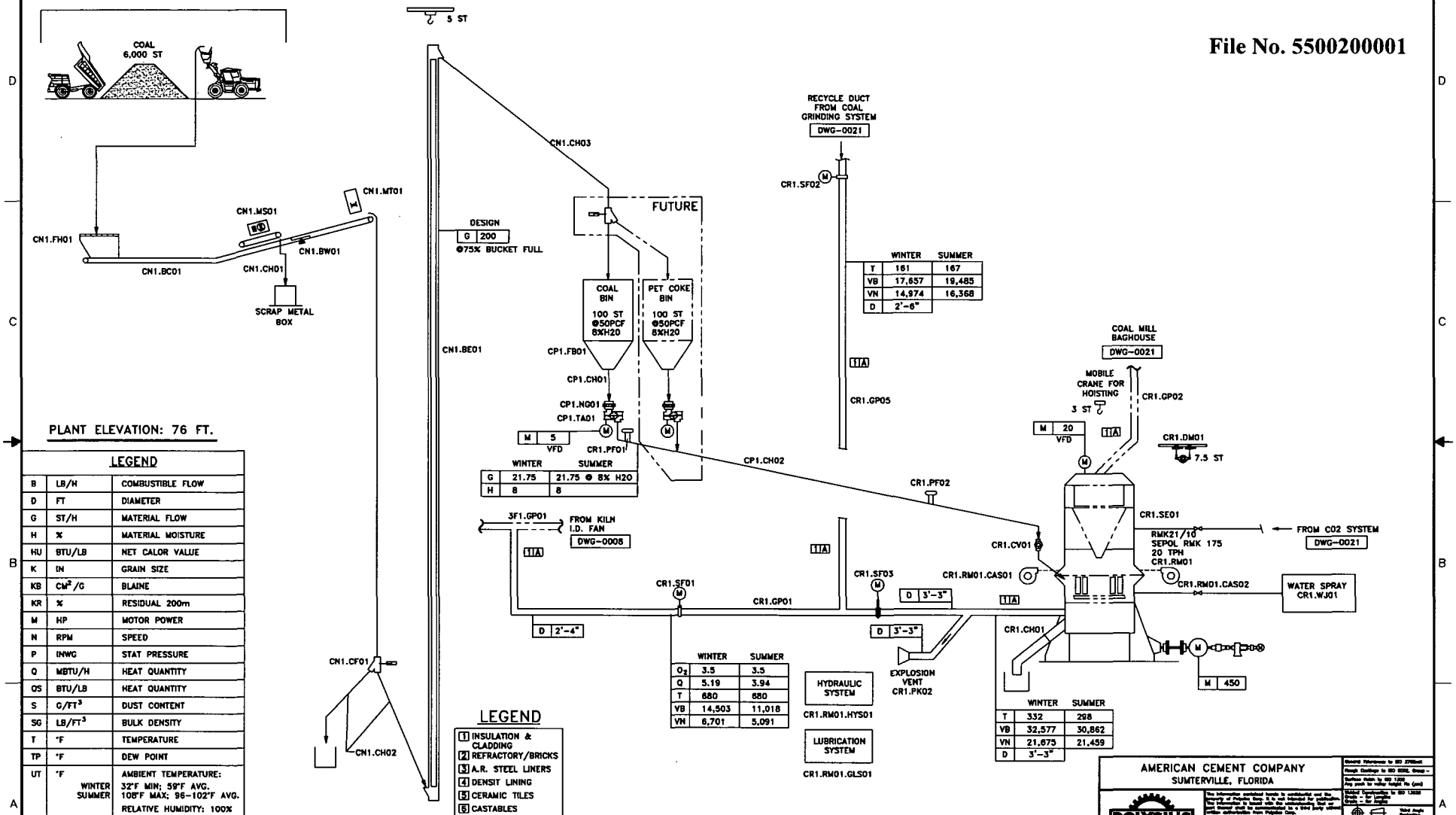
MECHANICAL PROCESS FLOW SHEET
PACKING PLANT
3000 STPD CLINKER

Dsn	PFC	8/22/06
Chkd	LCL	1/11/07
Appd	UR	1/11/07

Dwg No 110.59.55-0019 Rev D F

Pat - Date NONE Sheet 001 of 001

File No. 5500200001



PLANT ELEVATION: 76 FT.

LEGEND

B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200m
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

NOTE: COAL MILL, DUCTS, COAL DUST BIN AND BAGFILTERS ARE DESIGNED FOR 50 PSIG.

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

	SUPPLY	INSTALL
A	C	C
B	P	P
C	P	C

C = CONTRACTOR
P = POLYSIUS

MAY 11, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	Drn	Date	Chkd	Date	Appd	Date
0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

Drn	PFC	8/22/08
Chkd	LEL	1/11/07
Appd	UR	1/11/07

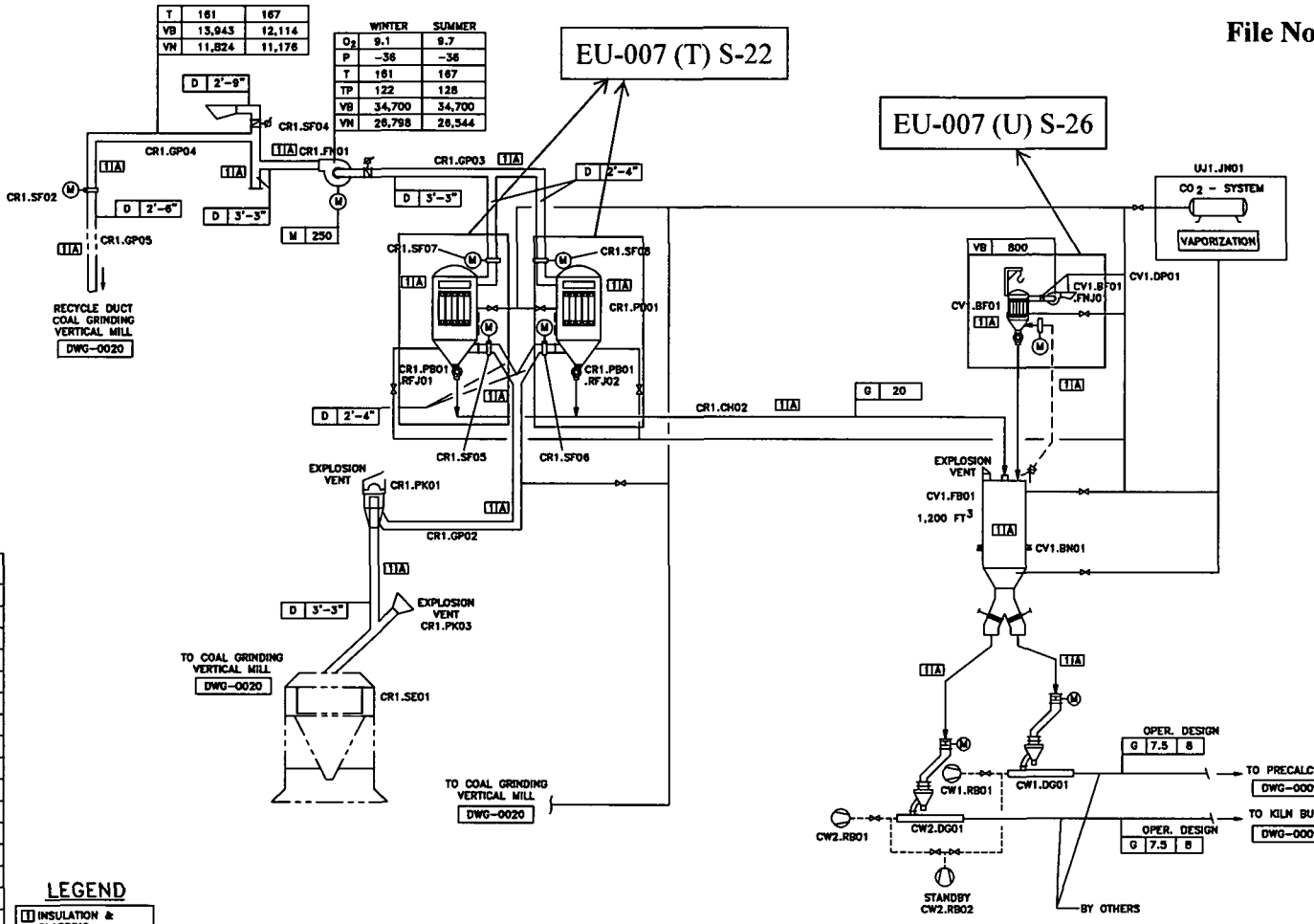
AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS
A Thyssenkrupp Technologies Company
Atlanta, Georgia

MECHANICAL PROCESS FLOW SHEET
COAL GRINDING VERTICAL MILL
3000 STPD CLINKER

Contract Name: AMERAFA
Contract No: 7401-7758
Size: D
Dwg No: 110.59.55-0020
Rev: 0
Scale: NONE
Sheet: 001 of 001

File No. 5500210001



PLANT ELEVATION: 76 FT.

LEGEND		
B	LB/H	COMBUSTIBLE FLOW
D	FT	DIAMETER
G	ST/H	MATERIAL FLOW
H	%	MATERIAL MOISTURE
HU	BTU/LB	NET CALOR VALUE
K	IN	GRAIN SIZE
KB	CM^2/G	BLAINE
KR	%	RESIDUAL 200m
M	HP	MOTOR POWER
N	RPM	SPEED
P	INWG	STAT PRESSURE
Q	MBTU/H	HEAT QUANTITY
QS	BTU/LB	HEAT QUANTITY
S	G/FT^3	DUST CONTENT
SG	LB/FT^3	BULK DENSITY
T	°F	TEMPERATURE
TP	°F	DEW POINT
UT	°F WINTER SUMMER	AMBIENT TEMPERATURE: 32°F MIN; 59°F AVG. 108°F MAX; 96-102°F AVG. RELATIVE HUMIDITY: 100%
V	%	VOLATILE MATTER
VB	ACFM	GAS FLOW
VN	SCFM	GAS FLOW
VS	SCF/LB	GAS FLOW
VV	FT^3/S	GAS FLOW

LEGEND

1	INSULATION & CLADDING
2	REFRACTORY/BRICKS
3	A.R. STEEL LINERS
4	DENSIT LINING
5	CERAMIC TILES
6	CASTABLES

SUPPLY	INSTALL
A C	C
B P	P
C P	C

C = CONTRACTOR
P = POLYSIUS

NOTE: COAL MILL, DUCTS, COAL DUST BIN AND BAGFILTERS ARE DESIGNED FOR 50 PSIG.

MAY 11, 2007

CERTIFIED
THIS DRAWING IS CORRECT FOR EQUIPMENT INSTALLATION

Rev	Description	PFC	Date	Chkd	Date	Appd	Date
0	CERTIFIED	PFC	5/3/07	LEL	5/7/07	UR	5/7/07

Revisions

AMERICAN CEMENT COMPANY
SUMTERVILLE, FLORIDA

POLYSIUS

Drawn PFC 8/22/06
Chkd LEL 1/11/07
Appd UR 1/11/07

Customer Name AMERAFA Customer No. 7401-7758

MECHANICAL PROCESS FLOW SHEET
COAL GRINDING SYSTEM
3000 STPD CLINKER

Dwg No. 110.59.55-0021 Rev D 0

Scale NONE Sheet 001 of 001

RICE Inventory and Applicability Determination

Please include this facility stationary RICE inventory and applicability determination as part of the RAI response.

- The RICE inventory and applicability determination is attached here.

STATIONARY RECIPROCATING INTERNAL COMBUSTION ENGINE (RICE) INVENTORY and NESHAP 40 CFR 63 SUBPART ZZZZ APPLICABLE REQUIREMENTS

(Facilty Name and ARMS ID No.) (Date of inventory)

Stationary Reciprocating Internal Combustion Engine (RICE) Information										40 CFR 63 Subpart ZZZZ Applicable Requirements *(list all applicable **subsections**)*					
Engine Description/Location	**Engine Serial Number**	**Engine Manufacturer**	**Model Number**	**Date of Construction/ Reconstr.**	**Power (bhp)**	**Fuel**	**CI or SI**	**SI Type (4SLB, 2SLB or 4SRB)**	**Indicate if Emergency or Limited Use***	**Emission Standards** (from 63.6603, & Tables 2b & 2d)	**Operation/ Maintenance Standards** (from 63.6603, & Table 2d)	**Performance Testing** (from 63.6612, 63.6615 & Table 3)	**Monitoring** (from 63.6625) & **Contin. Compl.** (from 63.6640 & Table 6)	**Recordkeeping** (from 63.6655)	**Reporting** (from 63.6650, & Table 7)
Emergency Generator Powerplant Location: Adjacent ER#4	SYC01962	Caterpillar	C32	2007	1505	Diesel	CI	N/A	Emergency	N/A	N/A	N/A	N/A	N/A	N/A

NOTES:

CI = Compression Ignition; SI = Spark Ignition

* State specifically whether the engine is an emergency RICE or a limited use RICE. See 40 CFR 63.6675 for definitions of Emergency Stationary RICE, and Limited Use Stationary RICE (operates < 100 hours/year)

Initial Notification of Applicability

National Emission Standards for Hazardous Air Pollutants:

Stationary Reciprocating Internal Combustion Engines

40 CFR Part 63 Subpart ZZZZ

☒ Yes, I am subject to 40 CFR Part 63 subpart ZZZZ National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines

NAICS code(s): 327310

Compliance Date: ☐ Existing source: May 3, 2013 ☒ New/reconstructed source: upon initial startup

Note: The May 3, 2013 compliance date for existing sources applies to the following engine types:

- Existing non-emergency compression ignition (CI) stationary RICE with a site rating of more than 500 brake HP located at a major source of HAP emissions
- Existing stationary CI RICE with a site rating of less than or equal to 500 brake HP located at a major source of HAP emissions
- Existing stationary CI RICE located at an area source of HAP emissions

Company name: American Cement Company, LLC

Facility name (if different):

Facility (physical location) address: 4750 East CR 470, Sumterville, FL 33585

My facility is a (please choose one): ☒ Major source ☐ Area source

Owner name/title: Cary Cohrs, President

Owner/company address: P. O. Box 445 Sumterville, FL 33585

Owner telephone number: (352-569-5393

Owner email address (if available):

If the Operator information is different from the Owner, please provide the following:

Operator name/title: _____

Operator telephone number: _____

Operator email address (if available): _____

Brief description of the stationary RICE at the facility, including number of engines and the site-rated HP of each engine: 1) Emergency Generator with 1,505 HP Tier 2 Caterpillar Diesel Engine Engine information: Model C32, S/N SYC01962, Manufactured 2007 The basis for exclusion of further compliance as specified in 40 CFR 63.6590(b) other than Initial Notification requirements of 40 CFR 63.6645(f) is this Stationary RICE is used for generation of electrical power in case of emergency.

I hereby certify that the information presented herein is correct to the best of my knowledge.

 11/1/10

(Signature) (Date)

Cary Cohrs, President (352) 569-2217

(Name/title) (Telephone No.)

ATTACHMENT 3
KILN & COOLER CONSTRUCTION DATE

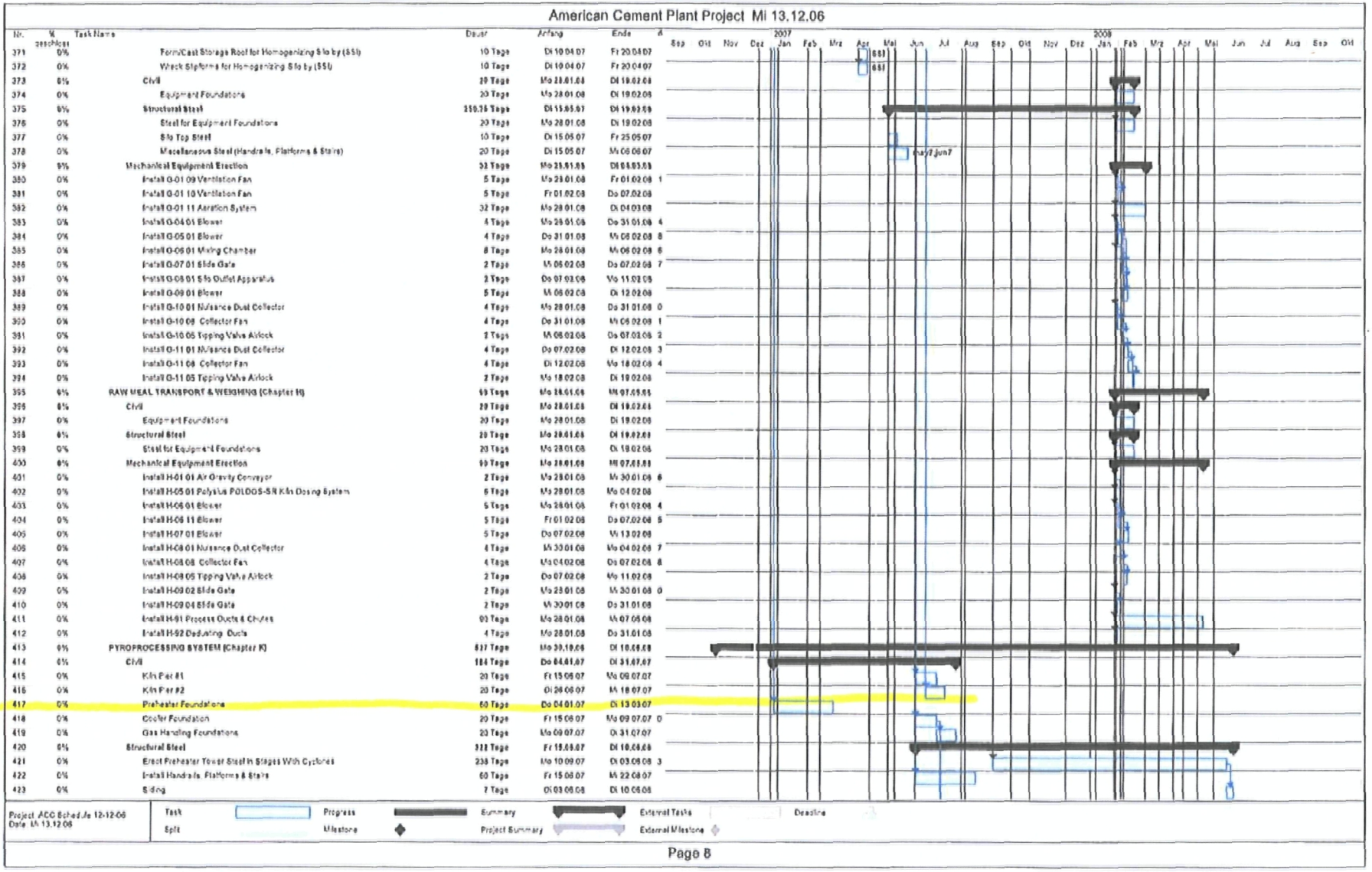
Kiln and Cooler Construction Date

2. NSPS Subpart F Applicable Requirements - NSPS 40 CFR 60 Subpart F as amended in the September 9, 2010 Federal Register (effective date of November 8, 2010 , which will be prior to the effective date of the initial Title V operation permit for this facility) has additional requirements for kilns and clinker coolers for which construction commenced after June 16, 2008. In order to confirm whether these requirements are applicable to this facility, please provide the date(s) of commencement of construction for the kiln and for the clinker cooler and the basis for these dates.

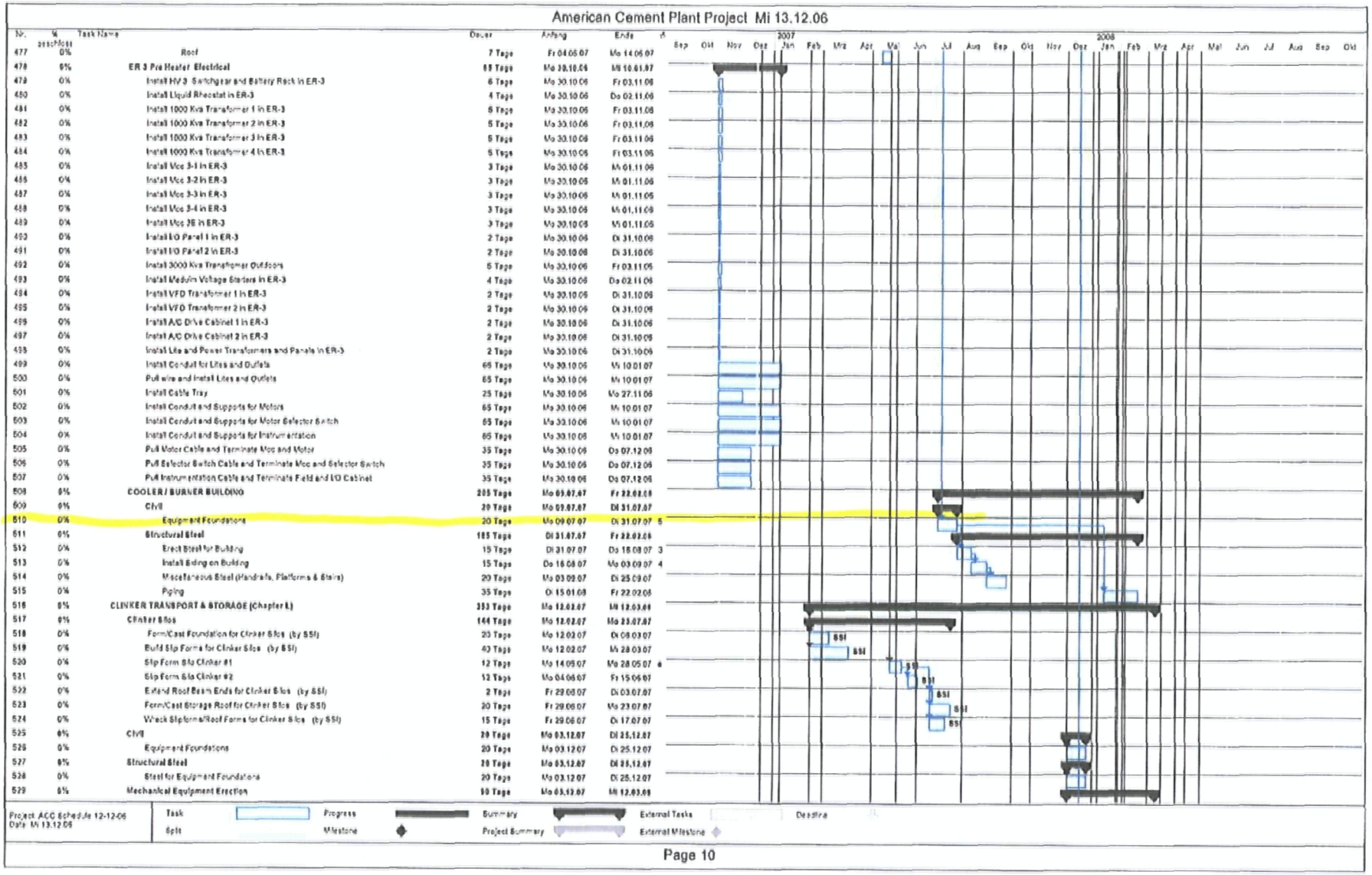
The actual commencement of construction date for the Kiln is March 13, 2007; Gantt Chart line 417 for Preheater Foundations.

The actual commencement of construction date for the Cooler is July 9, 2007; Gant Chart line 510 for Cooler/Burner Building Foundations.

Gantt Chart Line 417 for Preheater Foundations



Gantt Chart Line 510 for Cooler/Burner Building Foundations



ATTACHMENT 4
QUARRY & RAW MATERIAL STORAGE CONSTRUCTION DATE

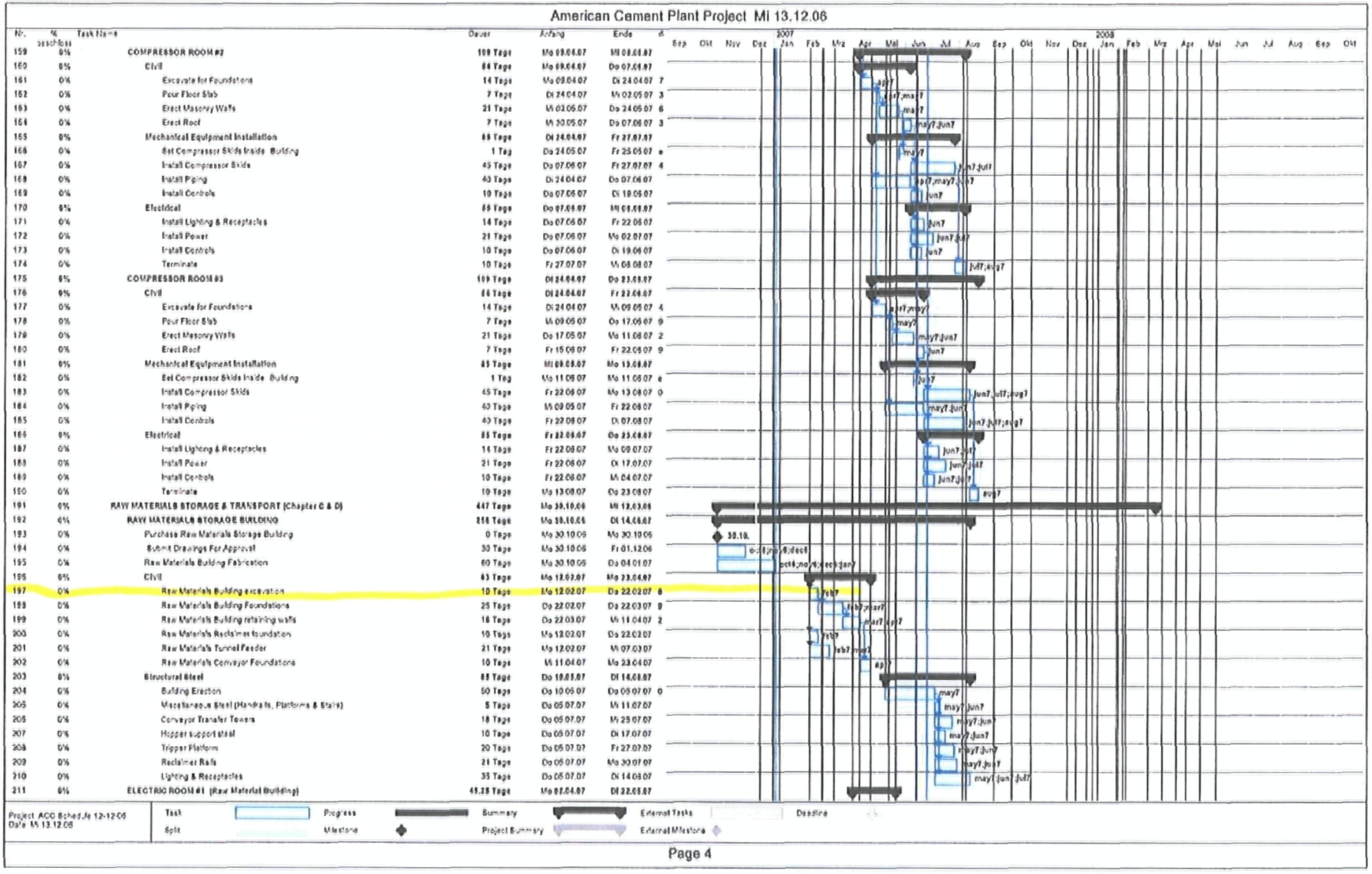
Quarry and Raw Material Storage Construction Date

3. Subpart OOO Applicable Requirements - NSPS 40 CFR 60 Subpart OOO (Standards of Performance for Nonmetallic Mineral Processing Plants) is applicable to EU 001 (Raw Material Quarrying, Crushing and Storage). This is not reflected in the application, as an identification of applicable requirements attachment was not provided for EU 001. Please provide such attachment. *(See also Note below item 4. below.)* Subpart OOO, as amended in the April 29, 2009 Federal Register, has additional requirements for mineral processing equipment for which construction commenced on or after April 22, 2008. In order to confirm whether these requirements are applicable to any of the non-metallic mineral processing equipment at this facility, please provide the date(s) of commencement of construction for the limestone processing, storage, and handling equipment at this facility and the basis for these dates

The actual commencement of construction date for the Raw Material Storage is February 12, 2007; Gantt Chart line 197 for Raw Material Building excavation.

The commencement of construction date for the Quarry is not specified, but the Request for Change Order dated October 18, 2007 with attached schedule shows active construction in the Quarry.

Gantt Chart Line 197 for Raw Material Building Excavation



Nr.	% beschlossen	Task Name	Dauer	Anfang	Ende
159	0%	COMPRESSOR ROOM #2	109 Tage	Mo 09.04.07	Mi 08.08.07
160	0%	Civil	84 Tage	Mo 09.04.07	Do 07.06.07
161	0%	Excavate for Foundations	14 Tage	Mo 09.04.07	Di 24.04.07
162	0%	Pour Floor Slab	7 Tage	Di 24.04.07	Mi 02.05.07
163	0%	Erect Masonry Walls	21 Tage	Mi 02.05.07	Do 24.05.07
164	0%	Erect Roof	7 Tage	Mi 30.05.07	Do 07.06.07
165	0%	Mechanical Equipment Installation	85 Tage	Di 24.04.07	Fr 27.07.07
166	0%	Set Compressor Skids Inside Building	1 Tag	Do 24.05.07	Fr 25.05.07
167	0%	Install Compressor Skids	45 Tage	Do 07.06.07	Fr 27.07.07
168	0%	Install Piping	40 Tage	Di 24.04.07	Do 07.06.07
169	0%	Install Controls	10 Tage	Do 07.06.07	Di 19.06.07
170	0%	Electrical	85 Tage	Do 07.06.07	Mi 08.08.07
171	0%	Install Lighting & Receptacles	14 Tage	Do 07.06.07	Fr 22.06.07
172	0%	Install Power	21 Tage	Do 07.06.07	Mo 02.07.07
173	0%	Install Controls	10 Tage	Do 07.06.07	Di 19.06.07
174	0%	Terminate	10 Tage	Fr 27.07.07	Mi 08.08.07
175	0%	COMPRESSOR ROOM #3	109 Tage	Di 24.04.07	Do 23.08.07
176	0%	Civil	84 Tage	Di 24.04.07	Fr 22.06.07
177	0%	Excavate for Foundations	14 Tage	Di 24.04.07	Mi 09.05.07
178	0%	Pour Floor Slab	7 Tage	Mi 09.05.07	Do 17.05.07
179	0%	Erect Masonry Walls	21 Tage	Do 17.05.07	Mo 11.06.07
180	0%	Erect Roof	7 Tage	Fr 15.06.07	Fr 22.06.07
181	0%	Mechanical Equipment Installation	85 Tage	Mi 09.05.07	Mo 13.08.07
182	0%	Set Compressor Skids Inside Building	1 Tag	Mo 11.06.07	Mo 11.06.07
183	0%	Install Compressor Skids	45 Tage	Fr 22.06.07	Mo 13.08.07
184	0%	Install Piping	40 Tage	Mi 09.05.07	Fr 22.06.07
185	0%	Install Controls	40 Tage	Fr 22.06.07	Di 07.08.07
186	0%	Electrical	85 Tage	Fr 22.06.07	Do 23.08.07
187	0%	Install Lighting & Receptacles	14 Tage	Fr 22.06.07	Mo 09.07.07
188	0%	Install Power	21 Tage	Fr 22.06.07	Di 17.07.07
189	0%	Install Controls	10 Tage	Fr 22.06.07	Mi 04.07.07
190	0%	Terminate	10 Tage	Mo 13.08.07	Do 23.08.07
191	0%	RAW MATERIALS STORAGE & TRANSPORT (Chapter C & D)	447 Tage	Mo 30.10.06	Mi 13.03.08
192	0%	RAW MATERIALS STORAGE BUILDING	258 Tage	Mo 30.10.06	Di 14.08.07
193	0%	Purchase Raw Materials Storage Building	0 Tage	Mo 30.10.06	Mo 30.10.06
194	0%	Submit Drawings For Approval	30 Tage	Mo 30.10.06	Fr 01.12.06
195	0%	Raw Materials Building Fabrication	60 Tage	Mo 30.10.06	Do 04.01.07
196	0%	Civil	63 Tage	Mo 12.02.07	Mo 23.04.07
197	0%	Raw Materials Building excavation	10 Tage	Mo 12.02.07	Do 22.02.07
198	0%	Raw Materials Building Foundations	25 Tage	Do 22.02.07	Do 22.03.07
199	0%	Raw Materials Building retaining walls	18 Tage	Do 22.03.07	Mi 11.04.07
200	0%	Raw Materials Reclaimer foundation	10 Tage	Mo 12.02.07	Do 22.03.07
201	0%	Raw Materials Tunnel Feeder	21 Tage	Mo 12.02.07	Mi 07.03.07
202	0%	Raw Materials Conveyor Foundations	10 Tage	Mi 11.04.07	Mo 23.04.07
203	0%	Structural Steel	85 Tage	Do 10.05.07	Di 14.08.07
204	0%	Building Erection	50 Tage	Do 10.05.07	Do 05.07.07
205	0%	Miscellaneous Steel (Handrails, Platforms & Stairs)	5 Tage	Do 05.07.07	Mi 11.07.07
206	0%	Conveyor Transfer Towers	18 Tage	Do 05.07.07	Mi 25.07.07
207	0%	Hopper support steel	10 Tage	Do 05.07.07	Di 17.07.07
208	0%	Tripper Platform	20 Tage	Do 05.07.07	Fr 27.07.07
209	0%	Reclaimer Rails	21 Tage	Do 05.07.07	Mo 30.07.07
210	0%	Lighting & Receptacles	35 Tage	Do 05.07.07	Di 14.08.07
211	0%	ELECTRIC ROOM #1 (Raw Material Building)	45.38 Tage	Mo 02.04.07	Di 22.05.07

ATTACHMENT 5
COAL MILL & COAL STORAGE CONSTRUCTION DATE

Coal Mill and Coal Storage Construction Date

4. Subpart Y Applicable Requirements - NSPS 40 CFR 60 Subpart Y (Standards of Performance for Coal Preparation and Processing Plants) is applicable to the coal processing and conveying equipment at this facility (EU 007), including coal crushers/grinders, and coal storage, transfer and loading systems. This is not reflected in the application attachment Identification of Applicable Requirements – EU 007 *(*see Subpart LLL 40 CFR 63-1356 note below)*. Different Subpart Y requirements apply to equipment that commenced construction on or before April 28, 2008, equipment that commenced construction after April 28 and on or before May 27, 2009, and equipment that commenced construction after May 27, 2009. In order to confirm whether these requirements are applicable to this facility, please provide the date(s) of commencement of construction for the coal processing, storage and conveying equipment at this facility and the basis for these dates.

The actual commencement of construction date for the Coal Storage Building is January 9, 2007; Gantt Chart line 819 for Foundations for Coal Storage Building.

The actual commencement of construction date for the Coal Conveyor is February 15, 2007; Gantt Chart line 826 for Coal Conveyor Foundation.

The actual commencement of construction date for the Coal Grinding December 3, 2007; Gantt Chart line 825 for Coal Grinding Foundation.

Request for Change Order

D. B. Construction Services, Inc
4309 Raleigh Street Tampa Florida 33619
Phone: (813)248-6258 Fax: (813)248-5201

Client: American Cement

Date: 10/18/2007

Client P.O. #:

Project Number: 061-088

Project: Quarry

Cost Code:

Change order No.: 001

Contact: Alexander Smeets

THE CONTRACT IS CHANGED AS FOLLOWS:

The following items resulted in production loss during the weeks ending 10/23/07 and 10/30/07:

1. Delay in site preparation; Owner to strip and bring site up to elevation. After being informed that site was ready, DBCS Mobilized crew. It was found that the Storage & MCC building site was not large enough nor was it at the correct elevation. This was discovered early on the first day. Owner was notified immediately.
2. Incorrect control points and drawing co-ordanate locations resulted in additional layout work.

(See attachment 1)

ALL OTHER CONTRACTUAL OBLIGATIONS REMAIN UNCHANGED

*The original Contract Sum was.....		$ 475,000.00
*Net change by previously authorized Change Orders.....	$ -	
*The Contract Sum prior to this Change Order was.....		$ 476,000.00
*The Contract Sum will be increased by this Change Order in the Amount of.....	$ 5,395.00	
*The new Contract Sum including this Change Order will be.....		**$ 480,395.00**

*The Contract Time will be increased by 8 Days
*The date of Substantial Completion as of the date of this Change Order therefore is: n/a

Client	D. B. CONSTRUCTION SERVICES INC. (Contractor)
Address	4309 Raleigh Street (Address)
	Tampa, Florida, 33619
By:	By:
Date:	Date:

D B CONSTRUCTION SERVICES INC.
4309 RALEIGH ST
TAMPA, FL. 33619

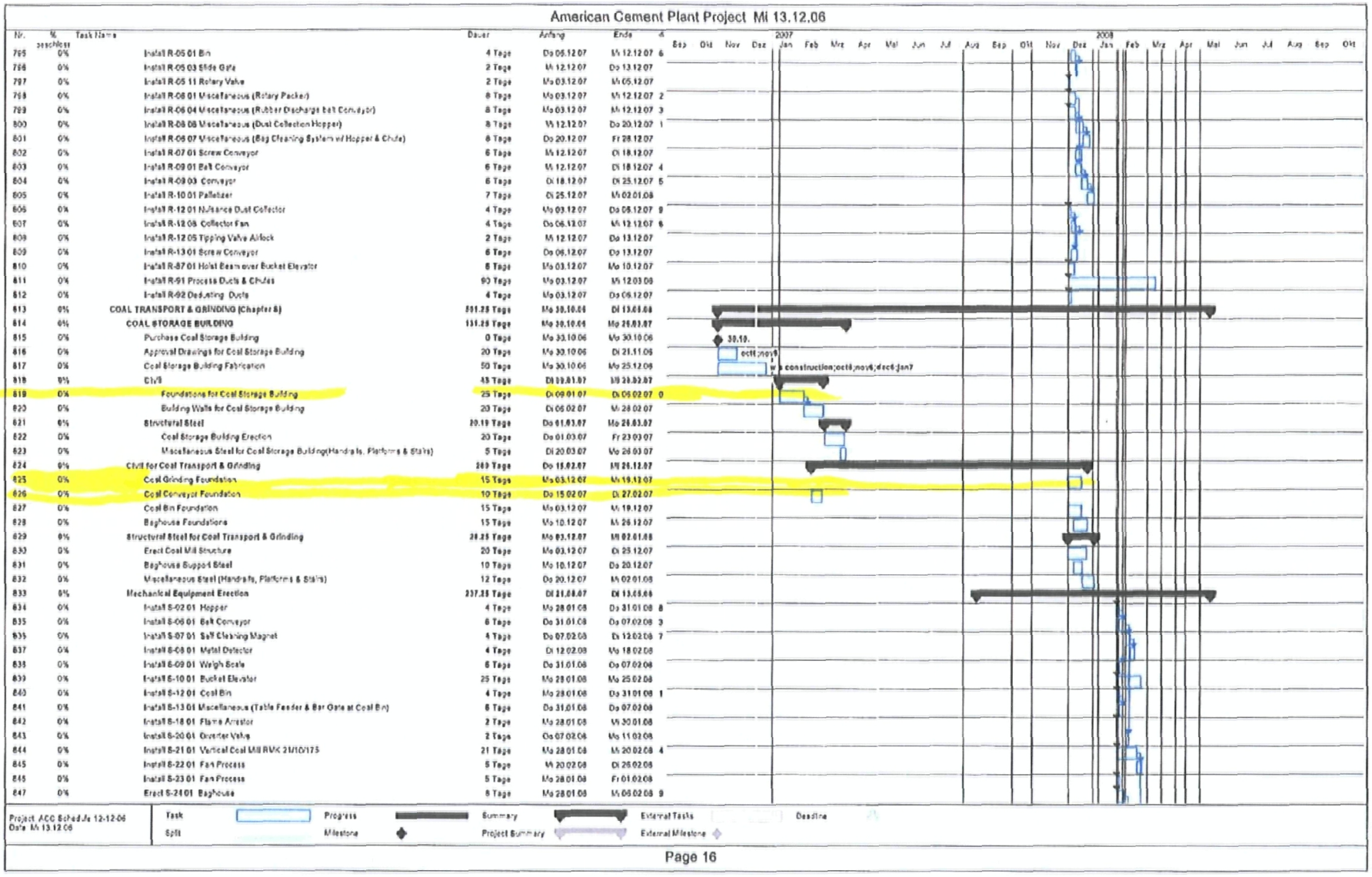
Request for Change Order (Attachment 1), Page 2 of 2

ATTACHMENT 1

SEPTEMBER 2007

Monday	Tuesday	Wednesday	Thursday	Friday
17-Sep	18-Sep	19-Sep	20-Sep	21-Sep
3 men x 8 hours (of 10) lost.	3 men x 8 hours (of 10) lost.	RAIN OUT	3 men x 5 hours (of 10) lost.	No Work
INCOMPLETE SITE PREP				
Craft / Hr Rate / No. hrs / Amount: Supt $ 45.00 8 $ 360.00; Carp $ 35.00 16 $ 560.00	Craft / Hr Rate / No. hrs / Amount: Supt $ 45.00 8 $ 360.00; Carp $ 35.00 16 $ 560.00	Craft / Hr Rate / No. hrs / Amount:	Craft / Hr Rate / No. hrs / Amount: Supt $ 45.00 5 $ 225.00; Carp $ 35.00 10 $ 350.00	Craft / Hr Rate / No. hrs / Amount:
$920.00	$920.00	$0.00	$575.00	$0.00
24-Sep	25-Sep	26-Sep	27-Sep	28-Sep
4 men x 10 hours (of 10) lost.	3 men x 7 hours (of 10) lost.	3 men x 5 hours (of 10) lost.		
RE-LAYOUT				
INCOMPLETE SITE PREP				
Craft / Hr Rate / No. hrs / Amount: Supt $ 45.00 20 $ 900.00; Carp $ 35.00 20 $ 700.00	Craft / Hr Rate / No. hrs / Amount: Supt $ 45.00 7 $ 315.00; Carp $ 35.00 14 $ 490.00	Craft / Hr Rate / No. hrs / Amount: Supt 45 5 $ 225.00; Carp 35 10 $ 350.00	Craft / Hr Rate / No. hrs / Amount:	Craft / Hr Rate / No. hrs / Amount:
$1,600.00	$805.00	$575.00	$0.00	$0.00

Gantt Chart Line 819 for Coal Storage Building; Line 826 for Coal Conveyor Foundation; Line 825 for Coal Grinding Foundation



ATTACHMENT 6
MERCURY MONITOR INSTALLATION REQUIREMENT

Hg Monitor Installation Requirement

5. Hg Monitor Installation Requirement - Specific Condition No. 21.b of Construction Permit 1190042-001-AC, as amended by Construction Permit 190042-006-AC, requires that a mercury (Hg) CEMS be installed within 240 days following the first year of operation, with the first year of operation defined as 365 calendar days after the first day the kiln produces clinker. Please provide the date of the first kiln clinker production, and the resulting deadline date for installation of the Hg CEMS. Please also provide the status of Hg CEMS procurement and installation, and an anticipated schedule for CEMS certification (required by the above permit condition to be completed 90 days after CEMS installation).

The first clinker was produced on May 17, 2009.

The deadline for the Hg-CEMS installation is January 12, 2011.

The Hg-CEMS will be delivered beginning the week of December 27, 2010.

Installation will begin the week of January 3, 2011.

The CEMS certification is scheduled to be performed within 90 days of the installation date.

ATTACHMENT 7
CAM APPLICABILITY

CAM Applicability

6. CAM Applicability for Baghouses DC-1 and DC-2 – In the CAM Applicability Analysis and CAM Plan attachment to the application, under the section labeled Units Not Subject to CAM Requirements, Baghouse ID No. DC-1 and DC-2 are shown in the list of five baghouses to which it was determined that CAM did not apply. While a basis for this determination was supplied for three of the listed baghouses, it was not provided for Baghouses DC- and DC-2. These two baghouses also appear in the list on the following page under Compliance Assurance Monitoring Plan: Fabric Filters for PM Control. Please indicate whether these two baghouse should be removed from the list of baghouses for which CAM does not apply, or provide a basis for why it does not apply.

(Note – As indicated in the section labeled Inherent Process Equipment in the above CAM attachment, in order for a piece of equipment to be considered as inherent to the operation rather than strictly a control device, three questions need to be answered in the affirmative. 1.) Is the primary purpose of the equipment other than to control emissions to comply with the applicable PM emissions limit (e.g., product recovery, worker safety)/ 2.) Would the equipment be installed if there were no applicable emissions limit in place for this emissions unit? 3.) Is the efficiency at which the equipment is designed to be operated above that which would be required to assure compliance with the applicable emissions limit (e.g., a significant margin of compliance)?)

- The attached spreadsheet shows the CAM Plan applicability of the baghouses. CAM applies to DC-1 and DC-2.

CAM APPLICABILITY							
EU	Baghouse	Process	Purpose of Equip	Installation Use	Operating Efficiency vs. Compliance Limit	Potential Manufacturing % of $$ Loss	Applicable to CAM
002	F10 (3J1.BF01)	Raw meal transfer to air lift to homogenizing silo	Controlled pressure relief from air slide that would otherwise be forcing raw meal raw meal into the atmosphere by air pressure in the air slide transfer.	Maintain raw meal in process	Higher	25%	Yes
	G07 (3K1.BF02)	Raw meal transfer to homogenizing silo	Controlled pressure relief from the air lift to silo transfer process that would otherwise be forcing raw meal into atmosphere through the silo vent	Maintain raw meal in process	Higher	25%	Yes
	G10 (3K1.BF01)	Homogenizing silo bin vent	Controlled pressure relief from silo that would otherwise be forcing raw meal through vents into atmosphere as the silo fills.	Maintain raw meal in process	Higher	25%	Yes
	E38 (4E1.BF01)	Filter dust surge bin	Controlled pressure relief for returned material air lift that would be forcing raw meal into the atmosphere through the silo vent	Maintain raw meal in process	Higher	25%	Yes
	H08 (4C1.BF01)	Raw meal transfer from homogenizing silo	Controlled pressure relief from air slide that would otherwise be forcing raw meal raw meal into the atmosphere by air pressure in the air slide transfer.	Maintain raw meal in process	Higher	25%	Yes
003	E19 (4E1.PB01)	Preheater/kiln/cooler/raw mill through main stack	Environmental control of material from various sources that are not otherwise controlled by process baghouses.	Maintain compliance with PM and PM10 emission limits exiting the main stack	Higher	N/A	Yes
004	L03 (4T1.BF01)	Clinker cooler discharge	Capture clinker dust from pan conveyor near discharge of cooler and place back into pan conveyor to clinker storage silos for further processing	Maintain clinker dust in process	Higher	75%	Yes
	L06 (4T1.BF02)	Clinker transfer to clinker silo #1	Capture clinker dust from transfer process and place into clinker storage silo #1 for further processing. Also, a controlled pressure relief for the silo.	Maintain clinker dust in process	Higher	75%	Yes
	M08 (4T1.BF03)	Clinker transfer to clinker silo #2	Capture clinker dust from transfer process and place into clinker storage silo #2 for further processing. Also, a controlled pressure relief for the silo.	Maintain clinker dust in process	Higher	75%	Yes
	DC-1 (5E1.BF01)	Clinker transfer from Clinker Silo #1	Capture clinker dust from transfer process and place into pan conveyor for further processing in finish mill	Maintain clinker dust in process	Higher	75%	Yes
	DC-2 (5E1.BF02)	Clinker transfer from Clinker Silo #2	Capture clinker dust from transfer process and place into pan conveyor for further processing in finish mill	Maintain clinker dust in process	Higher	75%	Yes
005	N-93 (5F1.PB02)	Finish mill air separator	Separate fine cement for transfer to cement silos from course cement that goes back into finish mill for further grinding.	Designed for the process of separating fine from course cement	Higher	100%	No, Inherent
	N-94 (5F1.PB01)	Finish mill sweep	Assists in pulling cement through finish mill and returns captured cement to air slide transfer to bucket elevator taking cement to separator	Designed for the process of capturing cement from finish mill to transfer to separator	Higher	100%	Yes
006	N-91 (5F1.BF01)	Cement transfer from finish mill	Controlled pressure relief of bucket elevator being fed from an air slide that would otherwsie be forcing cement into the atmosphere from the bucket elevator.	Maintain cement in process	Higher	100%	Yes
	Q-25 (5K1.BF01)	Cement silos # 1,2,3,5	Controlled pressure relief from silos that would otherwise be forcing cement through vents into atmosphere as the silo fills.	Maintain cement in silo for sales	Higher	100%	Yes
	Q-26 (5K1.BF02)	Cement silo #4	Controlled pressure relief from silo that would otherwise be forcing cement through vents into atmosphere as the silo fills.	Maintain cement in silo for sales	Higher	100%	Yes
	Q-14 (6D1.BF01)	Truck Loadout #1	Controlled presure relief from transfer to customer truck that would otherswise be forcing cement from the truck as is it fills.	Maintain cement in process to sell	Higher	100%	Yes
	Q-17 (6D2.BF01)	Truck Loadout #2	Controlled pressure relief from transfer to customer truck that would otherswise be forcing cement from the truck as is it fills.	Maintain cement in process to sell	Higher	100%	Yes
	R-12A (6G1.BF01)	Packhouse Bagging	Controlled pressure relief from air slides transferring cement to the bagging system and bucket elevatorthat would otherswise be forcing cement into the atmosphere.	Maintain cement in process to sell	Higher	100%	Yes
007	S-22 (CR1.PB01) & (CR1.PB02)	Coal/Pet Coke Mill	Separate fine coal/pet coke for transfer to coal silos from course cement that goes back into coal mill for further grinding.	Designed for the process of separating fine coal for transfer to storage silo.	Higher	100%	No, Inherent
	S-26 (CV1.BF01)	Coal Pet Coke Bin	Controlled Pressure relief from bin that would otherwise be released coal through vents into atmosphere as the silo fills.	Maintain coal in process for fuel	Higher	100%	No, < 100 TPY
Process Design	Pressure relief is an integral part of the process since if pressure were not released no transfer of material would be possible						
Business Financials	Considering the value of the material being processed the uncontrolled release of the material could not be tolerated from a business perspective						

ATTACHMENT 8
INDICATOR RANGES

Indicator Ranges

7. Justification for Indicator Operating Ranges in CAM Plan for Baghouse PM Control Devices - The proposed Compliance Assurance Monitoring (CAM) Plan for the eighteen (18) baghouses at this facility to which the application indicated that CAM did apply included the same monitoring primary indicator of baghouse pressure drop, with the same indicator operating range of 2-8' w.g. The justification for this generic indicator range is not sufficient. The indicator range needs to be established and justified separately for each baghouse (or manufacturer/model number of baghouse where common equipment was installed). For those baghouses for which PM compliance stack testing was done (e.g., Main Baghouse (EU 003), and Baghouse ID N-93 (EU 005)), the indicator range should be based in part on the observed baghouse pressure drop range during the compliance test(s) *)(see 40 CFR 64.4(c)).* (It can also include data from other emissions testing done on the stack.) For baghouses without stack testing data, as well as those with stack test data, other information may be considered in selecting the indicator operating ranges such as: data from tests performed on similar units at similar facilities; control device manufacturers data, guarantees and recommendations; empirical information concerning the assessment of control technology performance (e.g., empirical performance information from a control technology handbook); and theoretical considerations based on generally accepted engineering practices (i.e., engineering judgment and assessment). *(Note – the above was taken from the EPA CAM Technical Guidance Document - 8/98.)*

Please submit a baghouse pressure drop indicator operating range for each baghouse (or group of baghouses that are the same manufacturer and model number), along with a justification for each that demonstrates to the Department that operation of the baghouse within this range will provide reasonable assurance of ongoing compliance with the applicable PM/PM10 emission standards (0.01 gr/dscf and 0.007 gr/dscf, except for EU 003 (different form of limit), and EU 005 Finish Mill Air Separator (0.007 gr/dscf for both PM & PM10)).

Information received from facility personnel indicating manufacturer's specification of the ideal operating pressure ranges of the baghouses in question are being submitted below:

EU ID	ACC ID	Tag No.	Manufacturer	Indicator Range
002	F10	3J1.BF01	CAMCORP	4"-7"
002	G07	3K1.BF02	CAMCORP	4"-7"
002	G10	3K1.BF01	CAMCORP	4"-7"
002	E38	4E1.BF01	CAMCORP	4"-7"
002	H08	4C1.BF01	CAMCORP	4"-7"
003	E19	4E1.PB01	CAMCORP	4"-7"
004	L03	4T1.BF01	CAMCORP	4"-7"
004	L06	4T1.BF02	CAMCORP	4"-7"
004	M08	4T1.BF03	CAMCORP	4"-7"
004	DC-1	5E1.BF01	DONALDSON	4"-7"
004	DC-2	5E1.BF02	DONALDSON	4"-7"
005	N-94	5F1.PB01	CAMCORP	3"-5"
006	N-91	5F1.BF01	CAMCORP	4"-7"
006	Q-25	5K1.BF01	CAMCORP	4"-7"
006	Q-26	5K1.BF02	CAMCORP	4"-7"
006	Q-14	6D1.BF01	CAMCORP	4"-7"
006	Q-17	6D2.BF01	CAMCORP	4"-7"
006	R-12A	6G1.BF01	CAMCORP	4"-7"

For the EU 003 Main Baghouse, the response also needs to address the secondary indicator of change in duct opacity as measured by the continuous emissions monitoring (COMS) system. The proposed indicator range of "any sudden and sustained step-change (increase) in opacity documented by the trend of the 6-minute averages seems too vague and imprecise to be practical for the plant operators, or verifiable/reviewable for the Department. More specific levels/time periods should be established and justified based on analysis of available COMS data during testing periods and normal operation of the plant.

- The COMS data is captured in the DAS from which 6-minute averages are continuously and historically reported. The Visible Emission limit is 10% opacity for a 6-minute averaging period. The CAM Plan will be implemented for the Main Baghouse when there are five (5) consecutive 6-minute averaging periods of Opacity above 5%.

ATTACHMENT 9
D/F TEST REPORT SUBMISSION

D/F Test Report Submission

8. D/F Compliance/Performance Testing - D/F compliance/performance testing using coke and tires as supplemental fuel was conducted beginning on September 15, 2010. In accordance with Rule 62-297.310(8), F.A.C., test reports are required to be submitted no later than 45 days after the completion of testing. Prior to issuance of an Intent to Issue and Draft Title V operation permit, the Department must receive compliance test report showing compliance with the D/F standard, using these supplemental fuels, in both the raw mill on and raw mill off operating modes. The permit application will be considered incomplete until such test report is received. Please submit a schedule for submittal of the required compliance test report.

- The report was submitted on October 25, 2010.

Charles Robertson

From: Charles Robertson [crobertson@americancementcompany.com]
Sent: Monday, October 25, 2010 4:36 PM
To: 'Danielle Osbrach'
Subject: RE: Thank you for delivering reports

Danielle:

Thank you for all your help.

Charlie

From: Danielle Osbrach [mailto:dosbrach@americancementcompany.com]
Sent: Monday, October 25, 2010 4:31 PM
To: Charles Robertson
Subject: Re: Thank you for delivering reports

All done. They stamped the received date and Rhonda will be giving it to Danielle.

Thanks,

Danielle Osbrach

On Oct 25, 2010, at 2:52 PM, "Charles Robertson" <crobertson@americancementcompany.com> wrote:

> Danielle:
>
> Ms. Henry's telephone number is
>
> 813-632-7600 x-104
>
> Thank you,
>
> Charlie
>
> **From:** Danielle Osbrach [mailto:dosbrach@americancementcompany.com]
> **Sent:** Monday, October 25, 2010 2:48 PM
> **To:** 'Charles Robertson'
> **Subject:** RE: Thank you for delivering reports
>
> Do you happen to have Danielle's phone number just in case I have any trouble when I get down there?
>
> **From:** Charles Robertson [mailto:crobertson@americancementcompany.com]
> **Sent:** Monday, October 25, 2010 12:22 PM
> **To:** 'Danielle Osbrach'
> **Subject:** Thank you for delivering reports
>
> Danielle:

Two (2) of the reports go to FDEP, Danielle Henry, or may be best to ask for Rhonda Hughes.

Two (2) of the reports are for ACC files.

Thank you making this delivery to FDEP.

Charlie

ATTACHMENT 10
O&M PLAN REVISION

O&M Plan Revision

...review of the O&M Plan based on the amended Subpart LLL requirements in 40 CFR 63.1347 and 63.1350(f) also finds that the plan is inadequate in addressing the following:

1. The requirements of 63.1347(a)(1) state that the O&M Plan must include "Procedures for proper operation and maintenance of the affected source and air pollution control devices in order to meet the emission limits and operating limits of §§63.1343 through 63.1348". Procedures for operation and procedures for maintenance must be specified in the O&M Plan for each affected piece of process or emission control equipment. The O&M Plan as submitted does not include equipment specific operation and maintenance procedures as required.

2. The requirements of 63.1347 (a)(2) - "Corrective actions to be taken when required by paragraph §63.1350(f)(3)". 63.1350(f)(3) states:

"Corrective actions. If visible emissions are observed during any Method 22 visible emissions test conducted under paragraphs (f)(1) or (f)(2) of this section, you must initiate, within one-hour, the corrective actions specified in the site specific operating and maintenance plan provisions in §63.1347."

This requirement for corrective actions now applies to all affected process and control equipment, not just the raw mill or finish mill as was the case previously. The O&M plan must specify specific corrective actions for each affected piece of process or emission control equipment. The O&M Plan as submitted does not include equipment specific corrective actions as required.

40 CFR 63.1347(b) states - "Failure to comply with any provision of the operations and maintenance plan developed in accordance with this section is a violation of the standard." In order to determine if the O&M Plan is being complied with in accordance with this requirement, the plan must contain specific provisions for all affected equipment for operation and maintenance procedures, and for corrective actions in the case of excess opacity observations.

Please revise the O&M Plan to address the above deficiencies.

Revised O&M Plan are attached here.

American Cement Company, LLC

Sumterville, FL

Operation & Maintenance Plan

Revision date: December 2010

Section **Page No.**

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1.1. Plan Scope 4
1.2. Facility Description 4

2.0 Operation and Maintenance Plan 4
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2.2. Maintenance Procedures 5

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Attachments

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Attachment 2 – Monthly 10-Minute VE Inspection Report.....13

Attachment 3 – Daily 6-Minute VE Inspection Report.....15

Attachment 4 – Corrective Action Report.....17

Appendices

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Appendix 5 – Camcorp Maintenance Documentation.....32

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1.0 Introduction

1.1. Scope of Plan

This operation and maintenance plan ("Plan") has been prepared for compliance with the requirements of 40 CFR 63.1347 (a). Facilities that are subject to ***40 CFR 63 Subpart LLL***, which is the MACT Standard for Portland Cement Plants, must prepare and comply with a written operations and maintenance plan for affected sources. The MACT standards are industry specific USEPA emission control standards and the cement industry standards are referred to as PCMACT. The Plan covers the entire facility, cement plant and quarry. The raw materials from the quarry typically contain sufficient moisture to maintain visible emission compliance with material crushing and transfer and handling visible emission standards. *"Furthermore, the first conveyor transfer point subject to this subpart is the transfer point associated with the conveyor transferring material from the raw material storage to the raw mill, §63.1340 (c). Failure to comply with any provision of the operation and maintenance plan developed in accordance with paragraph (a) of this section shall be a violation of the standard", §63.1347 (b).*

1.2. Facility Description

This facility, which includes a Portland cement manufacturing plant and a surface mine, is owned and operated by American Cement Company, LLC (ACC).

The manufacture of Portland cement primarily involves the crushing, grinding, and blending of limestone, clays and other raw materials into a chemically proportioned mixture which is heated in a rotary kiln to extremely high temperatures to produce clinker nodules. The clinker is cooled and ground, with a small quantity of gypsum, to produce finished cement. ACC uses coal, whole scrap tires, diesel fuel and used oil as fuel sources for the kiln system. The primary/operating kiln fuel is pulverized coal. The air heater is fired with diesel fuel and used oil.

2.0 Operation & Maintenance Procedures

2.1. Operational Procedures

Facility operation shall be in accordance with the prescribed procedures of the equipment manufactures, suppliers and those typical for cement manufacturing facilities. The air pollution control devices are listed on the *APCD, Visible Emissions Tests and Corrective Actions* found as Attachment 1. The units included in this plan are incorporated into the plant equipment Management Plus preventative/predictive maintenance program. Equipment maintenance and inspections are scheduled and conducted routinely, throughout the year, in accordance with the PM program. Records of maintenance repair and inspection activities are captured in the work order section of the Maintenance Plus system. The equipment maintenance inspections will insure proper operation, and maintenance when needed, of all process and air pollution control

devices. Operations personnel will also routinely perform the required visible emissions inspection of the control devices that are not equipped with continuous opacity monitoring systems (COMS) and other affected sources.

The kiln system baghouse inlet temperature will be monitored according to § 63.1350 (4) (g). The continuous temperature monitors shall meet the requirements of 63.1350 (g)(1) through (g)(5) and monitor the 180 minute rolling average temperature. This thermocouple will be changed out on a quarterly basis using manufacturer calibrated thermocouples, or a thermocouple certified by a lab to NIST standards.

The kiln system baghouse exhaust is monitored by a continuous emission monitoring system, (CEMS) and continuous opacity monitoring system (COMS). The CEMS and COMS record and tabulate emissions and monitoring data which is reported to the regulatory agency as required by the Title V permit. Reasonable precautions will be taken to minimize fugitive emissions throughout the facility. All employees are trained and encouraged to be aware of fugitive sources of emissions, report them and to follow-up with corrective action measures as soon as practical; to abate the emissions.

2.2. Maintenance Procedures

An inspection and preventive maintenance (PM) program is established for all emission control units in the Manager Plus work order program. The periodic preventive maintenance protocols are located in Appendix 1, Preventive Maintenance) The preventive maintenance protocols are the established equipment inspection schedules, procedures implemented as a result of the ACC PM process and manufacturer's recommendations; wherein proper operation of process equipment and emission control devices is ensured via routine inspections and maintenance activities. Emission control device inspection include such items as inspection of air cleaning systems, checking the system for proper lubrication, damper or flop gate operation, cleaning cycles, dust removal and pressure drop indications. In addition to, routine preventive maintenance inspections, production personnel will conduct daily VE inspections, Method 22, on the dust collectors for the finish mill and finish mill separator and monthly Method 22 observations will be conducted for all other dust collectors, except the main baghouse which is monitored by a COMS; with a reduced frequency as provided in 40 CFR 63 Subpart LLL. Process dust collectors, in most cases, are interlocked with process they control and typically will start up prior to or as the process is started and to run a sufficient amount of time after process shut down or feed is discontinued. The process control system software is Polcid, a software package designed by Polysius; who designed the facility and provided all of the major process components. This software package provides the feed back from I/O points throughout the plant and these inputs provide information needed for process optimization to minimize process upsets and/or failures.

The plant maintains a supply of critical and consumable replacement spare parts for process equipment dust collectors; in operating inventory. Dust collector bags are included as spare parts.

Appendix 5 contains maintenance information for Camcorp, Donaldson, and Redecam baghouses. This information is specific to each manufacturer of baghouse used at this facility.

In accordance with 40 CFR 63.1350 (3), ACC will conduct an annual inspection of the combustion system components of the kiln and air heater system. The checklists located in Appendix 2, or similar documentation, will be utilized as a record of the annual combustion system inspection.

3.0 Visible Emission Monitoring Procedures

3.1. Monthly Visible Emission Monitoring

Once per calendar month visible emissions tests, Method 22, will be conducted on the required APCD shown in Attachment 1. Testing will be conducted during daylight hours with the source in normal operation. These reports shall be maintained on file for a minimum of five years. Monitoring frequency will reduced as provided in *§63.1350 (a) (1), (ii), (iii) and (iv).*

See Attachment 2 for the *Monthly 10-Minute VE Inspection Report* which lists the APCD meeting this requirement. Appendix 3 contains the Camcorp and Donaldson Initial Response Directives to follow in case of a positive Method 22 test result. The results of each month's observations are recorded on a *Monthly 10-Minute VE Inspection Report* form. In accordance with the provision of the permit, the frequency of monitoring will be reduced as applicable to the successive negative (no visible emissions) monitoring events recorded for each source.

If a source has no visible emission, using Method 22, for six (6) consecutive months the testing frequency may be reduced from monthly to semi-annually. If no visible emissions are observed during the semi-annual observations; testing may be decreased to annually. A positive VE on any source requiring Method 22 observation will return that source to monthly observations requirements 40 CFR § 63.1350 (a) (1) (i).

3.2. Daily Visible Emission Monitoring

See Attachment 3 for the *Daily 6-Minute VE Inspection Report* which lists the Finish Mill APCD meeting this requirement. Appendix 4 contains the Camcorp Initial Response Directives to follow in case of a positive Method 22 test result. The results of each month's observations are recorded on a *Daily 6-Minute VE Emissions Report* form.

3.3 Visible Emission Observation

The opacity/visible emission (VE) allowable for all baghouses, other than the main baghouse, is five (5) percent. Opacity is essentially a measurement or indication of the amount of light obscured/scattered by particles in the exit gas stream and in the case of an observer, the amount of background obscured by the particles. The measurement of opacity is either made by an in stack-monitoring device or by the unaided human eye, for baghouse opacity determinations it will be the latter, except for the kiln system baghouses. Opacity is measured over a range of zero (0) to one hundred (100) percent. A certified observer can make opacity determinations over a wide percentage range. However, observations in the ten (10) percent and below range can be very subjective. Furthermore, when observing opacity in the lower, <10%, ranges; factors such as sunlight, background color, and the position of the observer relative to the source can greatly bias the results.

A baghouse system will usually lack sufficient moisture/water vapor to cause a steam/condensate plume, except for finish mill and the kiln system baghouse, when the correct atmospheric conditions exist. Otherwise a baghouse should have virtually no visible emissions (VE) from the discharge point. However, even with low moisture in a hot stack gas, there can be a detached steam plume during ambient conditions of cold temperature and sufficient humidity. Otherwise, the baghouse discharge will remain clear (no VE) unless there is a failure in the filter medium resulting in a leak between the clean and dirty sides of the unit. When there is a steam plume present the opacity, if any, should be read at a point after the steam has dissipated. With a detached plume, steam forms beyond the discharge point, if sufficient space is available between the discharge point and the steam plum you may read opacity at the point of discharge.

Compliance of a point source with an opacity standard is determined by Method 9 observation or a COMS; averaging readings over a six minute observation period. In the case of a Method 9 observation, a 30 minute or 60 minute observation period will allow the observer to detect potential changes in opacity due to process variations and/or bag cleaning events; particularly for pulse-jet baghouses. It is not out of the ordinary to see an increase in opacity after a cleaning event takes place even with the system in good condition. However, this increase sometimes may not be perceptible by an observer. Method 22 is used only to establish the presence of visible emissions, not the percent of opacity.

Method 22 is used only to determine the presence of visible emissions and not the percent opacity, therefore; observer certification is not required to conduct the Method 22 observations. An employee familiar with the process, the principles of baghouse operation and the Method 22 procedure can perform the observation. Prior to beginning the Method 22 observation, verify that the source to be observed is in operation; under normal conditions. As soon as possible after determining that the source is operating normally, begin conducting the 10-minute or 6-minute Method 22's.

The observer should position themselves a minimum of fifteen (15) feet from the emission point, when practical, and where the sun is not directly in the eyes of the observer and preferably within a 140 sector of the observers back when they is facing the emission point. It is best if the observer is perpendicular to the plume. Where this is not practical, keep the line of sight angle to 45 degrees or less. Read one plume at a time and do not attempt to read a plume through another plume or dust from other sources. Once in position, fill out the observation form and note the start time and then observe the emission point continuously for required period of time, 10-minute or 6-minutes, and note the end time of the observation. If there is break in the observation period, note the time of the break and a new start time when the observation starts again to complete the observation period, 10-minute or 6-minute. At the end of the observation, the observer will verify that all sources observed operated continuously during the observation period. If any of the sources stopped or shut down operation during the observation period, another Method 22 must be completed for the source after it re-starts. For operating purposes, if a unit operates for any portion of a day it is considered an operating day and the daily observation must be completed for the unit. The required VE observations must take place if the source operates for any portion of a day. You should try to get the observation completed as early in the operating day as possible; after sun rise. *No observations for Method 22 or Method 9 may be conducted during the nighttime hours.* The requirements for conducting the monthly 10-minute Method 22's does not apply to a "totally enclosed" conveying system transfer point. A totally enclosed transfer point is defined as *"a conveying system transfer point that is enclosed on all sides, top, and bottom"*.

4.0 Corrective Action Procedures

4.1. Corrective Action

If visible emissions are observed during an inspection, the Corrective Action Log found as Attachment 4 shall be completed to document corrective actions; as needed to supplement the VE inspection forms. Any work orders resulting from the corrective action should be attached to the corrective action log and both should be submitted to the Environmental manager. The Corrective Action Log should be completed each time corrective action takes place.

4.2. Corrective Action Procedures

As mentioned in **Section 3.1 Monthly Visible Emission Monitoring** corrective actions are found in Appendix 3 and **Section 3.2 Daily Visible Emission Monitoring** the corrective action procedures are found in Appendix 4.

5.0 Plan Implementation

5.1. Implementation

This plan, as required by the Title V permit that incorporates 40 CFR 63 Subpart LLL, will be used to insure compliance with the relevant terms and condition of the permit. The plan must be submitted to the Administrator for approval. Prior to submitting the plan to the Administrator, the plan may be revised without the Administrator's review. If revised after submittal to the Administrator, the revised edition must be submitted to the administrator for review and approval.

If any part of this plan is found to be ineffective, inadequate or unnecessary, the plan may be modified. After any revision that makes changes to procedures or is required by process changes or practices; a revised plan may be submitted to the administrator for approval. If the Administrator approves the revised plan or takes no action within 90 days, ACC may implement the revised plan. Revisions will be documented in Table 5-1.

Table 5-1
American Cement Company, LLC, Sumterville, FL
Operations and Maintenance Plan
Revision Log

Revision Date	Section (s) Revised	Revised by Name / Title	Submitted to Agency
December 28, 2010	All	C. L. Robertson / Environmental Manager	FDEP, Southwest District

Attachment 1

Air Pollution Control Device

Visible Emissions Tests

Corrective Actions

American Cement Company, LLC - Sumterville Cement Plany
APCD, Visible Emission Tests and Corrective Actions
Attachment 1

Emission Units	Process or Equipment	Process	Title V Control Device Number	ACC Control Device Equipment ID No.	Required Visible Emissions Observation	Opacity Limit	Corrective Action Procedure
EU-002	Raw Mill	Raw Mill	Main Baghouse	4E1.PB01	COMS	<10%	CAM
		Raw Meal Airslide/Aeropol	F-10	3J1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
	Blending Silo	Homogenizing Silo - Top	G-07	3K1.BF02	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Kiln Feed Mixing Chamber	G-10	3K1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Kiln Feed Airslide/Aeropole	H-08	4C1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
EU-003	Kiln System	Kiln	Main Baghouse	4E1.PB01	COMS	<10%	CAM
		Top of Kiln Baghouse Dust Bin	E-38	4E1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
EU-004	Clinker Transport & Storage	Clinker Cooler	Main Baghouse	4E1.PB01	COMS	<10%	CAM
		Cooler Discharge @ Conveyor	L-03	4T1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Clinker Silo No. 1 - Top	L-06	4T1.BF02	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Clinker Silo No. 2 - Top	M-08	4T1.BF03	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Clinker Silo Tunnel No. 1	DC-1	5E1.BF01	Monthly 10 - minute	<5%	DONALDSON 10-Min VE Response
		Clinker Silo Tunnel No. 2	DC-2	5E1.BF02	Monthly 10 - minute	<5%	DONALDSON 10-Min VE Response
EU-005	Finish Mill	Finish Mill	N-94	5F1.PB01	Daily 6 - minute	<5%	CAMCORP 6-Min VE Response
		Finish Mill Separator	N-93	5F1.PB02	Daily 6 - minute	<5%	CAMCORP 6-Min VE Response
EU-006	Cement Handling, Storage & Packing	Finish Mill Cement Handling	N-91	5F1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Cement Silos No. 1,2,3,5	Q-25	5K1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Masonry Cement Silo No. 4	Q-26	5K1.BF02	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
	Bulk Truck Loading	Truck Loadout - (1) East	Q-17	6D2.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Truck Loadout - (2) West	Q-14	6D2.BF02	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
	Packing	Packhouse	R-12A	6G.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
EU-007	Coal / Coke Grinding	Fine Coal/Pet. Coke Transport	S-26	CV1.BF01	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Coal/Pet. Coke Grinding No. 1	S-22A	CR1.SF07	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response
		Coal/Pet. Coke Grinding No. 2	S-22B	CR1.SF08	Monthly 10 - minute	<5%	CAMCORP 10-Min VE Response

Attachment 2

Monthly 10-Minute VE Inspection Report

American Cement Company, LLC - Sumterville Cement Plant
Monthly 10-Minute VE Inspection Report
Attachment 2

Title V Air Quality Permit No.: 1190042-006-AC		Date:				10 - Minute Visible Emission Observations								
	Emission Point ID No.	Normal Operation		Military Time		Wind		10 - Minute Method 22 Observation			Sky Conditions			
Baghouse Location		Yes	NO	Start	Stop	Speed	Dir.	POS	NEG	DN	CL	PC	OC	Comments or Work Order #
Finish Mill Cement Handling (EP-N91)	5F1.BF01													
Masonry Silo No. 4 (North) (EP-Q25)	5K1.BF01													
Cement Silo No. 1,2,3,5 (South) (EP-Q26)	5K1.BF02													
Truck Loadout - (1) (West) (EP-Q14)	6D2.BF01					N/A	N/A				N/A	N/A	N/A	
Truck Loadout - (2) (East) (EP-Q17)	6D2.BF02					N/A	N/A				N/A	N/A	N/A	
Cement Packing - (EP-R12-A)	6G1.BF01													
Coal/PetCoke Mill (S-22A & S-22B)	CR1.PB01													
Coal/PetCoke Bin (S-26)	CV1.BF01													
Clinker Cooler (L-03)	4T1.BF01													
Clinker Silo #1 (L-06)	4T1.BF02													
Clinker Silo #2 (M-08)	4T1.BF03													
Clinker Silo #1 Discharge	5E1.BF01					N/A	N/A				N/A	N/A	N/A	
Clinker Silo #2 Discharge	5E1.BF02					N/A	N/A				N/A	N/A	N/A	
Raw Meal to Silo (West) (F-10)	3J1.BF01													
Top of Homogenizing Silo (G-07)	3K1.BF02													
Homogenizing Silo Bin Vents (G-10)	3K1.BF01													
Raw Meal from Silo (H-08)	4C1.BF01													
Filter Dust Surge Bin (E-38)	4E1.BF01													

Operating Condition: If "No" is checked, explain in comments

Observations: POS - Positive NEG - Negative DN - Operation Down

Comments:

Print Name	Signature	Date Completed

Attachment 3

Daily 6-Minute VE Inspection Report

American Cement Company, LLC, Sumterville, FL
Daily 6-Minute Visible Emissions Inspection
Attachment 3

Title V Air Quality Permit No.:
1190042-006-AC

Permit Condition: E9

Equipment	ID No.	Normal Operation		Observer's Name (Print)	Date	Military Time		Time	Observations			Work Order #
		Yes	**No**			Start	Stop	Min.	POS	NEG	DN	
Finish Mill Dust Collector EP-N94	5F1.PB01							6				
Finish Mill Separator Dust Collector EP-N93	5F1.PB02							6				

Comments:

For "Operating Conditions" and "Observations" place a check or slash in the appropriate column
Operating Condition: If "No" is checked, explain in comments **Observations: POS - Positive NEG - Negative DN - Operation Down**

The source shall be observed for **six minutes *continuously*. An observation time period must be indicated for all operating equipment.**

If dusting conditions (Positive) are noted, corrective action must be initiated within one-hour of the time that the dusting was noted. Record work order number and document corrective action taken in comment section

If dusting conditions are noted for two consecutive days, contact Production Coordinator to conduct a 30 minute Method 9 observation on the second day. A copy of the Method 9 form must be attached to the second day's report. If the results of the Method 9 test is less than 5%, resume normal VE schedule. If the result of the Method is greater than 5%, continue corrective actions.

Observer: _____
Print Name

_____
Signature

Attachment 4

Corrective Action Report

Corrective Action

Attachment 4

Date and Time Corrective Action Initiated	Equipment Number	Work Order Number *	Describe Corrective Action Taken

** - If no work order required, please indicate*

* A trained observer can conduct Method 22 Test. Smoke School Certified reader must conducts Method 9 Test. Attach completed visible emissions observation (VEO) form. Return report/forms to Envon. Mgr. ***All Entries Must be in Ink.***

Appendix 1

Preventive Maintenance Protocols

DAILY PREVENTIVE MAINTENANCE OF BAGHOUSES

The daily preventive maintenance functions are conducted by Production Personnel during their completion of the Daily Production System Checklist.

Each checklist contains the following baghouse inspection items:

- Magnehelic Reading _____ (4 w.c. to 7 w.c.)
- Air Pressure _____ (80 to 90 psi)
- Check for leaky diaphragms_____ (work order if problem found)
- Pulse off time_____ (seconds)
- Pulse on time_____ (fraction of second)
- Tipping Valves or Rotary Valves Operable_____ (work order if problem found)

Adjustments are made or a maintenance work order is written to address any problem found during the inspection.

MONTHLY PREVENTIVE MAINTENANCE OF BAGHOUSES

The monthly preventive maintenance functions are conducted by Production Personnel

Weekly functions:

- Drain moisture trap.
- Check magnehelic lines for plugging.

A maintenance work order is written to address any problem found.

ANNUAL PREVENTIVE MAINTENANCE OF BAGHOUSES

The annual preventive maintenance functions are conducted by Maintenance Personnel:

Annual inspection items:

- Open top of baghouse and inspect clean air chamber for:
  - Signs of bags leaking.
  - Inspect tubesheet for holes, cracks, deformation.
  - Corrosion in corners or sheetmetal connections.

- Open hopper to inspect for:
  - Material build-up.
  - Grizzly plugging.
  - Baffle wear.
  - Holes or tears in lower end of bags.
  - Inlet duct cleanliness.
  - Corrosion in corners or sheetmetal connections.

- Open Tipping Valves or Rotary Valve to inspect for:
  - Wear or material build-up on tipping valve surface.
  - Wear of material build-up in rotary valve vanes
  - Deformation of rotary valve vanes.
  - Material build-up.
  - Grease bearings.
  - Leaks through seals.

- Inspect exterior of baghouse for:
  - Corrosion.
  - Holes in sheetmetal.
  - Air piping corrosion.
  - Air piping and manifold connection air leaks.

Any build-up of material found is cleared from system.
A maintenance work order is issued to address any mechanical problem found.

Appendix 2

Annual Inspection of Combustion Systems

Annual Air Heater inspection of the components of the combustion system

Fan/Duct:

- Inlet screen free of dirt and debris.
- Inlet cone clean and proper clearances.
- Vibration free

Windbox Inspection:

- Slide damper is not bound and moves freely.
- Register louvers are clean and move freely.
- Check actual movement of slide damper and register louver matches COEN "AC" fuel control valve movement. (See Linkage Inspection below.)

Flame Scanner:

- Scanner lens inspected and cleaned.
- Scanner is positioned to pick up both pilot and main flame.

Pilot:

- Inspect pilot assembly.

Oil Firing:

- Oil nozzle clean.
- Guide pipe in correct position for oil firing.
- No lickback (fire licking behind spinner/shield)

Linkage Inspection:

- Full travel of COEN "AC" fuel control valves.
    - Check actual movement of slide damper and register louver matches control valve movement. (See Windbox Inspection above.)
    - Verify 4 to 20mA output equals 0% to 100% travel
- All threaded connections of drive rods are tight. Locknuts inspected for tightness.
- Rod end bearings in good condition.
- All drive levers in proper position and tight on drive shaft. Levers pinned to prevent slippage.
- Lost motion in linkage at absolute minimum.

Annual Kiln inspection of the components of the combustion system

Burner:

- Check the mouthpiece and the components exposed to coal dust for wear.
- Calibration of indicating instruments.

Flame Monitor:

- System is failsafe and self monitoring if failure occurs.

Primary Air Fan:

- General inspection of the fan for looseness, build-up on blades.
- Condition of hose connection.
- Vibration free.

Beck Actuator:

- Check for full travel of the valve.
- Check valve connection for tightness.
- Verify 4 – 20mA equals 0% to 100% travel.
- Verify damper matches Beck Actuator movement.

Cooling Air Fan:

- General inspection of the fan for looseness, build-up on blades.
- Vibration free.

Cooling Air Fan Valve:

- Check for full travel of the valve.
- Check valve connection for tightness.
- Verify 4 – 20mA equals 0% to 100% travel.
- Verify damper matches valve movement.

Annual Kiln inspection of the components of the combustion system

Equipment #	Description	Task (s)
Burner		
4K1. BU01	Burner	Check the mouthpiece and the components exposed to coal dust for wear Calibration of indicating instruments
Burner		
4K1. BU01	Flame Monitor	Inspect for proper functioning
Burner		
4K1.BU01.FNP01	Primary Air Fan	General inspection on fan, check for looseness, build up, etc
Burner		
4K1. BU01	Beck Actuator	General inspection on valve to ensure correct operation
Burner		
4K1.BU01.FNC01	Cooling Air Fan	General inspection on fan, check for looseness, build up, etc
Burner		
4K1.BU01.TVJ01	Cooling Air Fan Valve	General inspection on valve to ensure correct operation

Appendix 3

Camcorp and Donaldson

10-Minute VE Initial Response

CAMCORP 10-MINUTE VE INITIAL RESPONSE

If visible emissions are observed during a 10-minute Method-22 visible emissions test, initiate within one-hour these specified initial corrective actions for a CAMCORP Baghouse.

While at the unit, immediately make the following determinations:

Step 1: Is the magnehelic reading between 4" w.c. and 7" w.c.?
Step 2: Is the back-blast system pulsing?
Step 3: Is the back-blast air pressure between 80 psi and 90 psi?
Step 4: Is the fan damper set between 50% and 75% fully open?
Step 5: Is the hopper empty of material?

Possible meaning of the answers:

If the magnehelic reading is below 4" w.c. the back-blast time between pulses may be too quick and need to be lengthened.

If the magnehelic reading is higher that 7" w.c. the back-blast time between pulses may be too long and need to be shortened.

If there is no back-blast pulsing sound the timer system may be faulty.

If the back-blast air pressure is lower than 80 psi then adjust the regulator into the proper range. The bags may be too dirty with dust permeating through the bags.

If the back-blast air pressure is higher than 90 psi then adjust the regulator into the proper range. The high pressure may be opening the fabric enough to allow dust to permeate through the bags.

If the fan damper is over 75% open there may be too much air flow through the baghouse revealed by a high magnehelic reading. Close the damper to 50% initially.

If nothing accomplished above stops the visible emissions then remove the hopper inspection door by following these instructions:

Step 1: Turn off the back-blaster system.
Step 2: Allow 1 to 2 minutes for any compressed air to bleed off.
Step 3: Carefully open the inspection door.
Step 4: Inspect the interior of the hopper for material build-up, and the grizzly being plugged with material. Clean out as necessary. Also look up towards the bags to see if any apparent holes of tears are evident.
Step 5: Replace the inspection door making sure there is a good seal. If no air suction sound is heard around the door the seal is good. Repair seal as necessary to achieve a good seal.

Perform a 30-minute Method-9 Visible Emission Test to determine the actual average opacity.

If the opacity is above 5%:

- Make a work order on the Manager Plus system for Maintenance to make further inspections and repairs as necessary.
- Complete an incident report for submission to FDEP.

DONALDSON 10-MINUTE VE INITIAL VE RESPONSE

If visible emissions are observed during a 10-minute Method-22 visible emissions test, initiate within one-hour these specified initial corrective actions for a Donaldson dust collector.

While at the unit, immediately make the following determinations:

Step 1: Is the magnehelic reading between 4" w.c. and 7" w.c.?
Step 2: Is the back-blast system pulsing?
Step 3: Is the back-blast air pressure between 80 psi and 90 psi?

Possible meaning of the answers:

If the magnehelic reading is below 4" w.c. the back-blast time between pulses may be too quick and need to be lengthened.

If the magnehelic reading is higher that 7" w.c. the back-blast time between pulses may be too long and need to be shortened.

If there is no back-blast pulsing sound the timer system may be faulty.

If the back-blast air pressure is lower than 80 psi then adjust the regulator into the proper range. The bags may be too dirty with dust permeating through the bags.

If the back-blast air pressure is higher than 90 psi then adjust the regulator into the proper range. The high pressure may be opening the fabric enough to allow dust to permeate through the bags.

Perform a 30-minute Metod-9 visible emission test to determine the actual average opacity.

If the opacity is above 5%:

- Make a work order on the Manager Plus system for Maintenance to make further inspections and repairs as necessary.
- Complete an incident report for submission to FDEP.

Appendix 4

Finish Mill 6-Minute Initial Response

CAMCORP FINISH MILL 6-MINUTE VE INITIAL RESPONSE

If visible emissions are observed during a 6-minute Method-22 visible emissions test, initiate within one-hour these specified initial corrective actions for a CAMCORP Baghouse.

Make the following determinations:

Step 1: Is the magnehelic reading between 3" w.c. and 5" w.c.?
Step 2: Is the back-blast system pulsing?
Step 3: Is the back-blast air pressure between 80 psi and 90 psi?

Possible meaning of the answers:

If the magnehelic reading is below 3" w.c. the back-blast time between pulses may be too quick and need to be lengthened.

If the magnehelic reading is higher that 5" w.c. the back-blast time between pulses may be too long and need to be shortened.

If there is no back-blast pulsing sound the timer system may be faulty.

If the back-blast air pressure is lower than 80 psi then adjust the regulator into the proper range. The bags may be too dirty with dust permeating through the bags.

If the back-blast air pressure is higher than 90 psi then adjust the regulator into the proper range. The high pressure may be opening the fabric enough to allow dust to permeate through the bags.

Within 24-hours of the initial positive Method-22 visible emission test result perform a follow-up test.

If the Method-22 visible emission test is positive during the follow-up test then within 1-hour of the positive result perform a 30-minute Method-9 Visible Emission Test to determine the actual average opacity.

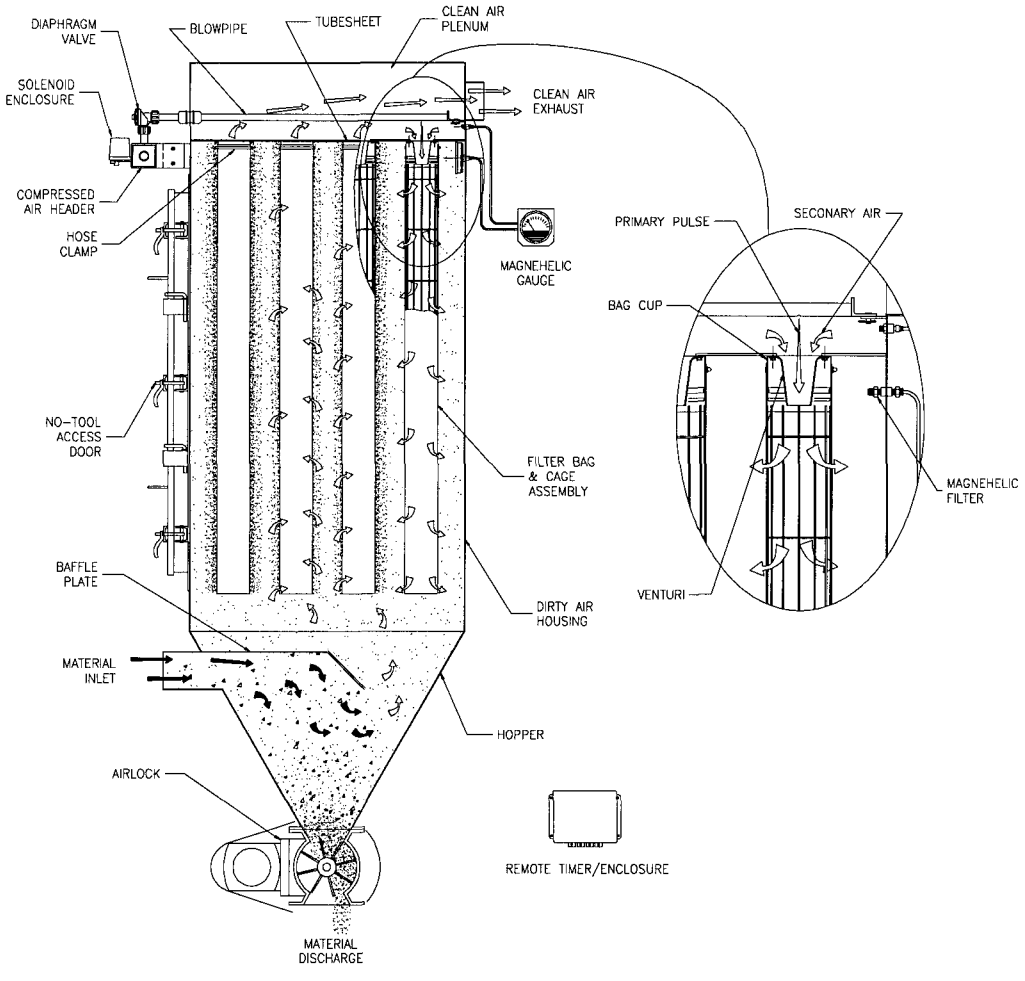
If the opacity average is above 5%:

- Make a work order on the Manager Plus system for Maintenance to make further inspections and repairs as necessary.
- Complete an incident report for submission to FDEP.

Appendix 5

CAMCORP MAINTENANCE DOCUMENTATION

Operation Camcorp Baghouse



Operating Principle

A. Solids laden air or gases enter the unit at the hopper or housing inlet.
B. Air passes through the filter media.
C. Solids are retained on the filter media surface.
D. Cleaning cycle consists of a momentary blast of 90-100 psig compressed air:
    1. Momentarily taking a row of bags off stream through pressure reversal.
    2. Flexing filter bags.
    3. Solids are released to fall towards hopper and through rotary valve or other discharge equipment.

Troubleshooting Camcorp Baghouses

Excessive Pressure Drop Across Filter Bags

The differential pressure gauge (Magnehelic) on your baghouse should read 7" w.g. or less. Higher readings and/or steadily increasing readings are an indication that the main airflow through the dust collector may be restricted and a potential process problem such as poor suction at duct pickup points may exist. In extreme cases (over 17" w.g.) filter bags will be damaged. Check the following:

Pressure Gauge
Check the differential pressure gauge (Magnehelic) and the tubing leading to the dust collector for proper operation. Disconnect the lines at the gauge or manometer and clear with compressed air. Look for loose fittings, cracked, broken or pinched tubing.

Compressed Air System
Inspect the compressed air system as follows to make sure that all of the filter bags are being cleaned:

If none of the solenoid valves are operating check the timer using the "Troubleshooting the Timer" section.

Check the air pressure at the compressed air manifold. It should recover to 80-90 psig before each pulse. If not, check to make sure that the compressed air supply system is in good operating condition, correctly sized, and supply lines are not too small or restricted. Listen for the sound of compressed air flowing continuously through one or more diaphragm valves. This is an indication of a valve or valves "stuck" in the pulsing position. The usual causes for this condition are either a leak in the tubing between the solenoid and diaphragm valves or dirt in the solenoid and/or diaphragm valves.

Check to see that all solenoid valves are firing by holding a finger over each solenoid exhaust port as described in the following paragraph.

With the compressed air system operating, energize the timer board to begin pulsing. Check to see that all solenoids are firing by placing a finger over the exhaust port of one of the solenoid valves. When the solenoid valve being checked is energized by an electrical pulse from the timer board the finger at the exhaust port should feel a short blast of air. Quickly move to the next solenoid valve in the firing order noting any valves that do not fire or are stuck open causing a continuous airflow out

of the exhaust port of the valve. At this time note the quality of the compressed air. It should be clean, dry, and oil free.

Bags Loaded with Dust

This is a condition known as blinding. If the dust is dry see the next four paragraphs below. If the dust is wet see the paragraphs below on "Water Leaks" and "Condensation".

1. Dust Not Discharging from the Hopper
Check hopper for over-loading or bridging across the dust discharge. To open the hopper turn off the back blasting system, and open the hopper door slowly. Correct by clearing material from hopper and cleaning "grizzly" for free flow of material out of hopper. To close hopper carefully replace door making sure the seal is good. If air suction is heard reset the door or check gasket and repair as necessary to assure a good seal. Turn on the back blasting system.

2. Air Flow Too High
If the main airflow is too high to allow dust to drop off of the filter bags, an excessive pressure drop across the dust collector will result and dust will build up in the system. In many cases this high pressure drop in turn leads to a reduction in the main air flow so that it is necessary to remove the dust accumulation from the filter bags (and the rest of the system) before measuring the main air flow volume.

Visually inspect the bags for heavy caking. See notes above on proper opening of discharge hopper for inspection. If caking is evident see the note below and take the necessary action to clean the bags. Next, measure the main airflow with a pitot tube or equivalent device and compare with the original volume for which the unit was designed. If the flow is too high, cut back the main fan to prevent a recurrence of the problem.

3. Particle Size and Dust Load
If possible, compare the dust particle size and loading with the original design specifications. Finer dust may cause a higher pressure drop. High free lime 2.1+ will cause finer dust particles so call the lab to determine the free lime results to determine if this is a factor with high pressure drop.

4. Bags Too Tight
Bags that have shrunk on their cages may not flex sufficiently during the compressed air pulse to loosen caked dust. If the bags were cleaned or laundered pull a bag tight around its cage. You should be able to "gather" a small fold of material between your fingers.

Water Leaks
Inspect the dust collector housing and ductwork for holes, cracks or loose gasketing where water could enter the collector.

Condensation
If moisture has been condensing inside the collector check the dew point temperature of the incoming air stream. It may be necessary to insulate the collector and/or the ductwork leading to the collector to keep surface temperatures above the dew point and prevent condensation inside the dust collector.

NOTE: Collectors that have blinded bags can possibly be put into service by running the pulsing air system for 15 to 30 minutes with a 10 second "off time" and without the main fan or blower running. If the pressure drop is not lower when the main fan is started again remove the filter bags from the collector and replace. Make sure the timer "off time" has been reset to specifications prior to re-start. Information pertaining to filter bag cleaning may be obtained by calling your CAMCORP sales representative.

Extremely Low Pressure Drop

Differential Pressure Gauge
Check the differential pressure gauge or manometer and the tubing leading to the dust collector.

Holes in Filter Bags or Bags Incorrectly Installed
Inspect the filter bags for holes, rips, tears or excessive wear. Assure that the filter bags were installed correctly according to the "Bag & Cage Installation" section.

Ductwork and Dampers
Inspect the ductwork to and from the dust collector for air leaks or blockage. Assure that any dampers in the system are correctly positioned to allow for proper air flow through the dust collector.

Leaks in the Housing
Check the tube sheet (flat steel sheets from which the filter bags are suspended) and the dust collector housing for holes, cracks or loose gasketing that would permit air to bypass the dust collector or filter bags.

Continuous Flow of Dust in the Clean Air Exhaust (Primary Dusting)

Holes in the tube sheets
Check the tube sheet for holes, cracks or loose bolts that would permit dusty air to bypass the filter bags.

Puff of dust in the clean air exhaust after each pulse (Secondary Dusting)

Compressed air manifold pressure too high
Check compressed air manifold pressure gauge. If the pulsing air pressure is over 90 psig the filter bags may flex excessively and allow fine dust to pass through the bag material.

Worn filter bags
Inspect the filter bags for wear. Thin worn bags may not stop fine dust when flexed by a compressed air pulse.

Residual dust
If dust has migrated into the clean air plenum because of a dropped filter bag, torn filter bag or a hole in tube sheet, etc., the pulsing air may stir up the dust and allow it to escape into the clean air exhaust after each pulse. Residual dust may also be driven down inside the filter bags by the pulsing air. If the filter bags are filled with several inches of dust clean both the clean air plenum and the filter bags to avoid further problems.

APPENDIX 6

DONALDSON MAINTENANCE

DOCUMENTATION

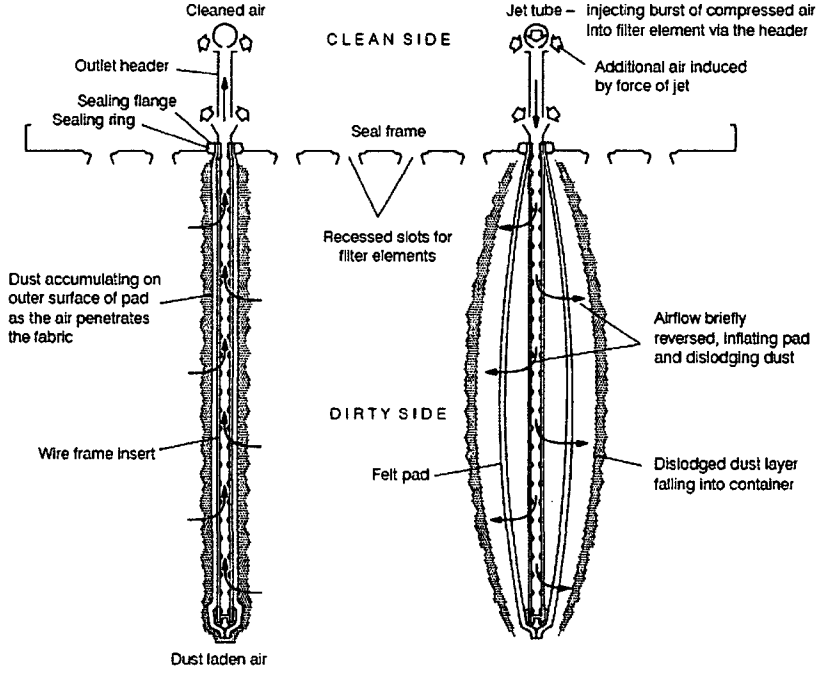
OPERATION

Principle of operation

Dust-laden air is ducted into the chamber containing the filter elements, where it impinges on all their outer surfaces. A layer of dust builds up on the outside of the elements as the air itself penetrates the fabric (see Fig. 14a). The clean air emerges from the outlet header of each filter element into the cleaned air chamber and from there it is discharged, normally via the fan, to atmosphere.

At regular intervals, governed by the controller, each element in turn receives a short burst of compressed air from its respective jet tube (see Fig. 14b). The jet tube has a series of small-diameter jet orifices positioned adjacent to the outlet header of each filter element (see Figs. 14 and 17). These orifices are of an optimum size and distance from the filter element, ensuring that a large volume of air is induced by each injection of compressed air. This causes a brief, powerful reversal of airflow through the filter element, flexing the fabric outwards and effectively dislodging the dust layer.

In this way the pressure drop across the whole filter is kept at a virtually constant level, enabling the Dalamatic to operate continuously, twenty-four hours a day.



a Filtering operation *(continuous)* **b** Cleaning operation *(intermittent)*

Figure 14 Section through seal frame and two filter elements, showing principle of operation

MAINTENANCE

A platform should be used when carrying out maintenance where the position of the technician's feet is greater or equal to 2 metres above ground level.

Always isolate the electrical supply before servicing.

Routine Inspection

To maintain the optimum performance of any Dalamatic filter, a routine inspection should be made to minimise down-time in the event of equipment malfunction, particularly on continuous performance applications and to ensure the equipment is maintained to its original supply condition.

Any abnormal change in pressure absorbed across the filter elements indicates a change in operating conditions and a fault to be rectified. For example, a prolonged stoppage of compressed air will cause an excessive build-up of dust on the elements, resulting in a greatly increased pressure drop.

After the fault has been rectified, resumption of compressed air cleaning will usually return the filter to normal efficiency. However, it is advisable to operate the controller in still-air conditions for a short period to dislodge any accumulated dust before putting the Dalamatic filter into operation.

Filter resistance can be checked by connecting a U-tube manometer or differential-type pressure gauge to tapping points on the filter body and equipment being served (see Fig. 1). This will give a continuous indication of the state of the filter. Once running, the operating resistance will be relatively stable, the actual value depending on the air volume and the characteristics of the dust being handled.

To fit manometer connection to tapping point position, remove hexagon head set screw, nut and washers which blank-off tapping point hole located in base side panel. If exit header is fitted, access may be gained by removing the header cover. Fit a suitable manometer connection in place of the hexagon head set screw etc., ensuring it is capped when not in use. If requested, Donaldson can supply the recommended parts to enable connection to measuring equipment.

It is recommended to periodically inspect the general casing integrity.

Do not operate above recommended compressed air pressure. Excessive pressure will reduce the working life of components.

Dalamatic housings or upstands fitted with explosion relief should be inspected weekly to ensure that the bursting panels are intact and clear of obstruction. During winter, particular care must be taken to prevent build-up of snow or ice on explosion panels.

MAINTENANCE

Servicing schedule

A record of all pressure checks should be kept in a log book to aid the speedy diagnosis of faulty operation.

Weekly

1 Open the valve at the bottom of the moisture separator bowl and allow the collected water to drain off, then close the valve.

2 Connect a manometer to tapping points (refer to Routine inspection) and measure the pressure drop across the filter.

Monthly

Check operation of solenoid and diaphragm valves. If it is found necessary to replace a diaphragm, use the following procedure (see Fig. 15):

Use service kit available from Donaldson.

1 Remove 6mm diameter nylon tube (A) by pulling out from valve.

2 Remove the hexagon head set screws and shakeproof washers securing the valve bonnet (B).

3 The diaphragm and spring (if fitted) can now be replaced, first ensuring the 'bleed' hole pin is not blocked.

4 Ensure that diaphragm fits over 'bleed' hole pin and that the nylon sealing washer is inside throat of valve.

5 Position spring (if fitted) inside bonnet recess.

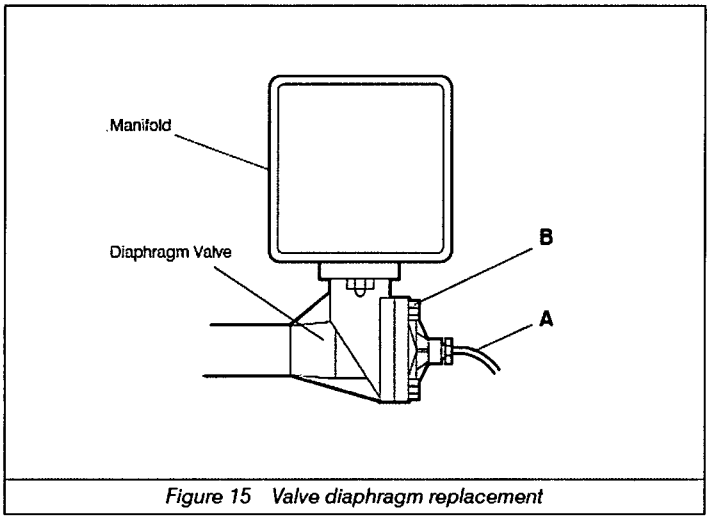


Figure 15 Valve diaphragm replacement

MAINTENANCE

6 Refit bonnet ensuring spring (if fitted) locates over diaphragm disc shoulder and bonnet locates over 'bleed' hole pin.

7 Refit and tighten the hexagonal head set screws and shakeproof washers.

8 Push-fit 6mm diameter nylon tube back into valve.

Annually

1 Moisture separator – Isolate the compressed air supply; remove and clean the filter element.

2 Air manifold – Having isolated the compressed air supply, remove the drain plug and air inlet connections and clean out any accumulated sludge and inspect to any current local legislation.

It may be necessary to remove a diaphragm valve for internal inspection purposes.

3 Doors – Check the dust seals on all access doors for damage or ageing and ensure that they are properly seated to prevent entry of water. This is particularly important where the filter is located outside or in a wet atmosphere.

Faulty seals must be replaced.

4 Filter elements (inserts and pads) – Remove the jet tubes then remove each filter element and check the general condition of the pad. Clean each pad using a vacuum cleaner. If the dust is of an abrasive nature it is advisable to examine the elements more frequently.

Pads showing holes must be replaced.

When refitting filter elements, do not over-tighten. If elements are horizontally mounted, tighten bottom clamp first. (Recommended maximum torque 20 ft-lbs f or 27 Nm.)

5 Jet Tubes – Check that the jet tubes are clean and that the jet orifices are clear.

6 Flameproof maintenance – It is important that all flameproof enclosures, motors and cable glands are inspected for corrosion and tightness on an annual basis.

In particularly aggressive environments, this period should be more frequent.

MAINTENANCE

TABLE 1 — FAULT LOCATION

Symptom	Possible cause	Action
1 Part loss of suction (excessive pressure differential).	1.1 Compressed air malfunction.	a If compressor stopped, rectify compressor fault; check interlocks; check motor and supply; check drive. b If compressor OK, check pulses at manifold pressure gauge. c Clean filters, dismantle and clean moisture separator. d Check for excessive water or oil in compressed air supply, and possible accumulation in manifold.
	1.2 No pulses of air to valves.	a Refer to 'Fault location' table in controller manual supplied with dust collector.
	1.3 Filter blocked.	a Check that emptying device or equipment being served is working. Check starter overloads, fuses and interlocks. b Run filter clear*, then remove each element in turn and vacuum-clean all its outer surfaces. Renew any filter pads that are damaged.
	1.4 Motor speed low.	a Check line voltage, phases, fan motor connections. For Star/Delta applications, check motor is in Delta.
	1.5 Incorrect fan motor rotation.	a Check electrical connections and transpose if necessary.
2 Total loss of suction.	2.1 Fan motor stopped.	a Check motor supply overloads, fuses and interlocks (if fitted). b Check motor connections and windings.
	2.2 Filter blocked.	a Check that emptying device or discharge equipment is working. Check starter overloads, fuses and interlocks. b Run filter clear*, then remove each element in turn and vacuum-clean all its outer surfaces. Renew any filter pads that are damaged.
	2.3 Ducting blocked.	a Check throughout and clear.
3 Visible effluent in clean air outlet.	3.1 Filter elements not properly sealed.	a Tighten element retaining bolts to ensure compression of sealing rings.
	3.2 Damaged filter pad.	a Damaged filter pad can be identified by the dust present in clean air chamber. Withdraw element and renew pad.

*To run filter clear, switch off main fan only and allow the controller to perform several complete cleaning cycles before switching off compressor etc.

APPENDIX 7

REDECAM MAINTENANCE DOCUMENTATION

Redecam Handbook

1. DESCRIPTION OF FILTER

The Bi-Get bag filter is a device designed to clean dust-laden gases. The gas to be dedusted travels from the source to the inlet of the filter through a ducting system; a fan downstream from the filter provides the necessary draught to draw the gas through the complete system and exhausts the cleaned gas to atmosphere. The bag filter is made up of two distinct chambers, a "dusty" one and a "clean" one; to get from the former to the latter, the gas must pass through a porous filter medium (usually needlefelt) which retains the dust and allows the gas pass through.

The porous filter medium is made up of cylindrical bags, supported on iron wire "cages"; a drilled sheet (tube sheet), physically separates the two chambers and supports the filtering bags; the bags are inserted through the tube sheet from the clean plenum and penetrate for their full length into the dusty chamber. A sealing system between bags and tube sheets ensures that dust cannot flow from the dusty side to the clean one.

To prevent bags clogging as dust builds up on the dirty side, they must be periodically cleaned (in this way the permeability of the filter medium is kept within acceptable values). The cleaning, which is carried out automatically, is achieved by injecting into the bags the correct amount of compressed air. Dust removed from the bags during the cleaning cycle falls by gravity into the hopper below the dirty air chamber and is transported away by the dust disposal system.

2. MAINTENANCE

Instructions to carry out maintenance of filter within safety conditions and to train the staff, are shown in section USE OF FILTER WITHIN SAFETY CONDITIONS

2.1. ROUTINE MAINTENANCE

The filter has no parts subject to wear and the only items which must be periodically replaced are the filtering bags. Anyway, even in case that no particular fault has shown, it is advisable after a year's operation to carry out a thorough inspection, in order to eliminate any possible fault and cause of damage, allowing the system to work properly during bags' lifetime. The inspection consists of the following operations:

- Check of filtering efficiency
- Check of cleaning system efficiency
- Check of parts subject to wear

2.1.1. Check of filtering efficiency

'On-line' check

Sometimes, if the number of damaged bags is limited, it is possible to detect the row of bags containing the faulty one without stopping the filter. As a matter of facts, in some cases the punctured bag fills up with dust, so the compressed air shot causes a clearly visible dust "gust" at the stack; the smaller the filter and the shorter the ducts, the more evident is this effect. The "gust" has the same frequency as the cleaning cycle (normally about 1 every 5 min.). In this case, proceed as follows:


shut off, one by one, all sections, to detect the one containing the faulty bag


shut off, one by one, all air receivers, to detect the one which feeds the faulty bag


once detected the air receiver, set the cleaning control panel to "manual mode", then energise the pilot solenoid valves one by one, keeping an eye on the stack, until the one which causes the dust "gust" is detected


disconnect the pertinent solenoid valve, to eliminate the trouble until it is possible to carry out the inside inspection


If the control panel is equipped with the automatic detection system LVD, the above operation is performed automatically. For further details see the relevant instructions

The LVD system, as for said above, is not very efficient in case of large process filters and so its installation on such installations is not advisable.

'Off-line' check

Take all precautions mentioned in section USE OF FILTER WITHIN SAFETY CONDITIONS

Stop the I.D. fan or, if possible (sectional-type filters), shutoff the section to inspect

Open the sections acting either on the doors or the upper lids, as the case may be. If necessary, arrange for light up of plenum

inspect the state of the tube sheet:

- if it is clean or (after a long time of operation) it is covered with a thin veil of dust, the filter medium can be regarded as efficient
- if the tube sheet is covered with a thick veil of dust (≥5 mm), clean thoroughly the section, re-start the filter and repeat the inspection after a short while (depending upon dust load)
- if there are dust heaps or "gusts", which origin is well detectable, remove, following the relevant directions, the damaged bags. Find out the cause of the trouble, re-start the system and repeat the inspection to verify the effectiveness of the intervention
- if the dust heaps are found along the edges of the tube sheet, remove the dust and check the welds. Find and eliminate the cause then re-start the system and repeat the inspection to verify the effectiveness of the intervention

If some damaged bags were found on checking and no spare parts would be immediately available, plug each faulty bag by placing a mill ball wrapped in a rag (possibly greased) on its secondary Venturi.

2.1.2. Check of cleaning system efficiency

To verify the efficiency of the cleaning system, proceed as follows:

- Check for compressed air net (pressure must be within stated range)
- Set the cleaning control panel to "automatic mode"

The panel starts energising the solenoid valves according to the pre-set sequence: the compressed air shot is characterised by a sharp noise, which should remain unchanged for all valves. At the end of the cycle the drain solenoid valve (if installed) is open, in accordance with relevant specifications.

In case of control panel failure, see the relevant operating handbook

In case of solenoid valves failure (anomalous opening/closing, suspect noises), go on as shown in section MAINTENANCE TO CORRECT FAILURES AND REMEDIES

2.1.3. Parts subject to wear

Other parts subject to long-term wear are:

- pilot solenoid valve gaskets
- pneumatic valve diaphragms
- access door gaskets

The lifetime of the above-mentioned items depends on site and operating conditions (ambient temperature, no. of cleaning cycles, compressed air quality, working negative pressure, nature of treated gas); even if no faults are detected, it is advisable to run routine checks (frequency of checks depending on the type of installation).

If the filter is equipped with shutoff valves, they must undergo normal maintenance procedures for this kind of mechanical items (check and greasing of bearings); depending on the nature of the treated gas, the closing blades and the valve seats may be affected by wear; in this case, replace them.

In the long run, compressed air fittings may lose tightness; so, in order to avoid increasing of consumption and loss of efficiency, it is necessary to test periodically the tightness along the whole net.

2.1.4. Filtering bags' lifetime

Bags' lifetime depends upon type of installation, nature of dust, dust load. In most cases, by necessity, the guaranteed lifetime is a contractual period which cannot bind the supplier too long. Actually, the "expected" lifetime is much longer than the contractual one. So, it is not necessary to replace the bags at the end of the warranty period, but it is better to consider the following operating parameters:

<u>bags pressure loss</u>, as an absolute value and as a trend:

the maximum pressure loss which is normally regarded as a threshold limit to allow proper cleaning of bags is 150 mm w.g.; beyond such value, it is advisable to replace all bags. Usually, when this value is reached, filter operation becomes unsteady; this leads to a rapid increase of Δp itself and the system is not manageable any more.

In some particular conditions, the filter may be forced to run with a Δp higher than normal; in this case, which is anyway a sign of failure caused usually by cleaning or process troubles, it is advisable to get in touch with Redecam to carry out the proper checks.

In any case, the decision to replace the bags must keep into account operating conditions and, above all, I.D. fan draught capacity and system management economy.

If one of the above-mentioned conditions occur and there is the will of replacing the bags, it is necessary to replace all bags: in case of partial replacement, as a matter of fact, the brand-new bags, because of their higher permeability, are subject to an anomalous dust load which causes a quick deterioration.

dust at the stack:

the increase of dust emissions at the stack may be caused by a local or a generalised trouble. In the first case, the dust is found in well defined zones, normally along the edges of the sections; this occurs when, owing to failures of various nature, some bags are stressed much more than the others, so that the wearing action of the dust damages them very quickly. In this case, it is possible to replace only the damaged bags; instead, when the deterioration is generalised, it is necessary to replace all bags. Anyway, it is always advisable to get in touch with Redecam for a technical advice.

2.1.5. Inspection after commissioning

After commissioning, in order to verify design and assembling of gas distribution system, it is advisable to perform a first inspection. The inspection must be performed after a short time of operation (from 1 to 2 weeks, depending on operating conditions); it will consist mainly of a check of the filtering efficiency, as above described, and of a check of interior corrosion

To carry out filter internal inspection, take all precautions described in section USE OF FILTER WITHIN SAFETY CONDITIONS. Then enter the hoppers and the filter distribution ducts, providing the lighting, where necessary.

Verify the state of the sheets, remarking if there are zones in which the painting has been taken away by wear. In such zones it is necessary to install anti-wear sheets; the area of such protections must be much wider than the area of the damaged zones. If large corroded zones are found, it is advisable to get in touch with Redecam.

A following inspection is advisable, to verify the effectiveness of the remedy.

2.2. MAINTENANCE TO CORRECT FAILURES AND REMEDIES

The troubles which may require unforeseen maintenance and the pertinent remedies are the following:

- increased dust at the stack

   go on as described in section CHECK OF FILTERING EFFICIENCY

- increased filter pressure loss
  for a bag filter a gradual increase of bags Δp is perfectly normal; in some cases, anyway, that could be a sign of failures. In particular, in case of sudden increase and also in "suspicious" cases
  - check for correct positioning of shutoff devices (if any)

   go on as described in section CHECK OF CLEANING EFFICIENCY

   if the check is successful, measure the gas flow to the filter: if the measured value is higher than the design value, get in touch with Redecam to analyse the compatibility

   if the measured value is within the design parameters, check the state of the bags as shown in section FILTERING BAGS' LIFETIME

   in case of bags' lifetime shorter than expected, get in touch with Redecam

2.2.1. Remedies for other troubles

<u>The compressed air pressure decreases or cannot rise</u>

The fault is caused by a leakage somewhere in the net. Find and fix it.

 shut off all air receivers:

- if pressure still does not increase, the leakage is either on the feeding net or on the pressure regulator; carry out necessary checks, consulting, if the case, the specific documentation.
- if pressure rises, reaching the proper value, open, one by one, the manual shutoff valves of the air receivers; in this way, the faulty one will be detected

 when the faulty air receiver has been detected, re-open its manual shutoff valve and find out, by judging the noise, the cause of the leakage.

- If the trouble is due to a pneumatic valve, proceed as described in point 'A pneumatic valve does not open or does not close'
- If the trouble is due to a drain valve, try to fix it and, if the case, remove and replace it.
- For other problems get in touch with Redecam.

All pneumatic valves on one air receiver does not work

Verify that the shutoff valve of the air receiver is open.

Check the compressed air feeding pressure; if the case, set it again to design value.

Check the control panel for proper working, check consents to operation from PLC (if any), check power supply to solenoid valves

If all above checks are successful and the trouble persists, get in touch with Redecam.

A pneumatic valve does not open or does not close

Check power supply to solenoid valve.

Check connection between pneumatic valve and solenoid valve: the least leakage may cause a failure.

If a revolving union leaks, cut off some millimetres of the plastic hose and re-connect it. For detailed description of the operation, see handbook

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USE AND MAINTENANCE

Verify manually that the piston of the solenoid valve can move:

- if the test is successful, re-energise the solenoid valve
- if the operation is not successful or if the system is not working anyway, remove the piston and check the cylinder for foreign matters inside; verify also that the return spring is properly mounted.

- if the result is still unsuccessful, disassemble the pneumatic valve following the instructions shown in the handbook

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  USE AND MAINTENANCE

  and verify that all its parts are clean.

☞ If all above-mentioned operations are successful and the failure persists, get in touch with Redecam.

Other troubles

☞ In case of problems differing from those described in this section, or in case the above-mentioned interventions are unsuccessful, get in touch with Redecam.

2.3. EXTENDED STOP

Before stopping the plant for a long time, in order to preserve best the filter, it is advisable to perform the following operations:

☞ Ventilate the filter with clean air (1/2 h - doors upstream the filter open) and reduced fan capacity (50% of nominal value) for a long period of time, in order to remove any trace of acidity from the plenum (to avoid interior corrosion).

☞ In order to remove the dust from the bags, stop the I.D. fan and let the cleaning system run (1 h)

☞ Let the dust disposal system work for other 15 min. after that the cleaning system has been stopped.

☞ Grease all movable parts, especially dampers, door hinges, lid lifting devices (if any).

Before re-starting the plant after an extended stop, it is advisable to follow, fully or partially (that being dependant on type of installation and stop time), the directions stated in section PREPARING TO OPERATION.

In case of traces of corrosion inside or outside the sheets, before resuming operation, it is advisable to measure their thickness and consult Redecam about what to do.

ATTACHMENT 11
RICE INVENTORY & APPLICABILITY DETERMINATION