



Jeb Bush
Governor

Department of Environmental Protection

Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

May 20, 2005

Mr. John Bunyak, Chief
Policy, Planning & Permit Review Branch
NPS – Air Quality Division007-AC
P. O. Box 25287
Denver, Colorado 80225

RE: CF Industries, Inc.
“B” Sulfuric Acid Plant
0570005-021-AC, PSD-FL-355

Dear Mr. Bunyak:

Enclosed for your review and comment is a PSD application submitted by CF Industries, Inc. to increase the production rate and modify the “B” Sulfuric Acid Plant at the company’s Plant City Phosphate Complex in Hillsborough County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Syed Arif, review engineer, at 850/921-9528.

Sincerely,

for A. A. Linero, P.E., Administrator
South Permitting Section

AAAL/pa

Enclosure

cc: S. Arif

“More Protection, Less Process”

Printed on recycled paper.



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2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Colleen M. Castille
Secretary

May 20, 2005

Mr. Gregg M. Worley, Chief
Air Permits Section
U.S. EPA, Region 4
61 Forsyth Street
Atlanta, Georgia 30303-8960

RE: CF Industries, Inc.
"B" Sulfuric Acid Plant
0570005-021-AC, PSD-FL-355

Dear Mr. Worley:

Enclosed for your review and comment is a PSD application submitted by CF Industries, Inc. to increase the production rate and modify the "B" Sulfuric Acid Plant at the company's Plant City Phosphate Complex in Hillsborough County, Florida.

Your comments may be forwarded to my attention at the letterhead address or faxed to the Bureau of Air Regulation at 850/921-9533. If you have any questions, please contact Syed Arif, review engineer, at 850/921-9528.

Sincerely,

for A. A. Linero, P.E., Administrator
South Permitting Section


AAL/pa

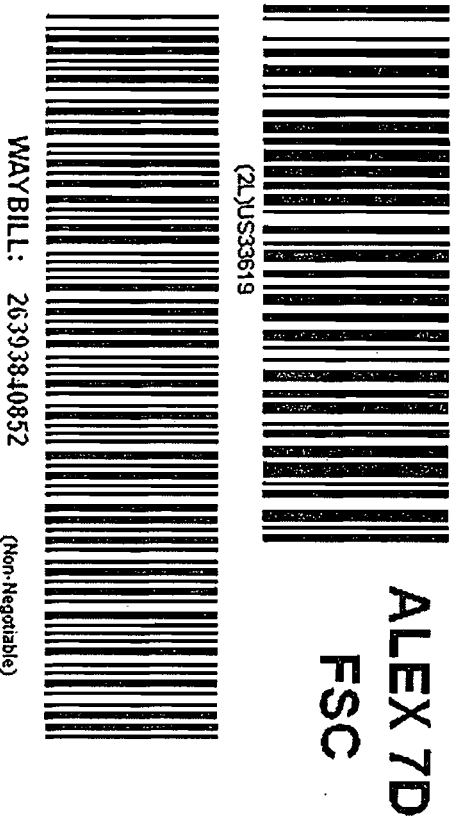
Enclosure

cc: S. Arif

"More Protection, Less Process"

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 EXP Parcels: 1/1	FRONT DEP AIR RESOURCE MGMT P. Adams DIRECTOR OFFICE STE 23 111 SMAGNOLIADR TALLAHASSEE, FL 32301 UNITED STATES Tel:850-921-9505 To: DEP Southwest District Office Mr. Jason Waters 3804 Coconut Palm Drive Air Resources Tampa, FL 33619 UNITED STATES	ORIGIN: TLH Sender's ref: 37550201000 A7 AP255 POSTCODE: 33619 Tel: 813-744-6100
	Description: Weight: Letter Date: 2005-05-24 DHL standard terms and conditions apply.	



WAYBILL: 26393840852

(Non-Negotiable)



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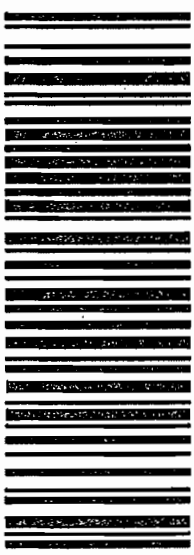
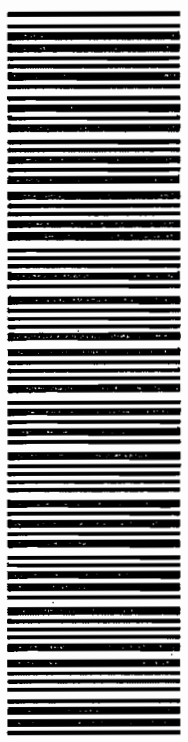
SENDER'S RECEIPT Waybill #: 26393840852 To(Company): DEP Southwest District Office Air Resources 3804 Coconut Palm Drive Tampa, FL 33619 UNITED STATES Attention To: Mr. Jason Waters Phone#: 813-744-6100 Sent By: P. Adams Phone#: 850-921-9505	Rate Estimate: 6 Protection: Not Required Description: Weight (lbs.): Letter Dimensions: 0 x 0 x 0 Ship Ref: 37550201000 A7 AP255 Service Level: Next Day 12:00 (Next business day by 12 PM) Special Svc: Date Printed: 5/24/2005 Bill Shipment To: Sender Bill To Acct: 778941286
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PSD-FL-355



 EXP	Front DEP AIR RESOURCE MGMT P. Adams DIRECTOR OFFICE STE 23 111 S MAGNOLIA DR TALLAHASSEE, FL 32301 UNITED STATES Tel: 850-921-9505 To: National Park Service Mr. John Bunyak 12795 W. Alameda Parkway Air Division Lakewood, CO 80228 UNITED STATES	Parcels: 1/1 ORIGINAL: TLH Sender's ref: 37550201000 POSTCODE: 80228 Tel: 303-966-2818
	Description: book Weight: 4 lbs for 1 pcs Date: 2005-05-20 DHL standard terms and conditions apply.	
 (2L)US80228 EGEH 8E		
 WAYBILL: 26356954256 (Non-Negotiable)		



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SENDER'S RECEIPT

Waybill #: 26356954256

To (Company):
 National Park Service
 Air Division
 12795 W. Alameda Parkway

Lakewood, CO 80228
 UNITED STATES

Attention To: Mr. John Bunyak
 Phone#: 303-966-2818

Sent By: P. Adams
 Phone#: 850-921-9505

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 Description: book

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 Dimensions: 0 x 0 x 0

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Date Printed: 5/20/2005
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		EXP		Parcels: 1/1
FRONT DEP AIR RESOURCE (MGT) P. Adams DIRECTOR OFFICE STE 23 111 S MAGNOLIA DR TALLAHASSEE, FL 32301 UNITED STATES Tel:850-921-9505		ORIGIN: TLH		Sender's ref: 37550201000 AT AP255
To: U.S. EPA Region 4 Mr. Gregg M. Worley 61 Forsyth Street Air Permits Section Atlanta, GA 30303 UNITED STATES		POSTCODE: 30303		Tel: 404-562-9141
Description: book				
Weight: 4 lbs for 1 pcs Date: 2005-05-20 DHL standard terms and conditions apply.				
		HARB 6V ATT		
(2L)JUS30303				
WAYBILL: 26356895655		(Non-Negotiable)		



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P.O. Drawer L.
Plant City, Florida 33564-9007
Telephone: 813/782-1591



CF Industries Inc.

Plant City Phosphate Complex

May 16, 2005

RECEIVED

MAY 18 2005

Ms. Trina Vielhauer
Chief, Bureau of Air Regulation
Florida Department of Environmental Protection
Department of Air Resources Management
2600 Blair Stone Road, MS 5500
Tallahassee, Florida 32399-2400

BUREAU OF AIR REGULATION

Dear Ms. Vielhauer:

CF Industries Inc., is applying for a construction permit to modify the "B" Sulfuric Acid Plant at the Plant City Phosphate Complex. The modification will allow an increase in the maximum permitted production rate of the plant from 1,300 tons sulfuric acid per day (TPD) to 1,600 TPD.

Accompanying this transmittal letter are four copies of the PSD permit application and a check in the amount of \$7,500.00 for the permit processing fee. One copy of the application is also being sent to the Hillsborough County Environmental Protection Commission. The plan to submit this application was discussed with Mr. Syed Arif during his visit to the Plant City Phosphate Complex on March 4, 2005.

If there are any questions regarding the application, please direct them to Bob May at (813) 364-5603, or to Tom Edwards at (813) 364-5608.

Sincerely,

Herschel E. Morris

Herschel E. Morris,
Vice President,
Phosphate Operations and
General Manager

*Application in
April 2005
Folder*

cc: Jerry Campbell, EPCHC
J.S. Alves, Hopping, Green, & Sams

S. Arif

D. Nelson

J. Waters, SWD

M. Worley, EPA

A. Benson, NPS

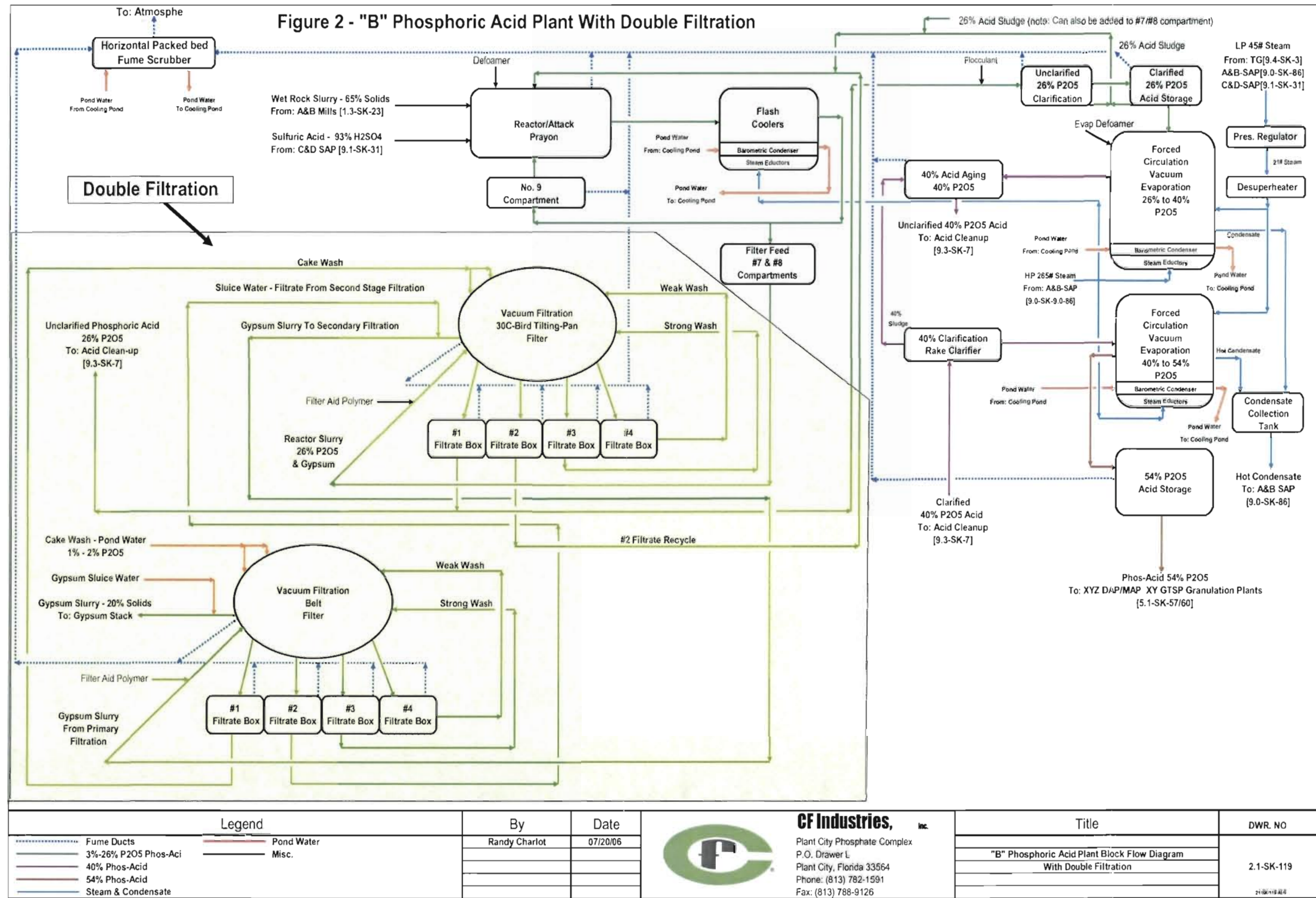


Figure B-6
 "B" Phosphoric Acid Plant with Double Filtration
 0437632/4.1/RA1062906/Figure B-6

Source: Golder, 2006.



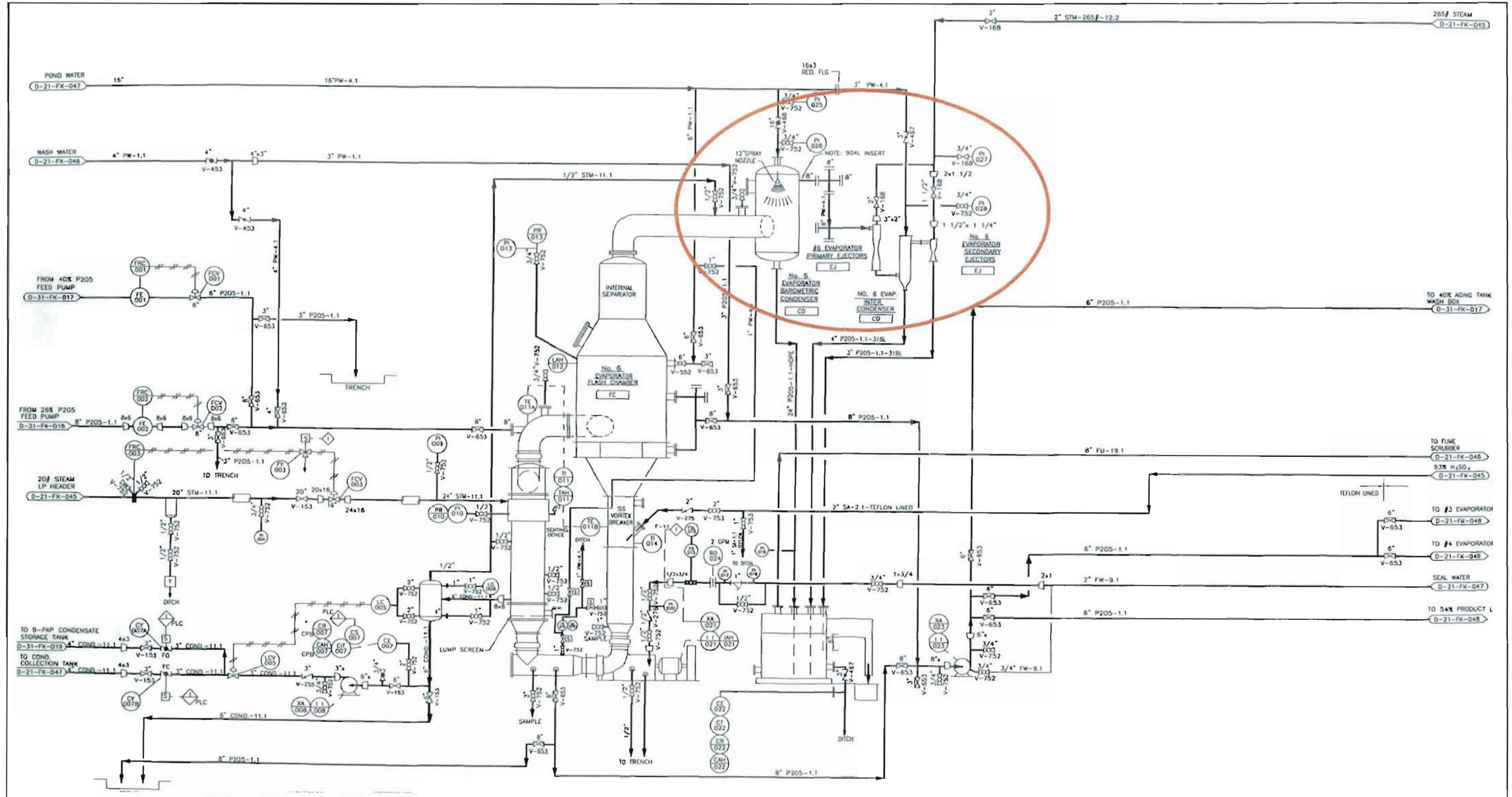


Figure B-1
"A" Pap No. 6 Evaporator – Piping And Instrumentation Diagram (P&ID)

Y:\Projects\2004\0437632 CF Industries\4\4.1\RA\062906\Figure B-1.doc

Source: Golder, 2006.



Table 5 – 'B' PAP Fume Scrubber Predicted Performance at various NTU Assumptions

Production Rate TPD P ₂ O ₅	F lb/day @ 1.2 lb/ton P ₂ O ₅	Air Flow CFM	Temperature °F	Air Flow SCFM	F lb/day	Combined Air Flow SCFM	F Inlet Loading mg/SCF Combined Fumes	F lb/ton P ₂ O ₅	NTU	Scrubber Outlet F mg/CF	Scrubber Outlet F lb/day	Scrubber Outlet F lb/ton P ₂ O ₅
2107	2,661	20,499	Assumed 176	17,018	2,795	36,568	24.08	1.26	6	0.16	14.0	0.0053
2318	2,928	20,499	Assumed 176	17,018	3,062	36,568	26.38	1.25	6	0.16	14.5	0.0050
2528	3,193	20,499	Assumed 176	17,018	3,327	36,568	28.66	1.25	6	0.17	15.0	0.0047
2107	2,661	20,499	176	17,018	2,795	36,568	24.08	1.26	6.5	0.14	11.9	0.0045
2318	2,928	20,499	176	17,018	3,062	36,568	26.38	1.25	6.5	0.14	12.3	0.0042
2528	3,193	20,499	176	17,018	3,327	36,568	28.66	1.25	6.5	0.14	12.6	0.0039
2107	2,661	20,499	176	17,018	2,795	36,568	24.08	1.26	7	0.12	10.7	0.0040
2318	2,928	20,499	176	17,018	3,062	36,568	26.38	1.25	7	0.12	10.9	0.0037
2528	3,193	20,499	176	17,018	3,327	36,568	28.66	1.25	7	0.13	11.1	0.0035
2107	2,661	20,499	176	17,018	2,795	36,568	24.08	1.26	7.5	0.11	9.9	0.0037
2318	2,928	20,499	176	17,018	3,062	36,568	26.38	1.25	7.5	0.11	10.0	0.0034
2528	3,193	20,499	176	17,018	3,327	36,568	28.66	1.25	7.5	0.11	10.2	0.0032
2107	2,661	20,499	Assumed 176	17,018	2,795	36,568	24.08	1.26	8	0.11	9.5	0.0036
2318	2,928	20,499	Assumed 176	17,018	3,062	36,568	26.38	1.25	8	0.11	9.5	0.0033
2528	3,193	20,499	Assumed 176	17,018	3,327	36,568	28.66	1.25	8	0.11	9.6	0.0030

Table 4 – 'B' PAP Recent Data

A		B	Reactor Fumes Only						Combined Reactor & Filter Fumes				M	N	P	Q
			C	D	E	F	G	H	I	J	K	L		Note 1		
Data Point	Test Date	Production Feed Rate TPD P ₂ O ₅	F lb/day	lb F/ ton Feed P ₂ O ₅	Air Flow CFM	Temperature °F	Air Flow SCFM	F Inlet Loading mg/SCF Reactor Fumes	F lb/day	Combined Air Flow SCFM	F Inlet Loading mg/SCF Combined Fumes	F Inlet loading lb/ton Feed P ₂ O ₅	Scrubber Outlet Loading mg/SCF	NTU	Scrubber Outlet F lb/day	Scrubber Outlet F lb/ton Feed P ₂ O ₅
15	9/1/99	1000	1544	1.47	18123	176	15,046	32.33	1677.3	34,595	15.27	1.59	0.133	6.12	12.12	0.012
16	9/1/99	1000	1440	1.37	18123	176	15,046	30.15	1573.3	34,595	14.33	1.49	0.133	6.05	12.12	0.012
17	9/1/99	1000	1448	1.38	18123	174	15,093	30.22	1581.3	34,643	14.38	1.50	0.133	6.06	12.12	0.012
18	7/22/99	1200	1123	0.89	19569	176 Assumed	16,246	21.77	1256.3	35,796	11.06	0.99	0.133	5.79	12.12	0.010
19	7/22/99	1200	1110	0.88	19569	176 Assumed	16,246	21.52	1243.3	35,796	10.94	0.98	0.133	5.78	12.12	0.010
20	7/22/99	1200	1108	0.88	19569	176 Assumed	16,246	21.48	1241.3	35,796	10.92	0.98	0.133	5.78	12.12	0.010
21	9/1/99	1950	1829	0.89	18551	176	15,401	37.41	1962.3	34,951	17.69	0.96	0.153	6.03	13.95	0.007
22	9/1/99	1950	1606	0.78	18551	176	15,401	32.85	1739.3	34,951	15.68	0.85	0.153	5.91	13.95	0.007
23	7/22/99	2000	2250	1.07	20499	176 Assumed	17,018	41.65	2383.3	36,568	20.53	1.13	0.153	6.18	13.95	0.007
24	7/22/99	2000	2786	1.32	20499	176 Assumed	17,018	51.57	2919.3	36,568	25.15	1.39	0.153	6.39	13.95	0.007
25	7/22/99	2000	1,777	0.84	20499	176 Assumed	17,018	32.89	1910.3	36,568	16.46	0.91	0.153	5.96	13.95	0.007
26	6/99	2316	2,779	1.20	20,499	176 Assumed	17,018	51.44	2,913	36,568	25.09	1.26	0.068	12.43	5.88	0.003
27	6/99	2316	2,779	1.20	20,499	176 Assumed	17,018	51.44	2,913	36,568	25.09	1.26	0.075	8.17	6.03	0.003
28	6/99	2316	2,779	1.20	20,499	176 Assumed	17,018	51.44	2,913	36,568	25.09	1.26	0.072	8.72	5.64	0.003
29	6/99	2316	2,779	1.20	20,499	176 Assumed	17,018	51.44	2,913	36,568	25.09	1.26	0.07	9.39	5.86	0.003
30	6/99	2314	2,777	1.20	20,499	176 Assumed	17,018	51.40	2,910	36,568	25.07	1.26	0.077	7.92	6.16	0.003
31	6/99	2314	2,777	1.20	20,499	176 Assumed	17,018	51.40	2,910	36,568	25.07	1.26	0.072	8.72	5.53	0.003
32	1/98	1982	2,379	1.20	20499	176 Assumed	17,018	44.03	2,512.2	36,568	21.64	1.27	0.064	6.39	5.97	0.003
33	1/98	1970	2,364	1.20	20499	176 Assumed	17,018	43.77	2,497.8	36,568	21.52	1.27	0.064	6.38	5.96	0.003
34	1/98	2018	2,422	1.20	20499	176 Assumed	17,018	44.83	2,555.4	36,568	22.01	1.27	0.056	6.64	5.16	0.003
35	1/98	1987	2,385	1.20	20499	176 Assumed	17,018	44.14	2,517.9	36,568	21.69	1.27	0.061	6.43	5.7	0.003
36	1/98	2009	2,411	1.20	20499	176 Assumed	17,018	44.62	2,543.9	36,568	21.91	1.27	0.069	6.31	6.28	0.003
37	1/98	2006	2,408	1.20	20499	176 Assumed	17,018	44.56	2,541.0	36,568	21.89	1.27	0.075	6.16	6.83	0.003

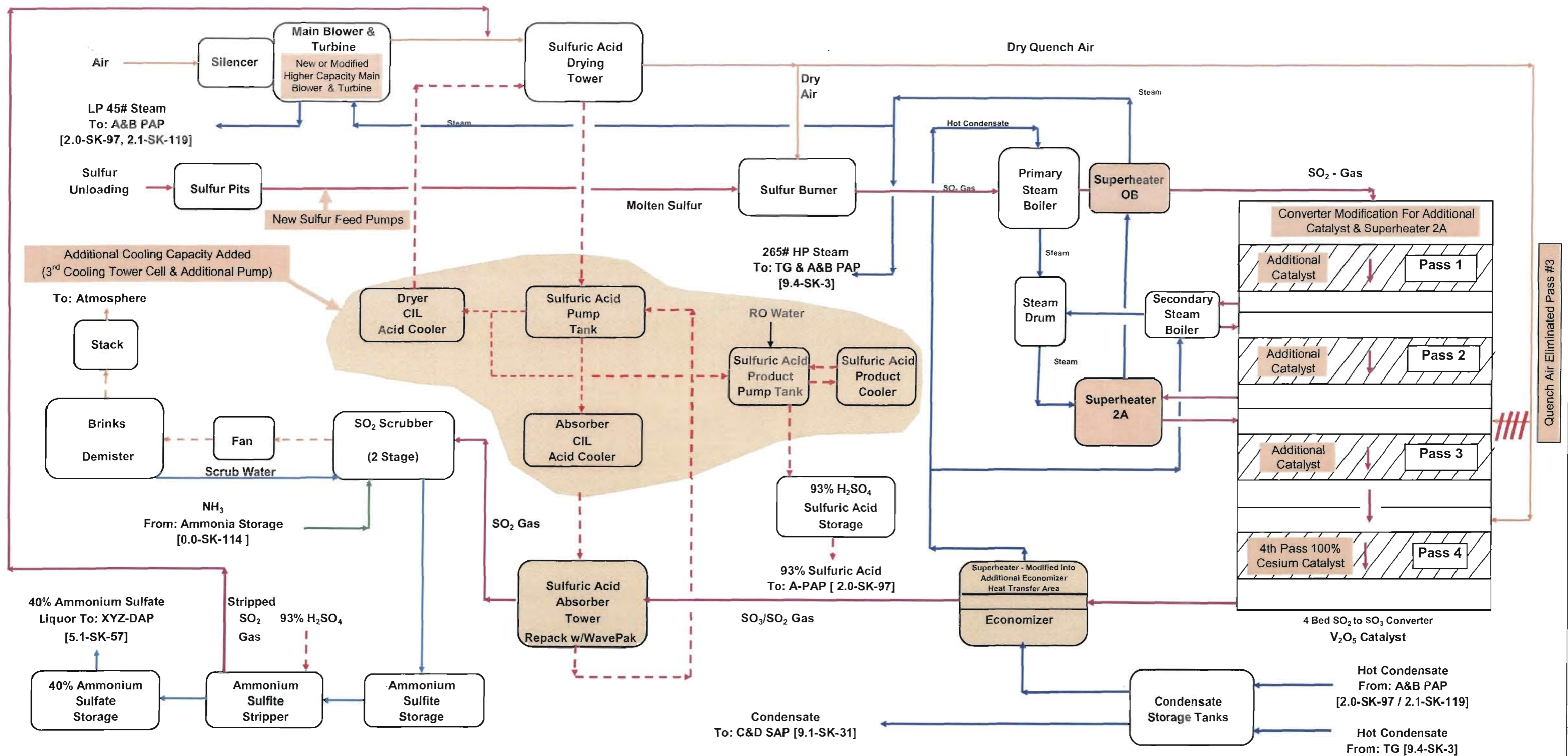
Table 2 – 'A' PAP Fume Scrubber Predicted Performance at various NTU Assumptions

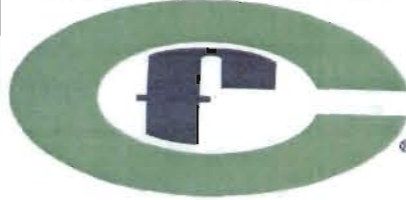
Production Rate TPD P ₂ O ₅	F lb/day @ 1.0 lb/ton P ₂ O ₅	Air Flow CFM	Temperature °F	Air Flow SCFM	F lb/day	Combined Air Flow SCFM	F Inlet Loading mg/SCF Combined Fumes	F lb/ton P ₂ O ₅	NTU	Scrubber Outlet F mg/SCF	Scrubber Outlet F lb/day	Scrubber Outlet F lb/ton P ₂ O ₅
1,416	1,491	10,219	Assumed 172	8,537	1,602	37,077	13.61	1.13	5	0.14	15.9	0.0107
1,558	1,640	10,219	Assumed 172	8,537	1,751	37,077	14.87	1.12	5	0.14	16.9	0.0103
1,699	1,789	10,219	Assumed 172	8,537	1,900	37,077	16.14	1.12	5	0.15	17.9	0.0100
1,416	1,491	10,219	Assumed 172	8,537	1,602	37,077	13.61	1.13	5.5	0.10	11.7	0.0079
1,558	1,640	10,219	Assumed 172	8,537	1,751	37,077	14.87	1.12	5.5	0.10	12.3	0.0075
1,699	1,789	10,219	Assumed 172	8,537	1,900	37,077	16.14	1.12	5.5	0.11	12.9	0.0072
1,416	1,491	10,219	Assumed 172	8,537	1,602	37,077	13.61	1.13	6.0	0.08	9.1	0.0061
1,558	1,640	10,219	Assumed 172	8,537	1,751	37,077	14.87	1.12	6.0	0.08	9.5	0.0058
1,699	1,789	10,219	Assumed 172	8,537	1,900	37,077	16.14	1.12	6.0	0.08	9.9	0.0055
1,416	1,491	10,219	Assumed 172	8,537	1,602	37,077	13.61	1.13	6.5	0.06	7.6	0.0051
1,558	1,640	10,219	Assumed 172	8,537	1,751	37,077	14.87	1.12	6.5	0.07	7.8	0.0048
1,699	1,789	10,219	Assumed 172	8,537	1,900	37,077	16.14	1.12	6.5	0.07	8.0	0.0045
1,416	1,491	10,219	Assumed 172	8,537	1,602	37,077	13.61	1.13	7	0.06	6.6	0.0045
1,558	1,640	10,219	Assumed 172	8,537	1,751	37,077	14.87	1.12	7	0.06	6.8	0.0041
1,699	1,789	10,219	Assumed 172	8,537	1,900	37,077	16.14	1.12	7	0.06	6.9	0.0039

Table 1 -- 'A' PAP Recent Data

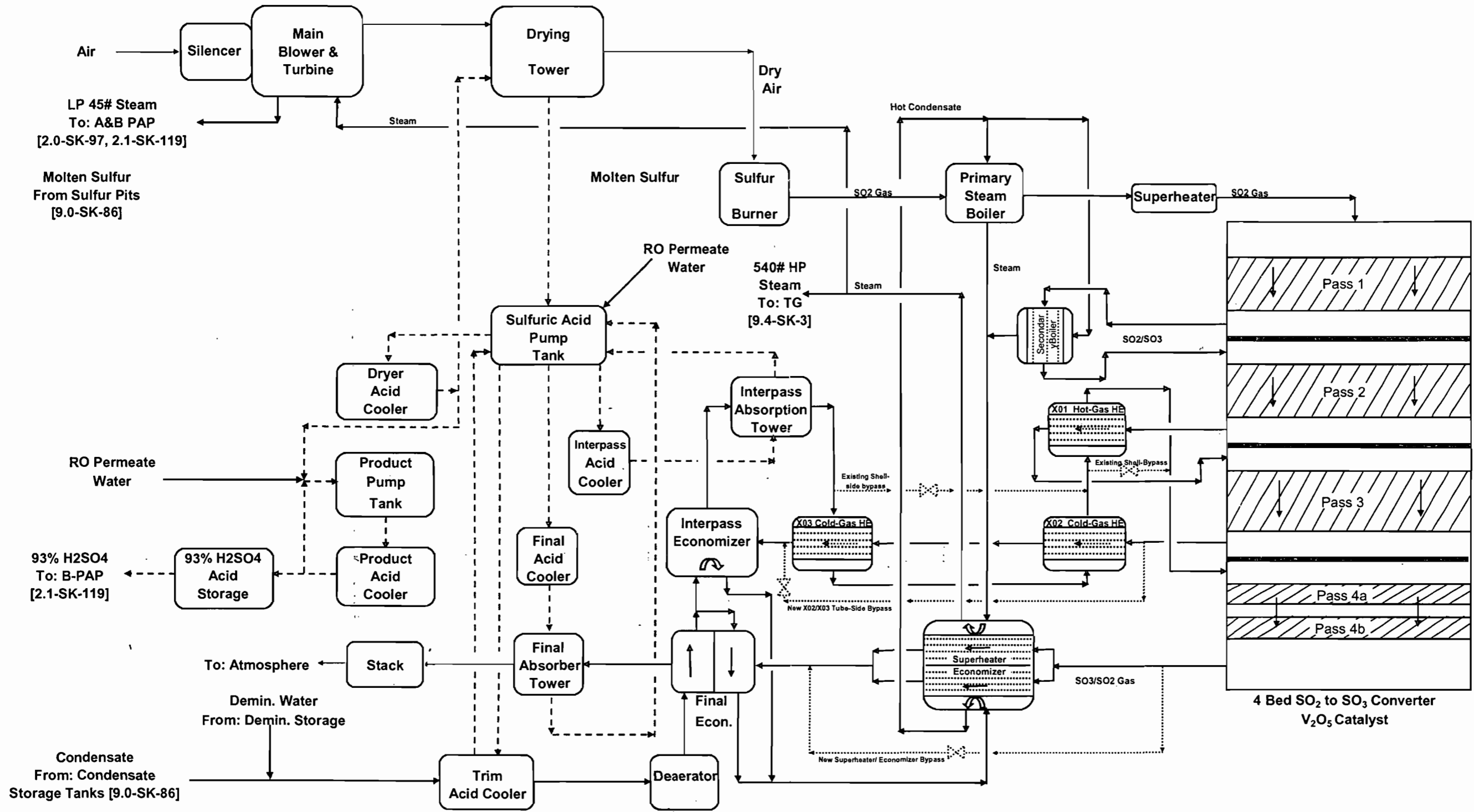
A		B	Reactor Fumes Only						Combined Reactor & Filter Fumes				M	N	P	Q
			C	D	E	F	G	H	I	J	K	L		Note 1		
Data Point	Test Date	Production Feed Rate TPD P ₂ O ₅	F lb/day	lb F/ ton Feed P ₂ O ₅	Air Flow CFM	Temperature °F	Air Flow SCFM	F Inlet Loading mg/SCF Reactor Fumes	F lb/day	Combined Air Flow SCFM	F Inlet Loading mg/SCF Combined Fumes	F Inlet loading lb/ton Feed P ₂ O ₅	Scrubber Outlet Loading mg/SCF	NTU	Scrubber Outlet F lb/day	Scrubber Outlet F lb/ton Feed P ₂ O ₅
1	9/15/99	700	735	1.00	9738	167	8,200	28.23	885	36,491	7.64	1.20	0.053	6.7	7.77	0.011
2	9/15/99	1200	807	0.64	10,219	177	8,470	30.01	879	37,257	7.43	0.70	0.081	5.5	12.76	0.010
3	6/99	1541	1,541	1.00	10,219	172 Assumed	8,537	56.86	1,652	37,076	14.03	1.07	0.059	6.8	9.35	0.006
4	6/99	1538	1,538	1.00	10,219	172 Assumed	8,537	56.75	1,649	37,076	14.01	1.07	0.062	6.7	9.34	0.006
5	6/99	1567	1,567	1.00	10,219	172 Assumed	8,537	57.82	1,678	37,076	14.26	1.07	0.065	6.5	9.52	0.006
6	6/99	1567	1,567	1.00	10,219	172 Assumed	8,537	57.82	1,678	37,076	14.26	1.07	0.051	15.5 7.6	8.15	0.005
7	6/99	1570	1,570	1.00	10,219	172 Assumed	8,537	57.93	1,681	37,076	14.28	1.07	0.059	6.9	8.98	0.006
8	6/99	1579	1,579	1.00	10,219	172 Assumed	8,537	58.26	1,690	37,076	14.36	1.07	0.065	6.5	9.51	0.006
9	2/98	1304	1,304	1.00	10219	172 Assumed	8,537	48.11	1,415	37,076	12.02	1.09	0.103	5.1	15.05	0.012
10	2/98	1301	1,301	1.00	10219	172 Assumed	8,537	48.00	1,412	37,076	12.00	1.09	0.097	5.2	14.12	0.011
11	2/98	1312	1,312	1.00	10219	172 Assumed	8,537	48.41	1,423	37,076	12.09	1.08	0.057	6.1	8.73	0.007
12	2/98	1312	1,312	1.00	10219	172 Assumed	8,537	48.41	1,423	37,076	12.09	1.08	0.094	5.2	14.38	0.011
13	2/98	1312	1,312	1.00	10219	172 Assumed	8,537	48.41	1,423	37,076	12.09	1.08	0.105	5.1	15.78	0.012
14	2/98	1325	1,325	1.00	10219	172 Assumed	8,537	48.89	1,436	37,076	12.20	1.08	0.112	5.0	16.64	0.013

Increased Sulfuric Acid Production B-SAP - Proposed Modifications



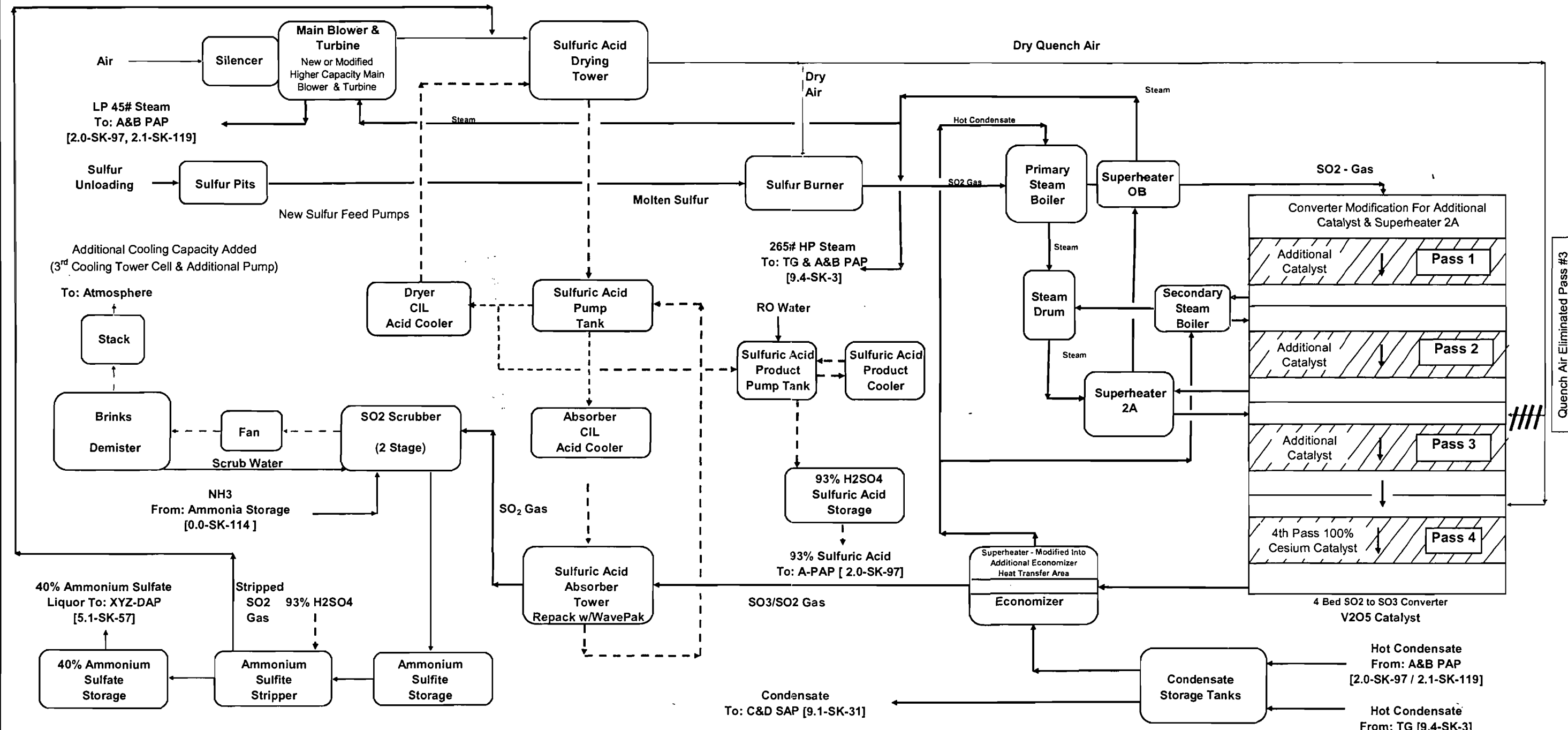
Legend		By	Date	 CF Industries, Inc. Plant City Phosphate Complex P.O. Drawer L Plant City, Florida 33564 Phone: (813) 782-1591 Fax: (813) 788-9126	Title	DWR. NO
- - - Sulfuric Acid - - - Steam/Condensate - - - Process Gas SO ₂ /SO ₃ - - - Air - - - Other	- - - Sulfur - - - Ammonia - - - Scrub Liquor - - - Air + trace SO ₂	Randy Charlot	1/10/07			A&B Sulfuric Acid Plants & Ammonium Sulfate Process Block Flow Diagram Proposed B-SAP Upgrades

C & D Sulfuric Acid Plant (Double Absorption)



Legend	By	Date	CF Industries, Inc.	Title	DWR. NO
- - - - - Sulfuric Acid _____ Gases SO ₂ /SO ₃ _____ Steam/Condensate _____ Air _____ Sulfur	Randy Charlot	2/28/2007	 Plant City Phosphate Complex P.O. Drawer L Plant City, Florida 33564 Phone: (813) 782-1591 Fax: (813) 788-9126	Appendix C-2 C&D Sulfuric Acid Plants Process Block Flow Diagram	9.1-SK-31 <small>91-SK-31.XLS</small>

Increased Sulfuric Acid Production B-SAP - Proposed Modifications



Legend		By	Date	 CF Industries, Inc. Plant City Phosphate Complex P.O. Drawer L Plant City, Florida 33564 Phone: (813) 782-1591 Fax: (813) 788-9126	Title	DWR. NO
-----	Sulfuric Acid	Randy Charlot	2/28/07		Appendix C-1	9.0-SK-86
=====	Steam/Condensate			A&B Sulfuric Acid Plants & Ammonium Sulfate		
-----	Process Gas SO2/SO3			Process Block Flow Diagram		
-----	Air			Proposed B-SAP Upgrades		
-----	Other					