From: Michael Bisnett
To: Stuble, Bill; Michael Bisnett
Cc: Potter, Dolly
Subject: RE: NH3SO4
Date: Monday, August 30, 2004 10:53:17 AM

Bill

The increase in the sulfur content in the fuel may affect the formation of ammonia salts that will be produced. However, if the ammonia slip from our process is tightly controlled than this increase may be very small. Also, the formation/removal of any salts that are formed is also dependent on your process design. The salts may form if the temperatures, <400F, is in an area of concern. Your process may also help eliminate this issue if it removes the ammonia prior to the formation area for the salts. We would have to take a much closer look at your process to determine if the formation of the salts will occur? or if it does occur, will it be an issue?

I know this puts it back in your court, but we can look at the issue closer when we know more about the entire application.

Mike

-----Original Message-----
From: Stuble, Bill
To: Michael Bisnett
Cc: Potter, Dolly
Sent: 8/24/2004 3:37 PM
Subject: RE: NH3SO4

Thanks! -- Bill

-----Original Message-----
From: Michael Bisnett [mailto:MBisnett@fueltechnv.com]

Sent: Tuesday, August 24, 2004 1:34 PM
To: Stuble, Bill
Subject: RE: NH3SO4

I believe we have but I will re submit it and get an updated clarification.

Mike

-----Original Message-----
From: Stuble, Bill
To: Michael Bisnett
Cc: Potter, Dolly
Sent: 8/23/2004 12:32 PM
Subject: RE: NH3SO4

Hello Michael:

Did we ever get a response from Penelope? I don't have any records of it, I believe. Did I ever send you our latest PF diagram? Here it is....

Thanks, Bill

-----Original Message-----
From: Michael Bisnett [mailto:MBisnett@fueltechnv.com]

Sent: Monday, June 07, 2004 10:40 AM
To: Stuble, Bill
Cc: Penelope Stamatakis
Subject: RE: NH3SO4

Penelope,

Please review.

Mike

-----Original Message-----
From: Stuble, Bill
To: Michael Bisnett
Cc: Skogley, Bob; Potter, Dolly
Sent: 6/7/2004 8:12 AM
Subject: RE: NH3SO4

Hello Michael:

The sulfur in the fuel could be increasing to as high as 1.5%, due to a change in coal suppliers. So we have to ask these questions again.

-- What kinds of problems could we expect from ammonium sulfate and ammonium bisulfate?
-- Will there be any adverse corrosion/scaling/deposits in the precipitators?
-- On the stack heat exchanger tubes?
-- NH3SO4 visible plume problems?

Again, one thing we have helping this situation, is the soda ash in the calciner will be competing with the ammonia slip to react with the SO2.

Thanks, Bill

-----Original Message-----
From: Michael Bisnett [mailto:MBisnett@fueltechnv.com]

Sent: Thursday, February 12, 2004 4:45 PM

To: Stuble, Bill
Subject: RE: NH3SO4

Our process evaluation addressed this issue and, based on the 0.4% S in the fuel, the ammonium bisulfate issue will be very limited.

Mike

-----Original Message-----
From: Stuble, Bill
To: Michael Bisnett
Cc: Solvay - Dolly Potter
Sent: 2/12/2004 5:07 PM
Subject: NH3SO4

Hello Michael:

Dumb question. Would NH3 slip react with SO2 to form ammonium sulfate? In the furnace outlet and/or in the calciner/ESP/stack? The offgas temperature would drop from 1800F to 350F as it passes through that equipment.

We know that most of the SO2 reacts with our Na2CO3 to form Na2SO4 -- some of it winds up in our final product.

-- Thanks, Bill

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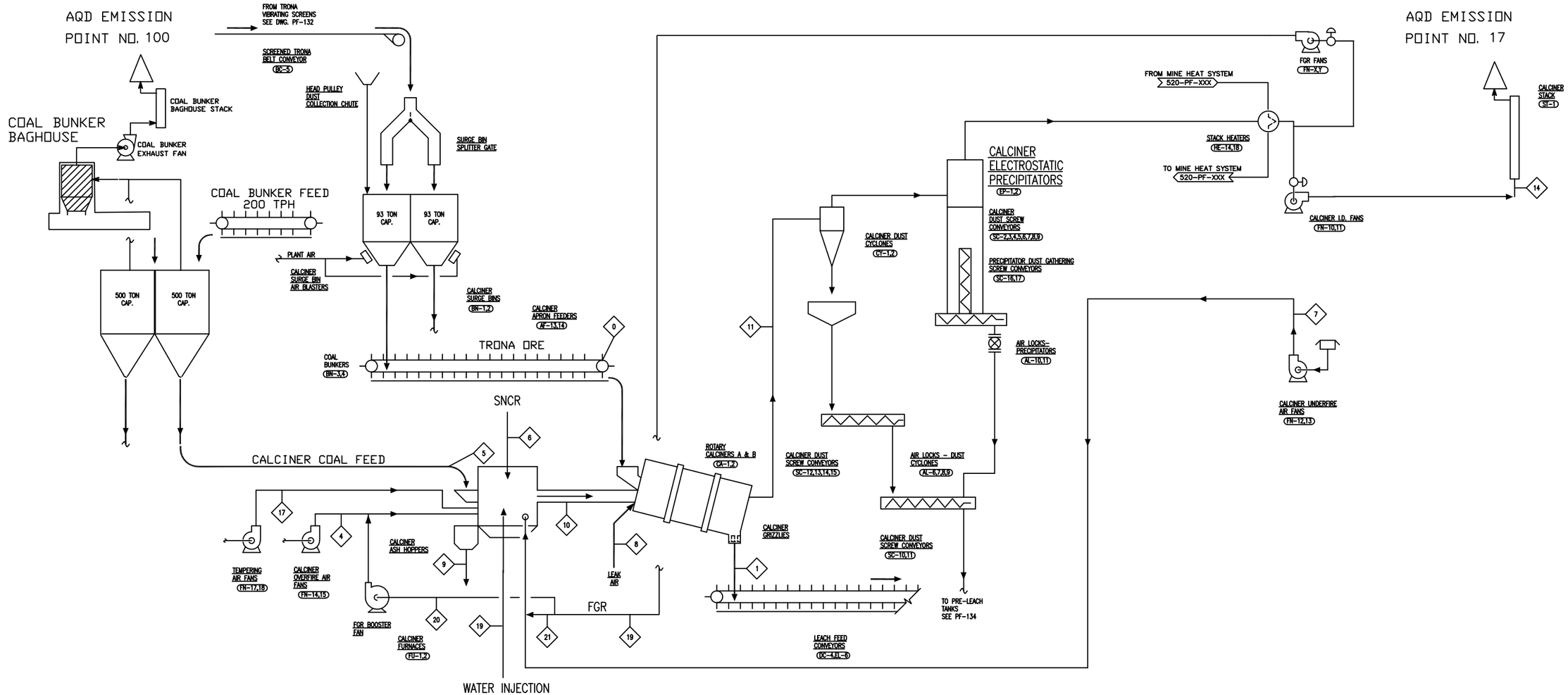

	1	4	5	6	7	8	9	10	11	14	17	18	19	20	21
	Raw Trona Ore	Calcined Trona & Precip Dust	Overfire Air	Coal	SNCR Urea	Underfire Air	Leak Air	Stoker Ash	Combustion Gas	Calciner Off Gas (No Dust)	Stack Gas	Tempering Air	Water Injection	FGR Total	FGR Overfire Air	FGR Under Grate Air
Flow Total (lb/h)	280,000	201,752	84,138	15,480	85	77,877	13,609	1,238	304,347	392,056	302,066	27,638	0.669	90,000	14,400	76,600
ACFM			46,981			42,560	7,362		441,924	306,956	225,099	15,104		87,006	10,721	56,285
SCFM			18,446			17,072	2,983		68,486	92,863	71,562	6,059		21,302	3,408	17,894
DSCFM			18,446			17,072	2,983		58,015	81,777	47,808	6,059		14,171	2,267	11,904
Temperature (F)	70.0	320.0	80.0	43.0	77.0	80.0	80.0	70.0	1,718.2	425.1	350.0	80.0	70.0	350.0	350.0	350.0
Mass fractions																
O2			0.233			0.233	0.233		0.085	0.071	0.071	0.233		0.071	0.071	0.071
N2			0.767			0.767	0.767		0.641	0.516	0.516	0.767		0.516	0.516	0.516
CO									0.001	0.002	0.002			0.002	0.002	0.002
CO2									0.167	0.198	0.198			0.198	0.198	0.198
H2O	0.005				Urea Solution				0.117	0.226	0.226		1.000	0.226	0.226	0.226
SO2									0.000856							
SO3																
NO2																
COAL				1.000				0.374								
ASH								0.626								
TRONA	0.925															
NA2CO3		0.903														
Insolub	0.070	0.097														
C (org)	0.000															

PLOT DATE: 03-05-03 FILE NAME: 520PF133

NO.	REVISIONS	BY	DATE	DWG. NO.	REFERENCE DRAWINGS
9	CONVERSION BACK TO COAL	W.E.S.	03-05-03	420-PF-132A	TRONA CONVEYING & CRUSHING PFD
4	HEATING GLYCOL REDRAWN, FLOW QUANTITIES	S.A.W.	12-4-80	530-PF-134	LEACHING & THICKENING PFD
5	REVISED COAL SYSTEM TO CALCINING	C.L.Q.	9-23-81	700-PF-100	STEAM DISTRIBUTION 300# STEAM PFD
6	ISSUED FOR AS-BUILT	R.S.R.	2-3-92		
7	REVISION & REDRAWN USING AUTOCAD REL. 12	S.D.S.	4-11-94		
8	DEBOTTLE NECK INL II	D.L.A.	6-14-94		

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DESIGNED BY		
DRAWN BY		
CHECKED BY	D.A.P.	03/05/03
APPROVED BY	R.N.S.	03/05/03
APPROVED BY		
APPROVED BY		

TITLE:
CALCINING CONVERSION TO COAL

PROCESS FLOW DIAGRAM

SOLVAY CHEMICALS
INTERIOX, FLUORIDES & MINERALS

GREEN RIVER, WYOMING

SCALE ON 36"X24" SHT: NONE
SHT. 1 OF 1
AREA: 520
DRAWING NUMBER: 520-PF-133
REV. 9

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