Cheyenne

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ANNUAL INSPECTION REPORT
FY 2001

56-037-00005

COMPANY:	Solvay Minerals
FACILITY:	Green River Soda Ash Plant
TITLE V STATUS:	MAJOR
RESPONSIBLE OFFICIAL:	Richard L. Casey, Vice President
TELEPHONE NUMBER:	(307) 875-6500
ADDRESS OF FIRM:	PO Box 1167 Green River, WY 82935
PLANT LOCATION:	Section 31, T18N, R109W, Sweetwater County, Wyoming (located about 15 miles west of Green River and 2 miles south of I-80)
TYPE OF OPERATION:	Soda Ash Processing
COMPANY REPRESENTATIVE:	Dolly A. Potter, Environmental Engineer
DIVISION REPRESENTATIVE:	Carl Disel, Air Quality Engineer CCD
INSPECTION DATE:	July 2, 2001
REPORT DATE:	August 1, 2001
STAFF REVIEW:	Dan Olson, Administrator DO Bob Gill, Compliance Program Manager Tony Hoyt, District Engineer TH
LAST ANNUAL INSPECTION:	August 23, 2000

ATTACHMENTS:

[X] Process Description	[X] CEM Data
[X] Emission Source/ Source Observation Summary	[X] Ambient Monitoring Summary
[X] Required Documents Summary	[X] Stack Test Review
[X] Annual Emissions Summary	[ ] Air Quality Issues
[X] Emission Inventory	[X] Photographs

COMPLIANCE STATUS:

This facility was found to be operating in compliance with applicable Wyoming Air Quality Standards and Regulations.

AIR QUALITY CONCERNS:

1. As noted in the General Inspection Observations and Commentary section of this inspection report, the new "D" Ore Calciner, and the new DR-6 Product Dryer stacks were observed to be emitting blue-white smoke with opacities of approximately 10% and 5% respectively. Past observations of the "A" & "B" Calciner stack and the "C" Calciner stack showed very little blue-white smoke. Solvay is required to explain the new calciner and the new dryer opacities.

2. The reliability for the NOx analyzer for Boiler #2 for the first quarter 2001 was reported to be 90.7%. Solvay explained the downtime greater than 5% to be due to a drain line freezing. When the drain line froze (2/9/01), it allowed water to back up into the analyzers. The sample lines and analyzers were purged with dry instrument air, recalibrated, and put back into service. Shortly thereafter, the NOx analyzer began experiencing sample pressure problems. On 2/16/01 the sample pressure inlet valve failed. A replacement valve was rushed in; however, the vendor sent the wrong valve. The correct valve was subsequently rushed in and installed. No monitor outages have been experienced since the 2/24/01 installation of the new pressure valve.

To prevent future drain line freeze-ups Solvay has modified the drain system to drain inside the plant during the cold winter months and an extra pressure inlet valve has been put into stock.

During my inspection Tim Brown and I climbed to the roof of the facility to observe the various facility stacks. While up there Tim showed me what steps Solvay had taken and planned on taking to alleviate freeze up problems with the opacity monitors. The opacity monitors have an optical head and retroreflector with a blower assembly. To keep the blower assembly from freezing up the blower assembly has been (will be) attached to a flexible automotive exhaust pipe. The pipe is wrapped around the stack to take advantage of the stack heat. By doing this the air is warmed before it enters the stack and the problem of condensing moisture during very cold days should be eliminated. The blower assembly modification has been made on the "C" Calciner. Modification of the blower assemblies on the "A" & "B" Calciners, the Product Dryer #5, the "D" Calciner, and the Product Dryer #6 are in progress. Solvay should be commended for taking this innovative approach to this problem.

GENERAL INSPECTION OBSERVATIONS AND COMMENTARY:

I performed the FY'2001 Annual Inspection of Solvay Mineral's Soda Ash Plant on Monday July 3, 2001. I first observed the plant from a hill west of the facility and noted white smoke (approximately 10% opacity) coming from Solvay's new "D" Ore Calciner unit AQD #80. The remaining stacks observable from the hill appeared clear.

Dolly Potter, an Environmental Engineer for Solvay, met me at the reception desk and we proceeded to the engineers conference room for a pre-inspection meeting. Tim Brown, an Environmental Technician for Solvay, joined us for the meeting. I began the meeting by providing Dolly and Tim with a copy of the proposed Operating Permit 30-126 conditions that I

had paraphrased for clarity. Below each condition I explained what action will be required by Solvay to satisfy each condition (see the Permit Conditions section of this inspection report). I asked Dolly if Tim and I could first do a walk through of the facility so I could observe the calciner, dryer, and boiler stacks and record the operating parameters for each unit. Dolly said that would be fine and that would give her time to read through the material I had provided.

Tim and I first went to his office where I recorded the following operating parameters for the calciners, dryers, and boilers. The scrubber controlled DR-1 Steam Tube Dryer was processing 62 tons per hour (TPH). The DR-2 Steam Tube Dryer was down. The ESP controlled "A" Calciner was processing 162 TPH and the ESP controlled "B" Calciner was processing 120 TPH. The continuous opacity monitor (COM) for the single stack for the "A" & "B" Calciners was recording from 0.5% to 1.0% opacity. The ESP controlled #1 Coal Fired Boiler was producing 199,100 pounds (lbs) of steam. The COM was recording 3.2% opacity and the continuous emissions monitor (CEM) was recording 0.12 pounds per million Btu (lb/MMBtu) SO2 and 0.649 lb/MMBtu NOx. The ESP controlled #2 Coal Fired Boiler was producing 188,638 lbs of steam. The COM was recording 1.8% opacity and the CEM was recording 0.010 lb/MMBtu SO2 and 0.643 lb/MMBtu NOx. The scrubber controlled DR-4 Fluid Bed Dryer and the ESP controlled "C" Calciner were down. The ESP controlled Product Dryer #5 was processing 117 TPH and the COM was recording 1.0% opacity. The "D" Ore Calciner was processing 200 TPH and the COM was recording 1.0% opacity. Finally the DR-6 Product Dryer was processing 120 TPH and the COM was recording from 1% to 2% opacity.

After recording the operating parameters for the operating calciners, dryers, and boilers Tim and I climbed to the facility roof to observe the calciner, dryer, boiler, and various baghouse and bin vent stacks for opacity. I noted no visible emissions from any of the facility stacks except from the new "D" Ore Calciner (unit 80), and the new DR-6 Product Dryer (unit 82). I observed blue-white smoke coming from the new calciner stack with an opacity of approximately 10%. I observed blue-white smoke coming from the new dryer stack with an opacity of approximately 5%. The calciner and dryer are limited to 20% opacity. Both the calciner and dryer plumes were clear for the first 10 to 15 feet and then condensed into the blue-white plumes. It was a clear hot high pressure morning and the blue-white plumes are typical for trona processing equipment on hot days. The blue-white plumes forming some distance from the stack tip have been theorized as condensing organics. Recently performed performance tests on the new calciner show particulate emissions at 7.93 lb/hr, 64.7% of its allowable of 12.25 lb/hr. Preliminary performance test results for the new dryer show particulate emissions at 1.0 lb/hr, 29% of it's allowable of 3.45 lb/hr. The COMs for the new calciner and the new dryer, 30 minutes prior to my observations, read from 1% to 2% opacity. The ESPs for the new calciner and the new dryer were purposely oversized to ensure a good margin of compliance with their respective particulate emission limits. After completing our roof observations Tim and I walked completely around the facility looking for any stacks with visible emissions or any plant fugitive emissions. To Solvay's credit none were noted. Tim and I returned to the engineers conference room where we were met by Dolly to begin going over the proposed operating

permit conditions.

As stated above I paraphrased the proposed operating permit conditions to shorten the length of this inspection report and explained below the relevant conditions what is required by Solvay to satisfy each condition. Dolly, Tim, and I went through each condition and I explained what was going to be required by Solvay to satisfy each condition. I first explained that for conditions F1 thru F5 which set soda ash production limits, set visible, particulate, SO2, NOx, and CO emission limits; set operation and maintenance requirements; and set process rate limits; Solvay is required to access compliance with the conditions by performing monitoring, testing, and recordkeeping explained in the Compliance Certification and Schedule section of the proposed operating permit (see the Compliance Certification and Schedule section of this inspection report). For the status of conditions F1 thru F5 and the status of the Commencement of Construction of Chapter 6, Section 2 Permit CT-1347 and CT-1416 and the Testing Requirements, Monitoring Requirements, Recordkeeiping Requirements, Reporting Requirements, and the Stratospheric Ozone Protection Requirements, conditions F6 thru F40 (see the Permit Conditions section of this inspection report).

ANNUAL EMISIONS:
The 2000 annual emissions as reported by Solvay show the following emissions: PM-10 (139.1 tons), NOx (1,307.9 tons), CO (2,915.7 tons), VOC (2,125.6 tons), and SO2 (52.5 tons). The PM-10, NOx, VOC, and SO2 emissions are consistent with previous years emissions. The CO emissions in 1999 were reported to be 5,559.7 tons. The difference in the 1999 and the 2000 CO emissions can be attributed to CO emissions testing performed in 2000 and the change in the Division's Emission Inventory Calculations Methods.

TITLE V OPERATING PERMIT STATUS:
The draft Operating Permit 30-126 for Solvay Soda Ash Venture, Inc was issued March 27, 2001. The Division updated the draft permit based on comments from Solvay on February 26, 2001. New equipment was added to the permit so an additional public comment period was required. On June 1, 2001 the Division, in response to public comments made by the Wyoming Outdoor Council, added additional monitoring and record review requirements. These changes were considered to be administrative in nature and did not require an additional public comment period. The proposed operating permit is now being reviewed by the EPA. The EPA review period ends on July 23, 2001. The operating permit contains all the applicable requirements and conditions of WAQSR permits and waivers issued prior to the date of issue (March 27, 2001).

RESOLUTION OF PREVIOUS AIR QUALITY CONCERNS:

(This section reviews concerns identified in the last annual inspection report and the resolution of those concerns)

1. The Division reviewed stack tests for the AQD #25 (Alkaten Crusher) and AQD #26 (Alkaten Dryer) performed on April 30, 2000 and May 1, 2000 by AIRTECH Environmental

Services. The testing was performed to demonstrate compliance with Chapter 6, Section 2 Construction Permit CT-1416 particulate emission limits while the process ran at an increased production rate. The Division authorized the increased production rate from the permitted 24 TPH to as high as 36 TPH with a Temporary Wavier issued January 21, 2000.

The test results DID NOT show compliance with Permit CT-1416 particulate emission limits. AQD #25 tested at an average for the three 135 minute test runs at 1.46 lb/hr, 146% of the allowable (1.0 lb/hr). The production rate was maintained at 42 TPH which is higher than allowed by the temporary waiver (36 TPH). AQD #26 tested at an average for the three 135 minute test runs at 0.782 lb/hr, 142.2 % of the allowable (0.55 lb/hr). The production rate was also maintained at 42 TPH for the AQD #26 tests and also exceeds the production rate allowed by the temporary waiver.

Solvay should be required to explain why the 36 TPH production rate allowed by the Temporary Waiver was exceeded during the stack testing and provide a corrective action plan detailing steps to insure the baghouses do not exceed their respective particulate emission limits for the planned re-testing of the baghouses on September 18, 2000.

SOLVAY RESPONDED TO THIS CONCERN (November 17, 2000):

The Division noted in the FY'2000 Inspection Report that the Alkaten stack testing conducted on April 30 and May 1, 2000 was conducted at a higher production rate than noted in the Temporary Waiver, and that testing did not show compliance. A "capacity test" of the Alkaten Production Line was requested by the Division on January 19, 2000. Although the expected increased production rate was not documented in the request, through conversation with the Division, a rate of 36 tph was noted in the Temporary Waiver issued January 21, 2000. It is difficult to determine the actual effect a debottlenecking project will have on the production rate. The April 7, 2000 notification of the stack test schedule to the Division stated a production goal of "approximately 36 or 40 tpy".

A production rate of 42 tph was achieved during the capacity test, with stack testing conducted at this rate. Although stack testing did not show compliance with the existing emission rates, it was not due to the increased production rate. As explained in the June 7, 2000 correspondence to the Division, the stack test samples were contaminated due to dusty conditions inside the crusher building where the stack test portals are located. Subsequent stack testing has been conducted at increased production rates, and shows compliance with the existing emission rates.

Solvay regrets the confusion surrounding the capacity test production rate, and will attempt to more clearly define these types of variables in the future. A permit application will soon be submitted to the Division to request an increase in the production rate of the Alkaten product line.

PRESENT STATUS OF AQD #25 AND AQD #26:

Airtech Environmental Services Inc. performed particulate emission tests on September 20 and September 29, 2000 for the Alkaten Crusher Baghouse AQD #25 and the Alkaten Dryer Baghouse AQD #26. The purpose of the testing was to demonstrate compliance with permit CT-1416 particulate emission limits at increased production rates. CT-1416 set particulate emission limits for AQD #25 at 1.0 pound per hour (lb/hr) and AQD #26 at 0.55 lb/hr and limited the production rate to 24 tons per hour (TPH).

The tests showed the Alkaten system can be operated at nearly twice the permitted production rate while maintaining compliance with the permit CT-1416 particulate emission limits. Stack testing was performed on the Alkaten Crusher Baghouse AQD #25 at a production rate of 44 TPH and particulate emissions were reported at 0.15 lb/hr, 15 percent of the allowable. Stack testing was performed on the Alkaten Dryer Baghouse at a production rate of 43 TPH and particulate emissions were reported at 0.29 lb/hr, 53 percent of the allowable. The Division accepted these tests as representative of emissions from these sources.

Solvay requested a temporary waiver to increase the production rate of AQD #25 and AQD #26 December 13, 2000. The temporary waiver request included the waiver application. The Division confirmed receipt of the waiver application on December 21, 2000 and noted the request for a temporary waiver. The Division did not grant the temporary waiver but stated it would proceed with the waiver request as expeditiously as possible. The Division issued Chapter 6, Section 2 Waiver AP-GS1 on January 25, 2001 to increase the production rate for AQD #25 (Alkaten Crusher) and the AQD #26 (Alkaten Dryer) to 50 TPH for both units.

RECOMMENDATIONS FOR IMPROVED AIR QUALITY:

No recommendations for improved air quality at this time.

PERMITS AND WAIVERS:

The draft Operating Permit 30-126 for Solvay Soda Ash Venture, Inc was issued March 27, 2001. The Division updated the draft permit based on comments from Solvay on February 26, 2001. New equipment was added to the permit so an additional public comment period was required. On June 1, 2001 the Division, in response to public comments made by the Wyoming Outdoor Council, added additional monitoring and record review requirements. These changes were considered to be administrative in nature and did not require an additional public comment period. The proposed operating permit is now being reviewed by the EPA. The EPA review period ends on July 23, 2001. The operating permit contains all the applicable requirements and conditions of WAQSR permits and waivers issued prior to the date of issue (March 27, 2001). The permits and waivers issued prior to March 27, 2001 include:

Permit CT-234 (7/2/79), Permit CT-234A, and Permit CT-234A2: The Division issued Permit

CT-234 allowing Tenneco Oil Company to construct an underground trona ore mine and surface processing plant for the production of anhydrous soda ash. The permit was amended on December 22, 1981 to modify the product air classifier stack (AQD #16) by reducing design air volume and reducing stack height. A second amendment (CT-234A2) was issued September 26, 1984 to address discrepancies between the original CT-234 permit application specified equipment and the actual as-built equipment. The amendment also extended the life of a temporary outdoor trona ore stockpile. All conditions and requirements not revised by the amendments have been superseded by permit OP-154.

EPA Prevention of Significant Deterioration (PSD) Permit (10/5/79): Because the State of Wyoming did not yet have delegated authority to issue PSD permits in lieu of the U.S. Environmental Protection Agency (EPA), Region 8 of the agency reviewed Tenneco's original plans and issued a separate PSD permit. This permit contained a reiteration of the Division's continuous monitoring requirements and a slightly modified table of allowable emissions. Under January 30, 1992 cover, EPA rescinded condition #3 of their PSD permit requiring reporting of monitoring results to Region 8. This letter acknowledged Wyoming had assumed primary responsibility for implementing the PSD permitting program.

Permit OP-154 (1/20/86):
The Division issued the permit to Tenneco Minerals Company which set emission rates for all the facility's point sources. Source specific permit requirements still in effect are the continued operation of Tenneco's ambient monitoring network and continuous in-stack emissions monitoring on the #1 and #2 Coal Fired Boilers (AQD #18 and AQD #19) and the "A" and "B" Calciners (AQD #17). All other conditions have been superceded by subsequent Chapter 6, Section 2 permits.

Permit CT-643 (9/16/85) and Permit CT-634A (7/29/86):
Permit CT-643 allowed Tenneco to construct a facility to produce a rumen buffer in animal feed, called Alkaten. Three point sources were created as a result of this project: AQD #25, a baghouse on the crusher mill and screening portion of the facility; AQD #26, a baghouse on the product dryer exhaust; and AQD #27, a baghouse controlling emissions from the product loadout area of the plant. The original permit (CT-643) was issued September 16, 1985 for a different design for the Alkaten facility, but after it was issued Tenneco revised the design of the facility to incorporate an entirely different type of process equipment. No construction was ever undertaken on the original CT-643 design of the plant. Therefore, no conditions of this permit remain in effect.

Permit CT-643A was issued based on the revised process description, and construction proceeded with the first phase of the project consisting of 28,000 TPY of production capacity. The permit considered a second phase with additional screens doubling the capacity of Alkaten production to 56,000 TPY. All conditions and requirements of this permit have been superseded.

Permit OP-181 (2/25/88): This permit was issued to revise the allowable emission rates for sources AQD #25 through AQD #27. The 1987 tests showed compliance with these revised allowable limits. The allowable mass particulate emission rates for these three baghouses were subsequently revised in permit MD-117.

Permit MD-117 (2/28/90):
The Division issued permit MD-117 for modifications to the existing calciners in order to increase soda ash production from 1.0 to 1.25 MMTPY. The permit also included the installation of an additional fluid bed dryer, and the construction of a Caustic/Sodium Sulfite facility. The EPA determined this was a "major modification" as defined in PSD regulations. All conditions of this permit have been met or superceded by subsequent Chapter 6, Section 2 permits.

Waiver (4/6/90):
The Division issued a waiver for the construction of a transloading system to allow railcar loadout. The waiver limited Alkaten transloading to a rate of one 100-ton railcar per week. The only new process equipment was a baghouse (AQD #45) to control emissions from the railcar loadout. The waiver required no visible fugitive emissions from the railcar loading operation.

Permit MD-132 (11/30/90):
The Division issued permit MD-132 for construction of a new "C" process line to increase soda ash production from 1.25 to 2.0 MMTPY. New emission sources include a baghouse controlled crusher (AQD #47), a scrubber ore leaching tank (AQD #49), an ESP controlled gas-fired ore calciner (AQD #48), and an ESP controlled gas-fired product dryer (AQD #51). Additionally, the permit included four new housekeeping baghouses for the ore transfer area, product dryer handling area, and new product storage silos. The Division recognizes these baghouses as AQD # 46, 50, 52, 53. The dissolver scrubber (AQD #49) was never installed. The ore leaching tank feed chute was modified which eliminated dusting. All conditions of this permit have been superceded by subsequent permits.

Waiver (2/14/92):
The Division issued a waiver for the construction of a 200-ton storage bin to hold an Alkaten by-product, minus 200 mesh dry trona ore. Under this waiver, a new baghouse (AQD #54) was installed for controlling dust from the storage bin vents. This source is subject to 40 CFR 60 Subpart OOO.

Permit CT-946 (3/17/92):
The permit was for an increase in soda production by 1.5 MMTPY. This included an additional gas-fired calciner along with associated transfer/ loadout dust control systems. The permit also revised emission limits for the crusher plant area baghouse (AQD #47) and the "C" process line area expansion baghouse (AQD #50). The only construction completed under CT-946 was the

installation of AQD #55, recycle/reclaim area baghouse.

On May 27, 1992 Tenneco Soda Ash Company was acquired by Solvay America, Inc. and on December 2, 1994 the Division transferred the facility permits to Solvay. The only requirement from CT-946 still in effect is the AQD #55 emission limit which is included in subsequent permits.

Waiver (8/30/93):
The waiver was issued for the replacement of the Alkaten product dryer electric heater with a 2.6 MMBtu/hr gas fired burner. The Division waived permitting requirements for the gas fired burner because emissions are of trivial environmental importance.

Waiver (2/15/95) and Permit MD-229 (6/13/95):
The Division issued the waiver to allow for the construction of (2) baghouse controlled silos for storage of activated carbon and perlite.

Permit MD-229 identified the activated carbon and perlite silos as AQD #62 and AQD #63, respectively. The permit allowed for conversion of the "A" and "B" Calciners from coal to natural gas fired burners. Two 200 MMBtu/hr LE burners were added to the calciners. The burners share a common stack, AQD #17. The only requirement remaining in effect is the CO minimization plan for the "A" and "B" Calciners.

Since coal is no longer used, the permit eliminated the coal bunker baghouse (AQD #12). The "A" and "B" dissolver leach tank chutes were modified which eliminated AQD #23 and AQD #29.

Permit OP-257 (11/9/95) and Permit OP-258 (11/9/95):
Permit OP-257 set performance standards and testing procedures for nine point sources. This included 40 CFR 60 Subpart OOO requirements for AQD #'s 30, 31, 36 - 41, and 44. This requirement is included in operating permit 30-126.

Permit OP-258 required installation of continuous opacity monitors on precipitator stacks AQD #48 and AQD #51. The permit included 40 CFR 60, Subpart OOO for AQD #45, 46, 47, 50, 52, and 53. As with OP-257, this condition has been included in subsequent permits.

Waiver (3/25/96):
The Division issued the waiver for the installation of 3 housekeeping baghouses which have been designated as AQD #64, Sulfite Blending Baghouse #2; AQD #65, Sulfite Blending Baghouse #1; AQD #67, Boiler Bottom Ash Baghouse. The permit also included the construction of a new carbon/perlite additive scrubber, AQD #66. The only conditions remaining in effect are Subpart OOO requirements for the two sulfite blending baghouses.

Permit MD-282 (5/16/96):
The Division issued the permit to incorporate AQD #64, 65, 66, and 67 into the plant emission inventory. The permit also allowed Solvay to construct a "sodium metabisulfate" (MBS) process into current plant operations. The project involved the installation of a new digester, absorber, and crystallizer which resulted in two new emission points. AQD #72, MBS Bin Vent Baghouse and AQD #73, MBS Dryer Scrubber designated as the emission points are included in permit 30-126.

The permit also allowed for the installation of a product bagging facility to handle trona products, soda ash, and sodium metabisulfite. Emission points for the bagging system are 4 bin vent baghouses, AQD #68 - 71.

A new 200 MMBtu/hr gas fired burner, identical to those installed under MD-229, was added to the "C" Calciner. Also, gas fired pre-heaters rated at 6 MMBtu/hr, were installed on the inlet ducts of the "A" and "B" line steam tube dryers. The modification was necessary because these dryers were getting insufficient steam heat within the dryer shells to meet product specifications.

Source specific requirements currently in effect are a modified NOX emission limit for the stack shared by the two pre-heaters (AQD #15), and a CO minimization plan for the "C" line calciner.

Waiver (5/2/97):
The Division issued the waiver for the modification of a sulfur burner, AQD #83. The process involved lengthening the ductwork through the burner by 4 ft. to increase residence time and thus increase conversion of elemental sulfur to SO2 prior to quenching operations. The modification also allowed for an increased sulfur feed rate from 45 to 55 TPD through the burner.

Although the waiver was issued for an additional 4 ft. of ductwork, 8 ft. was actually added, and the sulfur-burn capacity increased to 60 TPD.

Permit CT-1347 (2/6/98):
The Division issued the permit for the construction of a new "D" process line. The addition resulted in a 50% increase rate of soda ash production from 2.4 to 3.6 MMTPY. The permit revised process rate limits on the existing "A", "B", "C" Calciners and identified 7 new emission sources which have been included in permit 30-126. These new equipment sources include the "D" Train Primary Ore Screening Baghouse (AQD #76), Ore Transfer Point Baghouse (AQD #79), "D" Ore Calciner Precipitator (AQD #80), "D" Train Area Baghouse (AQD #81), DR-6 Product Dryer (AQD #82), Product Silo Top Baghouse #3 (AQD #83), and the #3 Gas Boiler (AQD #85).

The "D" line construction resulted in pollutant emission increases requiring PSD evaluation for

particulates, carbon monoxide and VOC's. NOx emissions were offset by previous burner retrofits. The plant's emissions were reduced by the removal of sources AQD #2B, 40, 47, and 69 since they were no longer in use.

This permit also contains tables with emissions limits for all equipment previously permitted at the site. These emission limits are contained in 30-126.

Waivers (5/28/98):
Two waivers were issued allowing an increase of NOx emissions from the AQD #15 and AQD #73 stacks. The actual firing rates of the natural gas burners installed on the DR-1/DR-2 Product Dryers and the MBS Dryer (AQD #73) were greater than the allowable established under permit MD-282. Conditions from the waivers were later incorporated into permit CT-1416.

Permit CT-1416 (9/23/98):
The Division issued permit CT-1416 for construction of a facility to produce Fine Calcium Carbonate (FCC). Two new emission points are associated with the process; the FCC Product Recovery Baghouse (AQD #86) and the FCC Product Storage Silo Vent and Truck Loading Baghouse (AQD #87).

The permit set a NOx emission limit for the FCC product recovery baghouse; particulate emission limits for AQD #86 and #87, and a production rate limit. These limits were based on standards from Subpart OOO. The permit also specified compliance stack testing procedures for particulate emissions.

Waiver (1/4/99):
The Division issued the permit waiver for the construction of a transloading system for conveying trona products from trucks to rail cars. The waiver allowed for the installation of a new emissions source, AQD #88, Trona Products Transloading Baghouse #2. This equipment is also subject to Subpart OOO standards.

Waiver (1/12/99):
The Division issued the waiver for the installation of a wet scrubber to control SO2 emissions at the caustic/sulfite loadout facility. The new scrubber, designated as AQD #89 is considered to be an insignificant source of emissions. Therefore, the Division waived permitting requirements for the scrubber.

Waiver (9/10/99):
The Division issued the waiver for modification of the Carbon Bin, the Perlite Bin, and the Sulfite Blending baghouses along with the installation of two additional housekeeping baghouses.

Permit MD-474 (6/1/00):
The Division issued the permit to eliminate the carbon monoxide limit on the gas fired DR-5 Dryer (AQD #51) set forth in permits OP-258 and MD- 132. The permit also considered an increase in the estimated CO emissions from the DR-6 Dryer AQD #82, but did not establish a CO emission limit. Conditions from this permit have been incorporated into permit 30-126.

Waiver (6/27/00):
The Division issued the waiver for modifications to the plant loadout facilities to allow for the direct loading of trona products into railcars. The sulfite loadout system will utilize the FCC loadout facilities, AQD #87, but will be renamed as Sulfite Loadout, AQD #94. The existing FCC loadout was only equipped for loadout by truck and will be modified to include a retractable loading spout for railcar loadout. Additionally, the Sulfite Loadout System (AQD #41) will be used for trona products and will be renamed Trona Products Rail Loadout (AQD #93). The waiver also removed AQD #39, as it was replaced with a bag filter, Trona Product Bin Filter (AQD #92). These modifications have been incorporated into permit 30-126.

Permit MD-498 (7/18/00):
The Division issued the permit for an increase in the production rate of the DR-1, DR-2, and DR-5 Product Dryers. The increase will occur while maintaining current annual production rate limitations and existing emission limits. The increased production rates will not require physical modifications to the dryers.

Other Applicable Requirements

40 CFR 60 Subpart D:
The #1 and #2 boilers (units AQD #18and AQD #19) are subject to 40 CFR 60 Subpart D which establishes opacity, particulate, SO2, and NOX emissions standards for affected sources. Per subpart requirements, continuous emissions monitoring for opacity, NOX, SO2, and either O2 or CO2 is required for each boiler. The boilers are also subject to excess emissions reporting requirements.

40 CFR 60 Subpart OOO:
There are 38 baghouses and wet scrubbers at the plant that are subject to 40 CFR 60 Subpart OOO requirements.

40 CFR 60 Subpart Y:
Solvay has a "Coal Preparation Plant" as defined under 40 CFR 60 Subpart Y and must meet the requirements for all coal preparation related sources. The Coal Crushing and Storage (AQD #10), Coal Transfer Station (AQD #11), and Boiler Coal Bunker (AQD #14) baghouse-controlled sources shall meet an opacity limit of less than 20 percent.

40 CFR 60 Subpart Dc:

The #3 gas boiler is subject to 40 CFR 60 Subpart Dc, but there are no applicable requirements.

PERMIT CONDITIONS:

Allowable emission rates, opacity limits and other source specific regulatory requirements are summarized in the Emission Source and Source Observations Summary included with this report.

The following lists the conditions in Operating Permit 30-126. Status, where appropriate, has been given.

Facility-Wide Permit Conditions
(F1) SODA ASH PRODUCTION:
Maximum soda ash production not exceed 3.60 MMTPY from no more than 6.78 MMTPY of trona ore.

Source-Specific Permit Conditions
(F2) VISIBLE EMISSIONS:
(a) Visible emissions from the #1 and #2 Coal Fired Boilers shall not exceed 20 percent opacity except for one six-minute period per hour of not more than 27 percent opacity.
(b) Visible stack emissions from the Coal Crushing and Storage, Coal Transfer Station, and Boiler Coal Bunker baghouse sources shall not exhibit 20 percent opacity or greater.
(c) Visible stack emissions from the baghouse and bin vent sources shall not exhibit greater than seven percent opacity.
(d) Visible emissions from the Generator Engine-(C/S Plant), Steam Plant Generator Engines, and Fire Pump Engine shall not exceed 30 percent opacity except for periods not exceeding ten consecutive seconds. This limitation shall not apply during a reasonable period of warm-up following a cold start or where undergoing repairs and adjustment following a malfunction.
(e) Visible emissions from the Emergency Pony Boiler shall not exhibit greater than 20 percent opacity, except 40 percent opacity shall be permitted for not more than two minutes in any hour.
(f) No visible fugitive emissions shall be generated from the #1 trona products transloading operation.
(g) Unless a different limit is specified elsewhere in this permit, visible emissions of any contaminant discharged into the atmosphere from any other single source of emission shall not exhibit greater than 20 percent opacity except for one period or periods aggregating not more than six minutes in any one hour of not more than 40 percent opacity.

Status: The new "D" Ore Calciner, and the new DR-6 Product Dryer stacks were observed to be emitting blue-white smoke with opacities of approximately 10% and 5% respectively. All other stacks were clear.

(F3) PARTICULATE, SO2, NOX, AND CO EMISSIONS:

(a) Particulate, SO2, NOx, and CO emissions shall not exceed the limits specified in Table I of the operating permit.
(b) Operating hours for the Coal Crushing and Storage, Coal Transfer Station, Boiler Coal Bunker, and Lime Unloading baghouse sources shall be limited to 4380 hours per calendar year.

Status: Solvay will be required to maintain and operate all the equipment listed in Table I of the operating permit so the listed particulate, SO2, NOX, and CO emission limits are not exceeded.

(F4) OPERATION AND MAINTENANCE:
(a) Conduct preventative maintenance, inspections, and corrective actions if necessary on each facility baghouse, bin vent filter, venturi scrubber, and electrostatic precipitator, in accordance with the Preventative and Corrective Maintenance Plan (PM).
(b) Minimize CO emissions from the "A" and "B" Calciners, "C" Calciner, and "D" Calciner through proper operating procedures as outlined in the operational plan. Revise the plan as necessary to ensure minimization of CO emissions.
(c) The Generator Engine, the Steam Plant Generator Engines #1 and #2, the Emergency Fire Pump Engine, and the Emergency Pony Boiler are limited to 500 hours of operation per year as emergency equipment.

Status: Solvay will be required to maintain and inspect, the baghouse, bin vent, scrubber, and ESP controlled sources and take corrective actions to ensure proper operation in accordance with the PM plan.
Solvay will be required to minimize CO emissions from the calciners through proper operation outlined in the calciner operational plan.

(F5) MAJOR EQUIPMENT PROCESS RATES:
(a) Trona ore feed rate to each of the "A" and "B" Calciners, and the "C" Calciner shall not exceed a maximum instantaneous production rate of 200 TPH. The Trona ore feed rate to the "D" Calciner shall not exceed a maximum instantaneous production rate of 275 TPH
(b) The Soda ash production rates from the dryer kilns shall not exceed the rates listed in Table II of the operating permit.
(c) Operate the FCC process at feed rates not to exceed 1,460 lb/hr wet cake (including recycle), to produce no more than 720 lb/hr dry FCC product.

Status: During this inspection the "A" Calciner was processing 162 TPH; the "B" Calciner was processing 120 TPH; the "C" Calciner was down; and the "D" Calciner was processing 200 TPH. The DR-1 Product Dryer was processing 62 TPH (limit 85 TPH); the DR-2 and DR-4 Product Dryers were down; the DR-5 Product Dryer was processing 117 TPH (limit 155 TPH); and the DR-6 Product Dryer was processing 120 TPH (limit 161 TPH). The FCC process construction (CT-1416) has been discontinued.

(F6) COMMENCEMENT OF CONSTRUCTION:

If construction under permit CT-1347 is discontinued for a period of 24 months or more and modification of the "B" Calciner has not been completed, all applicable portions of permit CT-1347 and the operating permit pertaining to this equipment shall become invalid.
If construction under permit CT-1416 is discontinued for a period of 24 months or more, all applicable portions of permit CT-1416 and the operating permit pertaining to the FCC Dryer shall become invalid.

Status: Construction on the "D" Train Primary Ore Screening baghouse is almost complete. The apron feeder still needs to be modified. Construction on the Ore Transfer Point baghouse is complete but can't operate until the Primary Ore Screening baghouse construction is complete. Construction on the "D" Ore Calciner, the "D" Train Dryer Area baghouse, and the DR-6 Product Dryer is complete and the units have been performance tested. The Product Silo, the #3 Gas Boiler, and the Bucket Elevator have not yet been constructed. Construction of the FCC Dryer and the FCC Product Silo Vent & Truck Loading baghouse has been canceled.

Testing Requirements
(F7) CALCINER AND DRYER TESTING:
(a) Performance tests for opacity, particulate and NOx emissions, at minimum, shall be conducted on the "D" Ore Calciner, and the DR-6 Product Dryer within 30 days of achieving maximum design rate but not later than 90 days after initial start-up. (b) Method 5 sampling train shall be used with the back half impinger catch analyzed by the protocol defined by Method 202.
(c) Method 7 or an alternative method approved by the Administrator shall be used to measure NOx emissions.
(d) Method 9 shall be used to measure visible emissions.
(e) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

Status: The "D" train calciner was performance tested on March 1-2, 2001. Solvay submitted the test results under cover letter dated May 21, 2001. The Division reviewed the test results on June 8, 2001 and review of the test data showed the calciner to be operating in compliance with the particulate and NOx emission limits set by permit CT-1347. The "D" train dryer was tested on June 11-13, 2001. The test results have not yet been submitted to the Division.

(F8) ORE AND PRODUCT BAGHOUSES AND VENTS:
(a) Performance tests for opacity and particulate shall be conducted on the "D" Train Primary Ore Screen Baghouse, the Ore Transfer Point Baghouse, the "D" Train Dryer Area Baghouse, the Product Silo Baghouse, the Sulfite Bag-Dump Baghouses 1 and 2, the Trona Products Bin Bag Filter, the Trona Products Rail Loadout Baghouse, the Sulfite Loadout Baghouse, and the Trona Products Loadout Bin Vent within 30 days of achieving maximum design rate but not later than 90 days after initial start-up.
(b) Method 5 sampling train shall be used with the back half impinger catch analyzed by the protocol defined by Method 202.

(c) Method 9 shall be used to measure visible emissions.
(d) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

Status: Solvay will be required to perform performance tests for opacity and particulate on the "D" Train Primary Ore Screen, the Ore Transfer Point, the "D" Train Dryer Area, the Product Silo, the Sulfite Bag-Dump 1 and 2, the Trona Products Bin, the Trona Products Rail Loadout, the Sulfite Loadout, and the Trona Products Loadout baghouse and bin vent sources. Testing for the "D" Train Primary Ore Screen baghouse will be performed as soon as modification to the apron feeder is complete (limit 2.45 lb/hr). Solvay intends on applying for a waver for testing on the Ore Transfer Point (limit 0.84 lb/hr), the "D" Train Dryer Area (limit 0.50 lb/hr), the Product Silo (limit 0.41 lb/hr), the Sulfite Bag-Dump 1 and 2 (limit 0.05 lb/hr), the Trona Products Bin (limit 0.30 lb/hr), the Trona Products Rail Load out (limit 0.17 lb/hr), the Sulfite Load out (limit 0.30 lb/hr), and the Trona Products Load out (limit 0.10 lb/hr) baghouse and bin vent sources.

(F9) PARTICULATE EMISSIONS TESTING:
(a)(i) Test the "A" and "B" Calciners, and "D" Calciner at least once during the permit term.
(ii) For the "A","B", and "D" Calciners, a Method 5 sampling train shall be used with the back half impinger catch analyzed by the protocol defined by Method 202.
(b) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

Status: Solvay will be required to perform particulate emission tests on the "A" & "B" and "D" Calciners at least once during the permit term. Testing is to be performed utilizing Methods 1-5/202. The "D" Calciner was tested in March, 2001.

(F10) NOX EMISSIONS TESTING:
(a) Test the "A" and "B" Calciners and the DR-6 Product Dryer annually at minimum to assess compliance with the NOx emission limits. Method 7 or an alternative method approved by the Administrator shall be used to measure NOX emissions.
(b) Test the "C" Calciner, "D" Calciner, and Product Dryer #5 at least once during the permit term to assess compliance with the NOx emission limits. Method 7 or an alternative method approved by the Administrator shall be used to measure NOX emissions.
(c) For the DR-6 Product Dryer, if compliance is demonstrated by the performance test, this shall satisfy the testing required under this condition for the calendar year in which the compliance test was performed.
(d) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

Solvay will be required to perform NOx emission tests on the "A" and "B" Calciners and the DR-6 Dryer annually. Solvay will be required to perform NOx emission tests on the "C" Calciner, the "D" Calciner, and the Dryer #5 at least once during the operating permit term. The "D" Calciner was tested in March, 2001. The DR-6 Dryer was tested in June, 2001.

(F11) ADDITIONAL TESTING:
(a) The Division reserves the right to require additional testing as provided under condition G1 of this permit. Should testing be required, (i) For the #1 and #2 Coal Fired Boilers, particulate emissions, SO2 emissions, NOx emissions, and the opacity of visible emissions shall be measured as specified in 40 CFR 60 Subpart D §60.46. (ii) For the affected sources listed in Table V of the operating permit, particulate emissions and the opacity of visible emissions shall be measured as specified in 40 CFR 60 Subpart OOO §60.675. (iii) For the trona processing sources, particulate emissions shall be measured using Method 5 sampling trains with the back half impinger catch analyzed by the protocol defined by Method 202. (iv) For the affected sources listed in condition NSPS-Y1, visible emissions shall be measured as specified in 40 CFR 60 Subpart Y §60.254. (v) For other sources and pollutants, methods approved by the Administrator shall be used to measure emissions.
(b) Testing shall be conducted in accordance with WAQSR Chapter 5, Section 2(h).

Status: No additional testing is planned at this time.

Monitoring Requirements
(F12) BAGHOUSE & BIN VENT VISIBLE AND PARTICULATE EMISSIONS MONITORING: (a) Conduct, at minimum, weekly visual observations of each baghouse and bin vent source, listed in Table III of the operating permit, to determine the presence of visible emissions and the effectiveness of the control measures.
(b) The visual observations shall be conducted by a person who is educated on the general procedures for determining the presence of visible emissions but not necessarily certified to perform Method 9 observations.
(c) Observation of visible emissions from any baghouse or bin vent shall prompt immediate inspection and, if necessary, corrective actions as described in the PM Plan.
(d) The visible emissions monitoring, combined with adherence to the PM Plan, shall serve as a surrogate to periodic monitoring for particulate emissions.
(e) Monitor the operating hours for the Coal Crushing and Storage, Coal Transfer Station, Boiler Coal Bunker, and Lime Unloading baghouse sources so the operating hour limits are not exceeded.

Status: Solvay will be required to make, at minimum, weekly visual observations of each baghouse and bin vent, listed in Table III of the operating permit. If visible emissions are observed Solvay is required to immediately inspect and correct the problem. Solvay will be required to monitor the operating hours for the coal handling baghouse sources and the lime unloading baghouse so the 4380 hours per calendar year limit is not exceeded.

(F13) SCRUBBER VISIBLE AND PARTICULATE EMISSIONS MONITORING:
(a)(i) For the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Sulfite Dryer, Carbon/Perlite Scrubber, and Metabisulfite Dryer, perform a six-minute Method 9 test while simultaneously measuring each scrubber's pressure drop and liquor recirculation rate. The

Method 9 observations shall be conducted by a qualified observer certified in accordance with Section 3.1 of Method 9 and shall follow the requirements and procedures of Method 9. (ii) The Method 9 observations shall be performed during the first calendar quarter after the operating permit is issued.
(b)(i) For the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Sulfite Dryer, Carbon/Perlite Scrubber, and Metabisulfite Dryer, take, at minimum, weekly measurements of each scrubber's pressure drop to ensure the pressure drop is within plus or minus 30 percent of the values obtained during the tests under paragraph (a)(i) of this condition. (ii) For the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Sulfite Dryer, Carbon/Perlite Scrubber, and Metabisulfite Dryer, take, at minimum, weekly measurements of each scrubber's liquor recirculation rate to ensure the recirculation rate is not less than 70 percent of the value obtained during the tests under paragraph (a)(i) of this condition. (iii) In the event of parameter measurements outside the acceptable range, corrective actions shall be taken according to the PM Plan. (iv) The parameter measurements described in paragraph (b)(i) of this condition, combined with adherence to the PM Plan, shall serve as a surrogate to periodic monitoring for visible emissions.
(c) Historical performance test results, combined with adherence to the PM Plan, shall serve as a surrogate to periodic monitoring for particulate emissions from the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Sulfite Dryer, and Metabisulfite Dryer.

Status; For the steam tube dryer scrubber, the fluid bed dryer scrubber, the sulfite dryer scrubber, the carbon/perlite scrubber, and the metabisulfite dryer scrubber, Solvay will be required to perform a Method 9 test while simultaneously measuring each scrubber's pressure drop and liquor recirculation rate. Weekly measurements, at minimum, are then made of each scrubber's pressure drop to ensure the pressure drop is within plus or minus 30% of the value obtained during the Method 9 test. Weekly measurements, at minimum, must also be made to ensure the recirculation rate is not less than 70% of the value obtained during the Method 9 test.

(F14) ESP VISIBLE AND PARTICULATE EMISSIONS MONITORING:
(a) Calibrate, operate, and maintain continuous emissions monitoring (COM) systems to measure opacity from the "A" and "B" Calciners, "C" Calciner, "D" Calciner, Product Dryer #5, and Product Dryer #6.
(b) The COM required in paragraph (a) of this condition shall be installed, calibrated, and operated per the requirements set forth in WAQSR Chapter 5, Section 2 (j).
(c) Opacity monitoring requirements for the #1 and #2 Coal Fired Boilers are specified under condition NSPS-D1.
(d)(i) Periodic monitoring for particulate emissions from the "A", "B", and "D" Calciners shall consist of the testing required under condition F9 and adherence to the PM Plan. (ii) Periodic monitoring for particulate emissions for Product Dryer #6 shall consist of the testing required under condition F7 and adherence to the PM Plan. (iii) The historical performance test results, combined with adherence to the PM Plan, shall serve as a surrogate to periodic monitoring for particulate emissions from the #1 and #2 Coal Fired Boilers, "C" Calciner, and Product Dryer

#5.

Solvay will be required to calibrate, operate, and maintain COM systems on the "A" and "B", "C", and "D" calciners and the dryer #5 and dryer #6 per the requirements in WAQSR Chapter 5, Section 2 (j). Solvay will be required to calibrate, operate, and maintain COM systems on the coal fired boilers per the requirements in Subpart D.

(F15) NOx EMISSIONS MONITORING:
(a) Periodic monitoring for NOX emissions from the "A" and "B" Calciners, "C" Calciner, "D" Calciner, Product Dryer #5, and the Product Dryer #6 shall consist of the testing required under condition F10.
(b) NOX emissions monitoring requirements for the #1 and #2 Coal Fired Boilers are specified under condition NSPS-D1.
(c) Periodic monitoring for NOx emissions from the DR-1 and 2 Steam Tube Dryers and Sulfur Burner and the #3 gas boiler, shall consist of operating and maintaining each unit such that NOx emissions are minimized.
(d) Periodic monitoring for NOx emissions from the Trona Products Dryer, Metabisulfite Dryer, FCC Dryer, and the Pony Boiler is not required since NOx emissions from these sources are of trivial environmental importance.

Status: See F10, NSPS D-1.

(F16) OTHER EMISSIONS MONITORING:
(a) SO2 emissions monitoring requirements for the #1 and #2 Coal Fired Boilers are specified under condition NSPS-D1.
(b) Periodic monitoring for SO2 emissions from the Sulfur Burner, Metabisulfite Dryer, and Bisulfite Loadout is not required since SO2 emissions from these sources are of trivial environmental importance.
(c) Periodic monitoring for CO emissions from the #1 and #2 Coal Fired Boilers is not required since CO emissions from these sources are of minimal concern.
(d) Periodic monitoring for particulate emissions from the Pony Boiler is not required since particulate emissions from this source are of trivial environmental importance.
(e) Conduct quarterly visible observations for emissions coming from the #1 trona products transloading operation. The visual observations shall be conducted by a person who is educated on the general procedures for determining the presence of visible emissions but not necessarily certified to perform Method 9 observations.

Solvay will be required to make quarterly visible observations of the #1 trona products transloading operation.

(F17) TRONA ORE AND SODA ASH PRODUCTION MONITORING: Monitor trona ore and soda ash production.

(a) For trona ore production, survey the volume of the trona ore mined for the calendar year and apply a density factor to determine the tonnage mined. To account for solution mining, monitor the flow and concentration of both the solution that injected into the mine, and the solution recovered from the mine, then calculate the tonnage produced. The sum of the solution mined tonnage and the mechanically mined tonnage will be compared to the permitted trona ore rate.
(b) For the soda ash production, inventory the tonnage of soda ash in storage annually on December 31. The beginning inventory of soda ash plus the amount of soda ash shipped in bags, trucks and railcar, as determined by certified scales, less the ending inventory of soda ash.

Status: Solvay will be required to monitor trona ore and soda ash production. For trona ore production, Solvay is required to survey the volume of trona mined for the calendar year and then apply a density factor to determine tons mined. For solution mining Solvay is required to monitor the flow and concentration of the solution injected into the mine and the solution recovered and then calculate tons produced. The sum of the solution mined tons and the mechanically mined tons are then compared to the 6.78 MMTPY trona ore limit to determine compliance. For soda ash production Solvay will be required to inventory the tons of soda ash in storage on December 31 each year. The beginning inventory plus the amount of soda ash shipped in bags, trucks, and railcar, as determined by certified scales, less the ending inventory are then compared to the 3.60 MMTPY soda ash production limit.

(F18) PROCESS RATE MONITORING:
(a) Monitor the trona ore feed rates to each of the "A" and "B" Calciners, "C" Calciner, and "D" Calciner and the soda ash production rates from the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Product Dryer #5, and Product Dryer #6.
(b) Monitor the FCC process feed and production rates.

Status: Solvay will be required to monitor the trona ore feed rates to each calciner and monitor the soda ash production from the dryer kilns. Construction on the FCC process has been discontinued.

(F19) AMBIENT PARTICULATE AND METEOROLOGICAL MONITORING:
(a) Operate in accordance with the requirements of 40 CFR Parts 50 and 58 an ambient air monitoring network.
(b) Maintain a meteorological station.

Status: The FY'2000 collection efficiency for the PM-10 ambient monitoring site 1 was 96.8%; the PM-10 site 2A collection efficiency was 100% ; and the PM-10 site 2B collection efficiency was 93%. For the first quarter FY-2001 all three site's collection efficiencies were 100%. The site 2 TSP monitor was removed per Division approval the second quarter FY'2000. The TSP monitor was replaced by the co-located PM-10 site 2B which began operation the fourth quarter FY'2000.

Recordkeeping Requirements
(F20) MAINTENANCE RECORDS:
(a) Record all maintenance and inspection activities performed on each baghouse, bin vent filter, venturi scrubber, and electrostatic precipitator.
(b) The record of maintenance and inspection activities for each unit shall include: (i) The maintenance activity performed; (ii) The date, place, and time the activity was performed; (iii) The company and individual(s) that performed the activity; (iv) The purpose of the activity; and (v) An explanation for any deviation from the PM Plan.
(c) Retain on-site at the facility the record of each maintenance or inspection activity for a period of five years.
(d) Retain on-site at the facility the data generated under the Calciner Burner Operational Plan for CO minimization for a period of at least five years.

Status: Solvay will be required to record all maintenance and inspection activities performed on each baghouse, bin vent, scrubber, and ESP.

(F21) TEST RECORDS:
(a) For the emissions testing required under conditions F7, F8, F9 and F10, and for any additional testing required under condition F11 other than Method 9 observations, record, as applicable, the following: (i) The date, place, and time of sampling or measurements; (ii) The date(s) the analyses were performed; (iii) The company or entity that performed the analyses; (iv) The analytical techniques or methods used; (v) The results of such analyses; and (vi) The operating conditions as they existed at the time of sampling or measurement.
(b) For any Method 9 observations required under condition F7, F8, and F11(a) keep field records in accordance with Section 2.2 of Method 9.
(c) Retain on-site at the facility the record of each test, measurement, or observation and support information for a period of at least five years.

Status: Solvay will be required to record any testing performed. For Method 9 observations Solvay is required to keep field records per Section 2.2 of Method 9.

(F22) BAGHOUSE AND BIN VENT MONITORING RECORDS:
(a) For the visible emissions monitoring specified under condition F12, record, as applicable, the following: (i) The date, place, and time of the observation; (ii) The company or entity that performed the observation; (iii) The observation techniques or methods used; (iv) The observation results; (v) The operating conditions as they existed at the time of the observation; and (vi) Any corrective actions taken upon observing visible emissions from the baghouses or bin vents or detecting noncompliance with opacity limitations.
(b) Record the operating hours for the Coal Crushing and Storage, Coal Transfer Station, Boiler Coal Bunker, and Lime Unloading baghouse sources monitored under condition F12(e).
(c) Retain on-site at the facility all records kept in accordance with this condition for a period of at least five years.

Status: Solvay will be required to record any visible emissions monitoring and any corrective actions taken upon observing visible emissions from the baghouses and bin vents. Solvay will be required to record the operating hours for the coal handling baghouses and the lime unloading baghouse.

(F23) SCRUBBER MONITORING RECORDS:
(a) For the Method 9 observations required under condition F13(a)(i), take field records in accordance with Section 2.2 of Method 9 and record each scrubber's average pressure drop and liquor recirculation rate.
(b) For the weekly measurements specified under condition F13(b)(i) and (ii), record the scrubber pressure drop and liquor recirculation rate, date and time of the measurement, and any corrective actions taken as required under condition F13(b)(iii).
(c) Retain on-site at the facility all records kept in accordance with this condition for a period of at least five years.

Status: Solvay will be required to take field records for the Method 9 observations required to establish the operating parameters for each scrubber and record each scrubber's pressure drop and liquor recirculation rate corresponding to the Method 9 observations.

(F24) ESP MONITORING RECORDS:
(a) Recordkeeping for the COM systems on the "A" and "B" Calciners, "C" Calciner, "D" Calciner, Product Dryer # 5, and Product Dryer #6 shall comply with the requirements of WAQSR Chapter 5, Section 2(g).
(b) Retain on-site at the facility all records kept in accordance with paragraph (a) of this condition for a period of at least five years.
(c) Recordkeeping for the COM systems on the #1 and #2 Coal Fired Boilers is specified under condition NSPS-D2.

Status: Solvay will be required to maintain records for the COM systems for the calciners and dryers per WAQSR Chapter 5, Section 2(g). Solvay will be required to maintain records for the COM systems for the coal fire boilers per Subpart D.

(F25) NOX EMISSIONS MONITORING RECORDS:
Recordkeeping for the continuous NOX emissions monitoring systems on the #1 and #2 Coal Fired Boilers is specified under condition NSPS-D2.

Status: Solvay will be required to maintain records for the CEM (NOx) systems for the coal fired boilers per Subpart D.

(F26) SO2 EMISSIONS MONITORING RECORDS:
Recordkeeping for the continuous SO2 emissions monitoring systems on the #1 and #2 Coal

Fired Boilers is specified under condition NSPS-D2.

Status: Solvay will be required to maintain records for the CEM (SO2) systems for the coal fired boilers per Subpart D.

(F27) TRONA ORE AND SODA ASH PRODUCTION RECORDS:
(a) Maintain records of annual trona ore and soda ash production.
(b) Retain on-site at the facility all records kept in accordance with this condition for a period of at least five years.

Status: Solvay will be required to record the annual trona ore and soda ash production.

(F28) PROCESS RATE AND OTHER MONITORING RECORDS:
(a) Maintain records of trona ore feed rates for the calciners and soda ash production rates for the dryers.
(b) Maintain records of the FCC process feed and production rates.
(c) Maintain records of the visible emissions observations of the #1 trona products transloading operation.
(d) Retain on-site at the facility all records kept in accordance with this condition for a period of at least five years.

Status: Solvay will be required to record the trona ore feed rates for the calciners and the soda ash production rate for the dryers. Construction on FCC process has been discontinued. Solvay will be required to record the visible emissions observations for the #1 trona products transloading operation.

(F29) AMBIENT PARTICULATE AND METEOROLOGICAL MONITORING RECORDS:
(a) Maintain records of the data generated by the ambient particulate monitoring network and the meteorological station.
(b) Retain on-site at the facility all ambient particulate and meteorological monitoring records for a period of at least five years.

Status: Solvay will be required to record the data generated by the ambient particulate monitors and the meteorological station (see F19).

Reporting Requirements
(F30) MAINTENANCE REPORTS:
(a) Report to the Division by January 31 and July 31 each year whether the permitted has adhered to the PM Plan for emissions control equipment and the Calciner Burner Operational Plan for CO minimization.
(b) Any deviations from the PM Plan or the Calciner Burner Operational Plan must be clearly identified in each report.

(c) If the permitted has adhered to the PM Plan and the Calciner Burner Operational Plan during the reporting period, this shall be stated in the report.

Status: Solvay will be required to submit semi-annual maintenance reports by January 31 and July 31 each year. The reports must state whether the Preventive and Corrective Maintenance Plan and the Operational Plan for CO minimization has been adhered to and any deviations from the plans. All reports pertaining to the operating permit must be signed by the designated responsible official.

(F31) TEST NOTIFICATION AND REPORTS:
(a) For the performance tests required provide the Division 15 days prior notice of the test date.
(b) Submit the results of the tests within 45 days of conducting the tests. The reports shall include the information specified under conditions F21(a) and (b) and F23(a) and shall be submitted to the Division in accordance with condition G4.

Status: For performance tests Solvay is required to give 15 days prior notice of the test date. Solvay will be required to submit reports for the performance test results and any other tests results to the Division within 45 days of conducting the tests.

(F32) SEMIANNUAL EMISSIONS MONITORING REPORTS:
(a) The following shall be reported to the Division by January 31 and July 31 each year: (i) Summary results of the baghouse and bin vent visible emissions monitoring: only monitoring during which visible emissions are observed and any corrective actions taken upon observing visible emissions shall be included in the report. If no visible emissions are observed during the reporting period, this shall be stated in the report. (ii) A report which itemizes all time periods when the scrubber pressure drop or liquor recirculation rate for the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Sulfite Dryer, Carbon/Perlite Scrubber, and Metabisulfite Dryer fall outside the acceptable parameters as stated in F13(b)(i) and F13(b)(ii) as established during the most recent performance test on that unit. The report shall include the magnitude and duration of any exceedance, and any corrective actions taken as required under condition F13(b)(iii). If no exceedances of the parameter ranges have occurred during the reporting period, this shall be stated in the report. (iii) The calendar year-to-date operating hours for the Coal Crushing and Storage, Coal Transfer Station, Boiler Coal Bunker, and Lime Unloading baghouse sources. (iv) Summary results of the visible emission observations for the #1 trona products transloading operation.
(b) All instances of deviations from the conditions must be clearly identified in each report.
(c) The reports shall be submitted to the Division in accordance with condition G4 of this permit.

Status: Solvay will be required to submit semi-annual reports for the baghouse and bin vent monitoring by January 31 and July 31 each year. A summary of only monitoring in which visible emissions are observed and the corrective actions taken should be included in the report. Solvay will be required to submit in the semi-annual report all time periods when the scrubbers

fall outside the parameters established during the required performance test for each unit. The report must include the magnitude and duration of each deviation from the established parameters and the corrective actions taken. Solvay will be required to submit in the semi-annual report the operating hours for the coal handling baghouses and the lime unloading baghouse.

(F33) AMBIENT PARTICULATE & METEOROLOGICAL MONITORING REPORTS:
(a) The ambient particulate and meteorological data shall be submitted within 60 days of the end of each calendar quarter.
(b) The reports shall be submitted in accordance with condition G4 of this permit.

Solvay has been submitting ambient particulate and meteorological data quarterly.

(F34) EXCESS OPACITY AND MONITORING SYSTEM PERFORMANCE REPORTS:
(a) Excess emissions reporting for the COM systems on the "A" and "B" Calciners,"C" Calciner, "D" Calciner, Product Dryer #5, and Product Dryer #6 shall comply with the requirements Chapter 5, Section 2(g).
(b) Submit an excess emissions and monitoring systems performance report quarterly. All reports shall be postmarked by the 30th day following the end of each calendar quarter. Written reports of excess emissions shall include the following information: (i) The magnitude of excess emissions, any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period. (ii) Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, malfunctions. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted. (iii) The date and time identifying each period during which the COM system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. (iv) When no excess emissions have occurred or the COMs have not been in operative, repaired, or adjusted, such information shall be stated in the report. (v) One summary report form for each pollutant monitored. (A) If the total duration of excess emissions for the reporting period is less than one percent of the total operating time for the reporting period and COM downtime for the reporting period is less than five percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report need not be submitted unless requested by the Administrator. (B) If the total duration of excess emissions for the reporting period is one percent or greater of the total operating time for the reporting period or the total COM downtime for the reporting period is five percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report shall both be submitted.
(c) For the purpose of reporting excess emissions are defined as any six minute period when the average opacity from any unit exceeds 20 percent.
(d) The frequency of reporting requirements for excess emissions and monitoring systems performance reports maybe reduced to semiannual reports as described in Chapter 5, Section 2(g)(iv).

(e) The reports shall be submitted in accordance with condition G4 of this permit.

Solvay has been submitting quarterly COM excess emissions reports for the "A" & "B" Calciner, the "C" Calciners, and the dryer #5. The monitor availability for the "A" & "B" Calciner for FY'2000 was 99.6%; the monitor availability for the "C" Calciner was 99.3%; and the monitor availability for the dryer #5 was 99.9%.
For the first quarter FY'2001 the monitor availability for the "A" & "B" Calciner was 99.5%; the monitor availability for the "C" Calciner was 98.3%; and the monitor availability for the dryer #5 was 100%. Solvay will be required to submit quarterly COM reports for the new "D" Calciner and the new dryer #6 beginning the second quarter FY'2001.

(F35) PRODUCTION AND PROCESS RATE REPORTS: Submit the following to the Division with the annual emission inventory:
(a) Trona ore and soda ash production.
(b) Any exceedances of the trona ore calciner feed rates or soda ash dryer production.
(c) Any exceedances of the FCC process feed and production rates.

Solvay will be required to submit trona ore and soda ash production reports annually. The report must contain any exceedances of the trona ore calciner rates, the soda ash dryer production rates, or the FCC process feed and production rates. The report is to be submitted with the annual emission inventory.

(F36) EXCESS EMISSIONS REPORTS AND DEVIATIONS FROM PERMIT REQUIREMENTS: (a) For the #1 and #2 Coal Fired Boilers, reporting requirements for excess SO2, NOX and visible emissions are described under condition NSPS-D3.
(b) General reporting requirements are described under the General Conditions.
(c) Emissions which exceed the limits specified shall be reported annually with the emissions inventory unless specifically superseded by condition G17, condition G21, or other condition(s). The probable cause of such exceedance, the duration of the exceedance, the magnitude of the exceedance, and any corrective actions or preventative measures taken shall be included in this annual report. For sources and pollutants which are not continuously monitored, if at any time emissions exceed the limits specified in this permit by 100 percent, or if a single episode of emission limit exceedance spans a period of 24 hours or more, such exceedance shall be reported to the Division within one working day of the exceedance. (Excess emissions due to an emergency shall be reported as specified in condition G17. Excess emissions due to abnormal conditions or equipment malfunction shall be reported as specified in condition G21.)
(d) Any other deviation from the conditions of this permit shall be reported to the Division in writing within 30 days of the deviation or discovery of the deviation.

Solvay will be required to submit excess emissions reports for the CEMs and COMs for the coal fired boilers quarterly. The excess emissions report is required to meet the requirements

described in Subpart D.

Stratospheric Ozone Protection Requirements
(F37) STANDARDS FOR APPLIANCES: Comply with the standards for recycling and emission reduction pursuant to 40 CFR Part 82, Subpart F except as provided for motor vehicle air conditioners (MVACs) in Subpart B:
(a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to §82.156.
(b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to §82.158.
(c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to §82.161.
(d) Persons disposing of small appliances, MVACs and MVAC-like appliances must comply with record keeping requirements pursuant to §82.166.
(e) Owners/operators of appliances normally containing 50 or more pounds of refrigerant must keep records of refrigerant purchased and added to such appliances pursuant to §82.166.

(F38) STANDARDS FOR MOTOR VEHICLE AIR CONDITIONERS: Service on motor vehicles involving ozone-depleting substances in the motor vehicle air conditioner is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B.

(F39) STANDARDS FOR LABELING: Comply with the standards for labeling of products using ozone-depleting substances pursuant to 40 CFR Part 82, Subpart E.

(F40) ALTERNATIVES TO OZONE-DEPLETING SUBSTANCES: Solvay is allowed to switch from any ozone-depleting substance to any alternative listed in the Significant New Alternatives Program promulgated pursuant to 40 CFR part 82, Subpart G.

Status: Concerning condition F37, Solvay hires a contractor to service and maintain their appliances that have refrigerant in them. There are six appliances which contain 50 or more pounds of refrigerant. Concerning condition F38, Solvay does not service any motor vehicle air conditions on-site. Concerning condition F39, none of Solvay's products contain or are processed with ozone-depleting substances.

NEW SOURCE PERFORMANCE STANDARDS SUBPART D REQUIREMENTS

(NSPS-D1): Meet all requirements of 40 CFR 60 Subpart D as they apply to the #1 and #2 Coal Fired Boilers.
(a) Meet all standards specified in §60.42(a)(1) for particulate emissions, §60.42(a)(2) for visible emissions, §60.43(a)(2) for SO2 emissions, and §60.44(a)(3) for NOX emissions. (i) The opacity limit specified in condition F2(a) is the opacity standard under §60.42(a)(2). (ii) Compliance with the SO2 emission limit specified in condition S4 is considered compliance

with the SO2 emission standard under §60.43(a)(2).
(b) Meet all monitoring requirements as specified in §60.45. Except for system breakdown, repairs, calibration checks, and zero and span adjustments required under WAQSR Chapter 5, Section 2 (j)(iv), all continuous monitoring systems shall be in continuous operation and shall meet minimum frequency of operation requirements as follows: (i) All continuous monitoring systems referenced by WAQSR Chapter 5, Section 2 (j)(iii)(A) and (B) for measuring opacity of emissions shall complete a minimum of one cycle of sampling and analyzing for each successive ten-second period and one cycle of data recording for each successive six-minute period. (ii) All continuous monitoring systems referenced by WAQSR Chapter 5, Section 2(j)(iii)(A) and (B) for measuring emissions, except opacity, shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15 minute period.

(NSPS-D2) RECORDKEEPING:
(a) Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the #1 and #2 Coal Fired Boilers; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. These records shall be retained on-site at the facility for a period of at least five years from the date of such occurrences.
(b) Maintain records of all measurements, including continuous monitoring system, monitoring device, and performance testing measurements; all continuous monitoring system performance evaluations; all continuous monitoring system or monitoring device calibration checks; adjustments and maintenance performed on these systems or devices; reports; and other information required by the NSPS conditions of this permit recorded in a permanent form suitable for inspection. These records shall be retained on-site at the facility for a period of at least five years from the date such records are generated.

(NSPS-D3) EXCESS EMISSIONS AND MONITORING SYSTEM PERFORMANCE REPORTS: (a) Submit an excess emissions and monitoring systems performance report (excess emissions are defined in paragraph (b) of this condition) and/or a summary report form (see paragraph (a)(v) of this condition) to the Administrator quarterly. All reports shall be postmarked by the 30th day following the end of each calendar quarter. Written reports of excess emissions shall include the following information: (i) The magnitude of excess emissions computed in accordance with WAQSR Chapter 5, Section 2(j)(viii), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period. (ii) Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, malfunctions of the #1 and #2 Coal Fired Boilers. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted. (iii) The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments. (iv) When no excess emissions have occurred or the continuous monitoring system(s) have not been in

operative, repaired, or adjusted, such information shall be stated in the report. (v) One summary report form for each pollutant monitored at the #1 and #2 Coal Fired Boilers in a format approved by the Division. (A) If the total duration of excess emissions for the reporting period is less than one percent of the total operating time for the reporting period and continuous monitoring system downtime for the reporting period is less than five percent of the total operating time for the reporting period, only the summary report form shall be submitted and the excess emission report described in paragraph (a) of this condition need not be submitted unless requested by the Administrator. (B) If the total duration of excess emissions for the reporting period is one percent or greater of the total operating time for the reporting period or the total continuous monitoring system downtime for the reporting period is five percent or greater of the total operating time for the reporting period, the summary report form and the excess emission report described in paragraph (a) of this condition shall both be submitted.
(b) For the purpose of reporting under this condition, excess emissions are defined as: (i) For opacity, excess emissions are defined under §60.45(g)(1). (ii) For SO2, excess emissions are defined under §60.45(g)(2). The reporting of exceedances of the state only SO2 emission limit as described in conditions S4 and S10 is considered compliance with the NSPS requirement.
(iii) For NOx, excess emissions are defined under §60.45(g)(3).
(c) Notwithstanding the frequency of reporting requirements specified in paragraph (a), excess emissions and monitoring systems performance reports maybe reduced to semiannual as described in Chapter 5, Section 2(g)(iv).
(d) The reports shall be submitted to the Division in accordance with condition G4 of this permit.

Status: The NOx monitor availability for FY'2000 for Boiler #1 was 100%; the opacity monitor availability was 100%; and the SO2 monitor availability was 99.4%. The NOx monitor availability for FY'2000 for Boiler #2 was 99.3%; the opacity monitor availability was 99.9%; and the SO2 monitor availability was 99%. The NOx, opacity, and SO2 monitor availability for the first quarter FY'2001 for Boiler #1 was 100%. The NOx monitor availability for the first quarter FY'2001 for Boiler #2 was 90.7% (see inspection concern 2.); the opacity monitor availability was 100%; and the SO2 monitor availability was 98.8%.

NEW SOURCE PERFORMANCE STANDARDS SUBPART Y REQUIREMENTS

(NSPS-Y1): Meet all requirements of 40 CFR 60 Subpart Y as they apply to the facility coal preparation plant including the Coal Crushing and Storage, Coal Transfer Station, and Boiler Coal Bunker baghouse sources.
(a) Not cause to be discharged into the atmosphere from any coal processing and conveying equipment, coal storage system, or coal transfer and loading system processing coal, gases which exhibit 20 percent opacity or greater as specified in §60.252(c). The visible emissions limit in condition F2(b) of this permit is the limit under §60.252(c).
(b) If emissions testing is required to demonstrate compliance with this subpart, testing shall follow all test methods and procedures specified in §60.254.

(NSPS-Y2) RECORDKEEPING:
(a) Maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the coal processing and conveying equipment (including breakers and crushers), coal storage systems, and coal transfer and loading systems; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. These records shall be retained on-site at the facility for a period of at least five years from the date of such occurrences.
(b) Maintain records of all measurements, reports, and other information required by the NSPS conditions of this permit recorded in a permanent form suitable for inspection. These records shall be retained on-site at the facility for a period of at least five years from the date such records are generated.

(NSPS-Y3) GOOD AIR POLLUTION CONTROL PRACTICE:
At all times, including periods of startup, shutdown, and malfunction, to the extent practicable, maintain and operate the Coal Crushing and Storage, Coal Transfer Station, and Boiler Coal Bunker baghouse sources including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

NEW SOURCE PERFORMANCE STANDARDS SUBPART OOO REQUIREMENTS

(NSPS-OOO1) SUBPART OOO REQUIREMENTS: Meet all requirements of 40 CFR 60 Subpart OOO as they apply to the sources listed in Table V of the operating permit.
(a) Meet all standards for particulate matter and opacity as specified in §60.672.
(b) Meet all testing and procedural requirements as specified in §60.675.
(c) Meet all reporting and recordkeeping requirements as specified in §60.676.

(NSPS-OOO2) RECORDKEEPING:
(a) maintain records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of the sources listed in Table V; any malfunction of the air pollution control equipment; or any periods during which a continuous monitoring system or monitoring device is inoperative. These records shall be retained on-site at the facility for a period of at least five years from the date of such occurrences.
(b) Maintain records of all measurements, reports, recorded in a permanent form suitable for inspection. These records shall be retained on-site at the facility for a period of at least five years.

(NSPS-OOO3) GOOD AIR POLLUTION CONTROL PRACTICE: At all times, including periods of malfunction, to the extent practicable, maintain and operate the sources listed in Table V including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions.

COMPLIANCE CERTIFICATION AND SCHEDULE

Compliance Certification
(C1) (a) Submit by January 31 each year a certification addressing compliance with the requirements of this permit. The certification shall be submitted as a stand-alone document separate from any monitoring reports required under this permit.
(b)(i) For trona ore and soda ash production, assess compliance with condition F1.

To assess compliance with condition F1 Solvay is required to monitor trona ore and soda ash production. For trona ore production, Solvay is required to survey the volume of trona mined for the calendar year and then apply a density factor to determine tons mined. For solution mining Solvay is required to monitor the flow and concentration of the solution injected into the mine and the solution recovered and then calculate tons produced. The sum of the solution mined tons and the mechanically mined tons are then compared to the 6.78 MMTPY trona ore limit to determine compliance.

For soda ash production Solvay is required to inventory the tons of soda ash in storage on December 31 each year. The beginning inventory plus the amount of soda ash shipped in bags, trucks, and railcar, as determined by certified scales, less the ending inventory are then compared to the 3.60 MMTPY soda ash production limit to determine compliance.

(ii) For visible emissions from the #1 and #2 Coal Fired Boilers, assess compliance with conditions F2(a) and NSPS-D1(a).
(iii) For visible and particulate emissions from the Coal Crushing and Storage, Coal Transfer Station, and Boiler Coal Bunker baghouse sources, assess compliance with conditions F2(b), F3(b), and NSPS-Y1(a).
(iv) For visible and particulate emissions from each baghouse and bin vent source assess compliance with conditions F2(c), F3(a), and NSPS-OOO1(a).
(v) For visible and particulate emissions from each other baghouse and bin vent source, the permittee shall assess compliance with conditions F2 and F3(a) by conducting monitoring required by condition F12 and by reviewing records kept in accordance with condition F20 and F22.
(vi) For visible emissions from the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Sulfite Dryer, Carbon/Perlite Scrubber, and Metabisulfite Dryer, assess compliance with condition F2(g) of this permit by conducting testing required by condition F13(a)(i) and monitoring required by conditions F13(b) and by reviewing records kept in accordance with condition F20 and F23.
(vii) For visible emissions from the "A" and "B" Calciners, "C" Calciner, "D" Calciner, Product Dryer #5, and Product Dryer #6, assess compliance with condition F2(g) by conducting monitoring required by conditions F14(a) and (b) and by reviewing records kept in accordance with condition F20 and F24.

To assess compliance with the visible emission limits set by condition F2(a) and NSPS-D1(a), for the coal fired boilers, Solvay is required to operate continuous opacity monitors (COMs). The COMs must meet all the requirements outlined in NSPS Subpart D. To assess compliance with the visible emission limits set by conditions F2(b), F2(c), and NSPS-Y1 for the coal handling baghouses, the NSPS Subpart OOO baghouses and bin vents, and each of the other baghouses and bin vents, Solvay is required to conduct, at minimum, weekly visual observations of each bag house and bin vent. If any visible emissions are observed then corrective actions are required (i.e. determine why the baghouses or bin vents are not operating properly and fix the problem). Solvay is also required to adhere to the "Preventive and Corrective Maintenance Plan" attached to the operating permit for each baghouse and bin vent. For the visible emission limits set by conditions F2(d), F2(e), and F2(f), for the emergency generators, and the fire pump engine, Solvay is required to adhere to the "Preventive and Corrective Maintenance Plan" attached to the operating permit. The generators and the fire pump engine are only operated during power outages or emergencies. For the fugitive emissions from the transloading operation, Solvay is required to conduct quarterly visible observations for emissions. To assess compliance with the visible emission limits set by condition F2(g), for the steam tube dryers, the fluid bed dryer, the sulfite dryer, the carbon/ perlite scrubber, and the metabisulfite dryer, Solvay is required to perform a Method 9 test while simultaneously measuring each scrubber's pressure drop and liquor recirculation rate. Weekly measurements, at minimum, are then made of each scrubber's pressure drop to ensure the pressure drop is within plus or minus 30% of the value obtained during the Method 9 test. Weekly measurements, at minimum, must also be made to ensure the recirculation rate is not less than 70% of the value obtained during the Method 9 test. For the "A" and "B" calciner, the "C" calciner, the "D" calciner, the dryer #5, and the dryer #6, Solvay is required to calibrate, operate, and maintain COM systems to measure opacity. The systems are required to be operated per the requirements set forth in WAQSR Chapter 5, Section 2(j).

(viii) For particulate emissions from the DR-1 and 2 Steam Tube Dryers, #1 and #2 Coal Fired Boilers, DR-4 Fluid Bed Product Dryer, Sulfite Dryer, "C" Calciner, Product Dryer #5, Metabisulfite Dryer, and Product Dryer #6 assess compliance with condition F3(a) by relying on the performance tests required by condition F7, historical performance test results provided in Table VI and by reviewing records kept in accordance with condition F20.
(ix) For particulate emissions from the "A" and "B" Calciners, and the "D" Calciner, assess compliance with condition F3(a) by conducting testing required by conditions F9 and by reviewing records kept in accordance with condition F20.
(x) For NOX emissions from the "A" and "B" Calciners and Product Dryer #6 assess compliance with condition F3(a) of this permit by conducting testing required by conditions F7 and F10(a).
(xi) For NOX emissions from the #1 and #2 Coal Fired Boilers assess compliance with conditions F3(a) and NSPS-D1(a) of this permit by conducting monitoring required by condition NSPS-D1(b), and reviewing the recordkeeping and reporting records required by NSPS-D2 and NSPS-D3.

(xii) For NOX emissions from the "C" Calciner, "D" Calciner, and Product Dryer #5, assess compliance with condition F3(a) by conducting testing required by condition F10(b).
(xiii) For NOX emissions from the DR-1 and 2 Steam Tube Dryers and Sulfur Burner, assess compliance with condition F3 (a) by conducting monitoring required by condition F15 (c).
(xiv) For SO2 emissions from the #1 and #2 Coal Fired Boilers, assess compliance with conditions F3(a), NSPS-D1(a), and S4 of this permit by conducting monitoring required by condition NSPS-D1 (b).
(xv) For the Coal Crushing and Storage, Coal Transfer Station, Boiler Coal Bunker, and Lime Unloading baghouse sources operating hours, assess compliance with condition F3(b) by conducting monitoring required by condition F12(e) and reviewing the records required by condition F22(b).

To assess compliance with the particulate emission limits set by condition F3(a): for the baghouses and bin vents, Solvay is required to perform the visible emissions monitoring described above, and adhere to the "Preventive and Corrective Maintenance Plan"; for the steam tube dryers, the coal fired boilers, the fluid bed dryer, the sulfite dryer, the "C" calciner, the dryer #5, the metabisulfite dryer, and the dryer #6, Solvay is required to perform Method 5/202 performance tests on the new dryer #6 and rely on historical performance test results; for the "A", "B", and "D" calciners, Solvay is required to test (Method 5/202) the calciners at least once during the operating permit term (5 years from the date of issue). To assess compliance with the NOx emission limits set by condition F3(a): for the "A" and "B" calciners and the dryer #6, Solvay is required to perform Method 7 performance tests on the new dryer #6 and perform Method 7 NOx emissions tests on the "A" and "B" calciners annually at minimum; for the coal fired boilers, Solvay is required to operate and maintain a COM system per the requirements of Subpart D; for the "C" calciner, the "D" calciner, and dryer #5, Solvay is required to perform Method 7 NOx emission tests at least once during the operating permit term (5 years); for the steam tube dryers and the sulfur burner, Solvay is required to operate and maintain each unit such that NOx emissions are minimized. To assess compliance with the SO2 emission limits set by condition F3(a), for the coal fired boilers, Solvay is required to operate and maintain a COM system per the requirements of Subpart D. To assess compliance with the baghouse operating hour limits set by condition F3(b), Solvay is required to monitor the baghouse operating hours so the 4380 hours per calendar year limit is not exceeded. Compliance with the CO emission limit in F3(a) for the coal fired boilers (17.50 lb/hr) is not required since CO emissions from these sources are considered to have trivial environmental importance. For each unit's specified emission limit and the operating hour limits see the Emission Source and Source Observation Summary of this inspection report.

(xvi) For trona ore feed rates to the "A" and "B" Calciners, "C" Calciner, and "D" Calciner assess compliance with condition F5(a) by conducting monitoring required by condition F18(a) and reviewing the records required by condition F28(a).
(xvii) For soda ash production rates from the DR-1 and 2 Steam Tube Dryers, DR-4 Fluid Bed Product Dryer, Product Dryer #5 and Product Dryer #6 assess compliance with condition F5(b)

by conducting monitoring required by condition F18(a) and reviewing the records required by condition F28(a).
(xviii) For the FCC process feed and production rates, assess compliance with condition F5(c) by conducting monitoring required by condition F18(b) and reviewing the records required by condition F28(b).

To assess compliance with the production rate limits set by condition F5(a) and F5(b) for the "A", "B", "C" and "D" calciners and the dryer kilns, Solvay is required to monitor the trona ore feed rates to each calciner and monitor the soda ash production from the dryer kilns so the rate limits are not exceeded. To assess compliance with the process feed rates for the FCC process set by condition F5(c), Solvay is required to monitor the FCC process feed and production rates so the rate limits are not exceeded.
(xix) For ambient particulate monitoring, assess compliance with condition F19 by reviewing records kept in accordance with condition F29. To access compliance with condition F19, Solvay is required to maintain records of the data generated by the ambient monitoring and meteorological station

(xx) For the Calciner Burner Operational Plan, assess compliance with condition F4(b) by reviewing records kept in accordance with condition F20(d).

To access compliance with the requirement to minimize CO emissions in condition F4(b), Solvay is required to retain on-site the data generated under the "Calciner Burner Operational Plan". The operational plan is attached to the operating permit.

(xxi) For the no visible emissions requirement for the #1 trona products transloading operation in condition F2(f) assess compliance by conducting t he monitoring required by condition F16(e) and reviewing the records required by condition F28(c).
(c) The compliance certification shall include:
(i) The permit condition or applicable requirement that is the basis of the certification;
(ii) The current compliance status;
(iii) Whether compliance was continuous or intermittent; and
(iv) The methods used for determining compliance.
(d) For any permit conditions or applicable requirements for which the source is not in compliance, submit with the compliance certification a proposed compliance plan and schedule.
(e) The compliance certification shall be submitted in accordance with condition G4 and to the Assistant Regional Administrator, Office of Enforcement, Compliance, and Environmental Justice (8ENF-T), U.S. EPA - Region VIII, One Denver Place, 999 18th Street - Suite 300, Denver, CO 80202-2466.
(f) Determinations of compliance or violations are not restricted to the monitoring requirements listed in paragraph (b) other credibl

EMISSION INVENTORY SUMMARY:

See the Emission Inventory Summary. This Table shows annual emissions and operating data for each source.

ANNUAL EMISSIONS SUMMARY:

See the Annual Emissions Summary. This Table summarizes total facility annual emissions for the past several years.

CONTINUOUS EMISSIONS MONITORING:

See the Continuous Emissions Monitoring summaries for the results of CEM monitoring. The results are presented in both annual and periodic form.

AMBIENT MONITORING SUMMARY:

See the Ambient Monitoring Summary for the results of ambient monitoring. The results are presented in both annual and periodic form.

7/23/01

WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
PROCESS DESCRIPTION
SOLVAY MINERALS
GREEN RIVER SODA ASH PLANT

Soda Ash Production

This plant is currently permitted by the Air Quality Division under permit CT-1347 to produce 3.6 million tons per year (TPY) of soda ash (sodium carbonate chemical product, Na2CO3); from 6.8 million tons per year of trona ore (sodium carbonate/bicarbonate mineral, Na2CO3 . NaHCO3 . 2H2O) which is mined underground at the plant site.

Ore processing involves crushing the trona ore to pea size and processing the ore by using a "monohydrate process". In the monohydrate process, the ground ore is first calcined in gas-fired kilns (to drive off chemically bound water, carbon dioxide, and volatile contaminants) and then dissolved in water (to separate out insoluble mining impurities such as mud/shale.) The soda ash liquor is then run through activated carbon beds to remove soluble impurities (dissolved organic contaminants) and filtered. This liquor is sent to "triple-effect" evaporators to remove the excess water from the dissolved soda ash, thereby producing wet soda ash crystals. The soda ash crystals are centrifuged to remove free moisture with final drying taking place in either the steam tube-heated ("A" & "B" lines) or direct gas-fired ("C" & "D" lines) dryer kilns. The soda ash is then screened for sizing before final shipment.

Basic facilities permitted for this project include an underground mine, surface ore handling facilities, a covered ore stockpile, a crushing facility, four chemical processing lines, product storage and shipping facilities, twin 350 million Btu per hour (MM Btu/hr) coal fired boilers, a 100 MMBtu/hr gas-fired boiler, and a covered coal storage building. Major processing equipment emission points include stacks from the calciners, dryers, and boilers. A single common stack (AQD #17) exhausts the emissions from both the A and B Calciners, while a separate stack (AQD #48) exhaust the emissions from the C Calciner. Stack AQD #15 exhausts the first two steam tube dryers on the A and B process trains, Stack AQD #28 exhausts emissions from a fluid bed dryer, and Stack AQD #51 exhausts the emissions from the gas-fired dryer on the C process line. The final major emission sources are the two coal-fired boiler stacks (AQD #18 & #19) and the mine vent. Other housekeeping dust collection baghouses are used throughout the plant for control of fugitive dust emissions from materials handling operations.

Alkaten Production

In addition to soda ash, permit CT-643A/OP-181 allows Solvay to produce an air dried trona ore product, used as a rumen buffer in animal feed, called Alkaten. A very fine (200 mesh) screened Alkaten product is also produced, called T-200. The facility is permitted with an Alkaten production capacity of 95,000 TPY. Basic equipment includes a trona ore

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crushing/screening facility, a gas fired product dryer, a product bagging facility, and a transloader to run Alkaten by truck to a rail loading site. These four emission points are each controlled by baghouses, identified as AQD Sources #25, #26, #27 & #45, respectively. In August, 1997, Solvay constructed a bagging facility which handles all of their packaging needs. Part of this construction is a pneumatic conveying system for the Alkaten to the multi-product bagging machine.

Caustic Production

There is a caustic soda (sodium hydroxide - NaOH) manufacturing facility on site, constructed under permit MD-117 in 1991. This facility has a design capacity of 75,000 TPY of 50% (by weight) caustic solution. The process involves bringing in lime (CaO) and "slaking" it with water to produce a calcium hydroxide (CaOH) solution. Sodium carbonate liquor is then reacted with the slaked lime to form a caustic solution that is concentrated in an evaporator. Emission points include the lime storage silo bin vents (AQD #30 & #31), the lime delivery baghouse (AQD #44) and the caustic evaporator (AQD #32).

Sodium Sulfite Production

Adjacent to the caustic plant is a sodium sulfite manufacturing facility, also constructed under permit MD-117 in 1991. Sodium sulfite (Na2SO3) is used for bleaching in pulp paper mills, in photography development, and as a food preservative. This production facility has a design capacity of 50,000 TPY of sodium sulfite. In this process, sulfur is burned to produce gaseous SO2 which is reacted with sodium carbonate liquor. The resultant sulfite liquor is crystallized in an evaporator, centrifuged, and dried in a gas fired dryer. Major emission points include the sulfur burner (AQD #33) and the sulfite dryer (AQD #35), with bin vents on four sodium sulfite storage silos (AQD #36-39), and sulfite bulk truck loadout (AQD #41). Vents from a HCl storage tank (AQD #42) and a liquid sulfur storage tank (AQD #43) complete the list of emission points for the sodium sulfite facility.

Sodium Metabisulfite Production

In the new sodium metabisulfite (MBS) process, soda ash and sodium bisulfite are fed into a digester to form sodium sulfite. The sodium sulfite solution is heated and fed into an absorber tower where it is contacted with sulfur dioxide from the existing sulfur burner to form a saturated sodium bisulfite solution. This solution is fed to a cooling crystallizer, where sodium metabisulfite crystals are formed. These wet MBS crystals are dried in a 2.5 MMBtu/hr gas-fired MBS dryer (AQD #73) to form the final MBS product. The dryer is capable of producing 2.3 TPH of MBS product from 2.84 TPH of wet crystal feed.

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