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ADEQ OPERATING AIR PERMIT

Pursuant to the Regulations of the Arkansas Operating Air Permit Program, Regulation #26:

Permit #: 762-AOP-R1

IS ISSUED TO:

Albemarle Corporation-Magnolia South Plant
Highway 79 South
Magnolia, AR 71753
Columbia County
AFIN: 14-00028

THIS PERMIT AUTHORIZES THE ABOVE REFERENCED PERMITTEE TO INSTALL, OPERATE, AND MAINTAIN THE EQUIPMENT AND EMISSION UNITS DESCRIBED IN THE PERMIT APPLICATION AND ON THE FOLLOWING PAGES. THIS PERMIT IS VALID BETWEEN:

March 10, 2000 and March 9, 2005

AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Keith A. Michaels Date Modified

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SECTION I: FACILITY INFORMATION

PERMITTEE:	Albemarle Corporation-Magnolia South Plant
AFIN:	14-00028
PERMIT NUMBER:	762-AOP-R1
FACILITY ADDRESS:	Highway 79 South
COUNTY:	Columbia
CONTACT POSITION:	Clarice Hanusz, Senior Environmental Engineer
TELEPHONE NUMBER:	(870) 235-6291
REVIEWING ENGINEER:	Bryan Leamons
UTM North-South (Y):	3669.711
UTM East-West (X):	479.704
Zone:	15

SECTION II: INTRODUCTION

Albemarle Corporation owns and operates a chemical manufacturing facility approximately seven miles south of Magnolia, Arkansas, which produces bromine and bromine-related compounds in several different processing areas. This facility is known as the *South Plant*.

Bromine-containing brine is extracted from geological formations via wells, and is pumped to a treatment area where the bromine is separated through chlorination, steam stripping, and condensation. The sour gas from the brine is treated in a sulfur-removal process, and is then either used for boiler fuel or flared.

Once the bromine has been isolated from the brine, it may be routed to one or more chemical processing units, where it is used in the manufacture of several different products: bromine chloride, ethylene dibromide, calcium bromide, zinc bromide, hydrogen bromide, alkyl amines, alkyl bromides, flame retardant materials, and other bromine-related by-products.

Operations at this facility are subject to regulation under the *Clean Air Act* as amended, the *Arkansas Water and Air Pollution Control Act*, the *Arkansas Air Pollution Control Code* (Regulation 18), the *Regulations of the Arkansas Plan of Implementation for Air Pollution Control* (Regulation 19), and the *Regulations of the Arkansas Operating Air Permit Program* (Regulation 26). The facility is also subject to applicable requirements of the *New Source Performance Standards* (NSPS, 40 CFR, Part 60), the *National Emission Standards for Hazardous Air Pollutants* (NESHAP, 40 CFR, Parts 61 and 63), and the *Standards for the Protection of Stratospheric Ozone* (40 CFR Part 82). As of this writing, the Department has not received delegation from the Environmental Protection Agency (EPA) in order to implement the program associated with 40 CFR Part 68, *Chemical Accident Prevention Provisions*. However, the facility is subject to this part, and has submitted related documentation to the EPA.

Albemarle's South Plant is also classified as a major stationary source as defined by 40 CFR 52.21, *Prevention of Significant Deterioration of Air Quality* (PSD). This permitting action, however, does not require PSD review, because the actual emission increases from the projects incorporated into this permit modification do not exceed the increase thresholds established in the PSD regulation.

The following table summarizes changes made with this permitting action.

Change	Type of change	Application date
NC-14, 95ND141/ Stabrom 909 - New scenario	Minor modification	5/1/00

Change	Type of change	Application date
increases bromine and chlorine each by 0.88 tons per year.		
Alkyl Amines Area , Alcohol addition system - A-3 insignificant storage tank and various instrumentation are added to insignificant list.	Administrative Amendment (Insignificant source)	5/25/00
NC-12, New heated air blower (SN-DB-04) & Backup scrubber (SN-DB-17) are permitted at Decabrom unit. PM/PM_{10} increases by 5.3 tpy each. Br_2+HBr emissions from SN DB-04 increased by 2.4 tpy, and new HBr emissions from SN-DB-17 were 0.44 tpy.	Minor modification	6/9/00
NC-17, Specific Condition 151 error - A source was referenced in error.	Administrative Amendment	6/15/00
NC-17, Specific Condition 152 removal - Requirement was removed to maintain minimum acid strength for SO_x scrubber SN-16-13. This requirement didn't make sense because lower acid strength would only allow better removal. A scrubber flow requirements are already in place as a compliance mechanism.	Administrative Amendment	6/15/00
Boilers, Specific Condition 170 - Testing requirement is removed PM/PM_{10} testing at #1 and #2 Boilers (SN-BH-01 & SN-BH-02) Testing was determined to be unnecessary due to reliability of the factors used.	Modification	7/13/00
DECTP, higher purity and emissions reroute - Purification (SN-DE-23) emissions are routed to the VGO (SN-DE-21). VGO HCl emissions increase by 25 tpy. This was determined to not be a MACT issue because no affected process units are constructed or reconstructed as part of the modification. Purification had the capacity	Modification	8/11/00

Change	Type of change	Application date
for the higher purity product beforehand. Only the emissions vent header will be constructed which allows the emissions to be routed to the VGO. Other emissions from these two sources change slightly.		
NC-23, emissions updates - SN-23-06, 07, and 08 emission bubble is changed to allow higher VOC and HBr emissions. Stack testing showed some occurrences of exceedances during multiple test runs. VOC is increased by 1.8 tpy and HBr is increased by 0.5 tpy. SN-23-03 emissions are lowered to reflect test data.	Modification	8/29/00
NC-12, increase Decabrom Product Dryer firing rate (SN-DB-04), increase DPO annual dry rate at storage tank (SN-DB-07), allow Decabrom usage of TBBPA packaging equipment - At SN-DB-04 combustion emissions increase slighlty. At the same source PM/PM10 emissions increase by 2.1 tpy and VOC is increased by 2.1 tpy. At SN-DB-07, HCl emissions increase by 0.6 tpy.	Minor modification	10/4/00
NC-17, New xylene formulation - At SN-16-18, 21, 22, and 23 xylene emissions are changed to include the possibility of mixed xylene or ethyl benzene.	Minor modification	11/17/00
NC-14, Bleach production - This is an additional change related to the 5/1/00 minor mod. Bleach production is permitted at the NC-14 reactor under existing permit limits.	Minor modification	12/6/00
Clear Completion Fluids - VOC emissions at SN-CB-02 and 16 are reduced to reflect test data. Annual SN-CB-04 VOC emissions were reduced to reflect updated emission calculation	Administrative amendment	1/9/01

Change	Type of change	Application date
methodology and annual methanol throughput limit.		
NC-14, Tank (SN-TB-26) - This tank is allowed ethylene glycol storage use. During these periods emissions are insignificant.	Administrative amendment	2/21/01
NC-23, Solvent tote bin (SN-23-14) - VOC emissions increase by 1.53 tpy.	Minor modification	3/15/01
Bromine area -Caustic drum (SN-BR-15) and generator usage (SN-MS-08) - Caustic Drum is allowed as an alternate control for periods when Bromine Area Scrubber is down. Additional Cl_2 and Br_2 emissions are 0.1 tpy each. Combustion emissions increase due to generator allowance with the greatest being NO_x and CO at 19.0 tpy each.	Minor modification	5/15/01
NC-14, NaBr production - This scenario is permits NaBr production increasing Br_2 and HBr emissions by 0.44 tpy each at SN-TB-03.	Minor modification	6/11/01
NC-15, update bromine rate at SN-15-02 and alternative compliance with SN-15-02 and SN-15-12 bromine rates - HBr and Br_2 rates at SN-15-02 are increases by 0.3 tpy each.	Minor modification	7/24/01
NC-23, Phenol Storage Tank (SN-23-15) - Emissions are routed to existing Vent Absorber (SN-23-05). VOC and phenol emissions at SN-23-05 increase by 0.4 tpy.	Minor modification	12/13/01
Bleach storage tank - a 6,000 gallon bleach storage tank was listed as an insignificant activity. No regulated emissions result from this activity.	Administrative amendment	1/9/02
DECTP, Vent header - SN-DE-01, 02, 03,09,	Minor modification	2/14/02

Change	Type of change	Application date
and 25 combine to SN-DE-28. No changes result only emissions are bubbled into new source (SN-DE-28).		
NC-21, HCl tank and gasoline through put - A new 10,000 gallon HCl tank is permitted with emissions routed to Incinerator (SN-21-01). Increased throughput at Gasoline Storage Tank (SN-MS-07) is permitted. Extra combustion emissions result at SN-21-01. VOC increases 0.7 tpy at SN-MS-07 along with various HAPs.	Minor modification	2/14/02
NC-14, Ethyl bromide production scenario - EtBr scenario is permitted under existing MeBr emission limits with some exceptions. Exceptions result in a VOC increase of 1.2 tpy and HBr increase of 0.1 tpy.	Minor modification	4/19/02
NC-17, Phthalic Anhydride (PA) Tank (SN-16-31) - PA tank is no longer vented to Scrubber (SN-16-02). PA emissions removed from the scrubber vent. PA and VOC emissions from SN-16-31 are listed at 0.8 tpy each resulting in a 0.4 tpy increase of the PA emissions.	Minor Modification	5/6/02
NC-23, Caustic Addition - The permittee is allowed to add caustic to recirculating solvent for corrosion prevention. This project allows 19.2 tpy of additional VOC. This project may or may not be related to other projects at NC-23 since the unit's construction in 1998 which have allowed total VOC increases of 39.3 tpy. Additional increases at this unit may trigger PSD review by causing total VOC increases exceeding 40 tpy depending on the relation ship between past and future projects. Bromoform is increased by 1.9 tpy and acetaldehyde ins increased by 0.9 tpy.	Minor Modification	5/7/02

Change	Type of change	Application date
Boilers, H_2S Monitoring Protocol - Specific Condition 169 regarding SN-BH-01 and 02 (Boilers) is adjusted to allow a decrease in monitoring frequency from every 15 minutes to every 6 hours. This is deemed appropriate after reviewing historical data from the past four quarterly reports of 15 minute data. The reports show low variance in emission rates and indicate little chance of exceeding permitted rates.	Modification	6/19/02
NC-17, Sulfuric Acid Storage Tank - T-9315 - This tank is now vented to the atmosphere and listed as an insignificant source (SN-16-32).	Administrative amendment	7/3/02
Molten Sulfur Tank - T9369	Administrative amendment	1/21/03
Brine Treatment Area - SN-BT-10 (T-292) is removed from Insignificant Activities list and listed as a permitted source to allow heat treatment of the tank contents.	Minor Modification	1/21/03
Alkyl Bromides Area - SN-AB-15 - Storage tank (T-83403B) is replaced with a new 11,130 gallon tank making it subject to NSPS Subpart Kb. Emissions are not affected as they remain routed to SN-AB-15.	Minor Modification	1/30/03
NC-12 Process Area - SN-DB-01 is changed out with a similar scrubber. No changes to emission rates or compliance mechanisms.	Minor Modification	2/21/03
Insignificant Activities List - Hot Oil Expansion Tank (T-9354) added for use at NC-16 & 17; Six Emergency use generators and fire pumps added; Hot oil Surge Tank (D-3490) added for use at NC-16 & 17; Molten Sulfur Pit and Loadout added for use at the	Administrative amendment	3/17/03

Change	Type of change	Application date
Sulfur recovery area.		
Sulfur Recovery Area (Gas Sweetening) - Sulfinol Storage Tank (SN-SL-02) is added. Emissions of VOC are increased by 0.6 tpy.	Minor Modification	3/17/03
NC-12 & NC-15 - Product Packaging is automated. Higher air flows at SN-15-16 increase PM/PM_{10} emissions by 2.1 tons per year.	Minor Modification	4/14/03
Backup Power Generators - A change is made to the original minor modification dated 5/15/01. A larger total capacity is allowed while firing of diesel fuel affecting pound per hour emission rates. Limits remain in effect for annual operation that limit generator usage below PSD thresholds. Annual emissions are unaffected.	Minor Modification	4/24/03

A summary of plantwide emissions is provided in the following table. Fugitive emissions have been calculated using usage data, monitoring data with EPA stratified factors, and EPA average SOCMI factors. Information on specific processes related to the listed emission units may be located on the pages indicated in the cross-reference column. The *Introduction* section of this permit, including the Emissions Summary Table, is for informational purposes only and does not contain enforceable conditions.

EMISSION SUMMARY

KEY: PM_{10}=Particulate <10 microns. SO_2=Sulfur Dioxide. VOC=Volatile Organic Compounds. CO=Carbon Monoxide. NO_X=Oxides of Nitrogen. HAP=Hazardous Air Pollutant. NCAC=Non-Criteria Air Contaminant.

Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page

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Source No.	Description	Pollutant	Emission Rates lb/hr	t[illegible]	Cross Reference Page
Total Allowable Emissions: Criteria Air Pollutants		PM_{10}	33.73	[illegible]	-
		SO_2	12817.5	[illegible]	
		VOC	418.87	578.97	
		CO	213.59	184.46	
		NO_X	174.41	464.07	
Total Allowable Emissions: Hazardous Air Pollutants (HAPs) *HAP emissions are included in VOC rates, where applicable.		Benzene[HAP]	5.26	4.38	-
		Bromoform[HAP]	5.03	4.49	

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
		Chlorine[HAP]	5.36		16.57
		Chloroethane[HAP]	2.60		1.14
		Dimethyl Formamide[HAP]	0.09		0.39
		Ethylene Dibromide[HAP]	4.60		11.00
		Ethylene Dichloride[HAP]	0.09		0.39
		Ethylene Glycol[HAP]	1.00		4.34
		Hydrogen Chloride[HAP]	13.68		39.34
		Methanol[HAP]	61.23		45.87
		Methyl Bromide[HAP]	17.97		46.72
		Methyl Naphthalene[HAP]	1.36		5.54
		Methylene Chloride[HAP]	1.74		7.613

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
					2
		Phthalic Anhydride[HAP]	3.93		1.24
		Toluene[HAP]	50.95		66.42
		Toluene Diamine[HAP]	0.08		0.35
		Xylene[HAP]	4.03		15.48
		Ethyl Benzene[HAP]	3.56		15.38
		Phenol[HAP]	0.10		0.44
		Hexane[HAP]	3.89		0.12
		Acetaldehyde[HAP]	0.2		0.88
		Iso-octane[HAP]	0.40		0.10
Total Allowable Emissions: Non-Criteria Air Contaminants		Ammonia[NCAC]	10.50		45.99 -

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
	(NCACs, State-regulated)				
		Bromine[NCAC]	22.84		92.80
		HCFC-22[NCAC]	0.92		4.03
		HFC-125[NCAC]	0.07		0.31
		HFC-143a[NCAC]	0.07		0.31
		Hydrogen Bromide[NCAC]	19.98		84.06
		Hydrogen Peroxide[NCAC]	2.11		9.24
		Hydrogen Sulfide[NCAC]	0.19		0.89
		Methane[NCAC]	0.17		0.74
		Particulate Matter[NCAC] (PM)	35.61		127.10
		Sulfuric Acid[NCAC]	0.01		0.04
		BrCl[NCAC]	0.20		0.8

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Source No.	Description	Pollutant	Emission Rates lb/hr	t p y	Cross Reference Page
					8
BC-01	Bromine Chloride Scrubber	Out of operation.			
BR-01	#1 Br_2 Tower Scrubber	VOC	1.50	6.60	52
		Chlorine $(Cl_2)^{HAP}$	0.06	0.26	
		Bromine $(Br_2)^{NCAC}$	0.26	1.14	
BR-02	Bromine Tower Vent Scrubber	Emissions rerouted. Vents to SN-BR-12.			
BR-03	Bromine Tower Vent Scrubber	Emissions rerouted. Vents to SN-BR-12.			
BR-04	#2 Br_2 Tower Scrubber	VOC	3.81	16.70	52
		Cl_2^{HAP}	0.03	0.13	
		Br_2^{NCAC}	0.14	0.61	
BR-05	Recovered Groundwater Storage Tank D-104 (formerly BR-13)	Insignificant.			
BR-06	Scrubber on Boiler Feedwater Tank Vent	Removed from service.			

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
BR-07	Sulfuric Acid Storage Tank	Insignificant.			
BR-08	Recycle HCl Storage Tank	Hydrogen Chloride (HCl)^{HAP}	0.07	0.31	52
BR-09	Recycle HBr Storage Tank Scrubber	Br_2^{NCAC}	0.02	0.06	52
		Hydrogen Bromide (HBr)^{NCAC}	0.02	0.09	
BR-10	Chilled H_2O Storage Tank	Insignificant.			
BR-11	Reserved.	Removed from service.			
BR-12	Bromine Area Scrubber	Cl_2^{HAP}	0.10	0.44	52
		Br_2^{NCAC}	0.30	1.31	
BR-13	Recovered Groundwater Storage Tank D-104 (now BR-05)	Insignificant.			
BR-14	Br_2/BrCl Fugitive Emissions	VOC	0.50	2.20	52
		Cl_2^{HAP}	0.04	0.18	
		Br_2^{NCAC}	1.39	6.0	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				9	
		Chlorodifluoromethane (HCFC-22)^{NCAC}	0.02	0.09	
BR-15	Caustic Drum	Br_2+ Cl_2	1.6	0.1	148
SL-01	Sulfur Recovery Processes, Gas Flare	PM_{10}	3.70	0.11	56
		PM	3.70	0.11	
		SO_2	12066.00	36.00	
		VOC	3.70	0.11	
		CO	13.40	0.38	
		NO_X	31.40	0.89	
SL-02	Sulfinol Storage Tank	VOC	0.12	0.6	56
SR-01	Tail Gas Incinerator	PM_{10}	0.07	0.31	56
		PM	0.07	0.3	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				1	
		SO_2	727.00	3184.00	
		VOC	0.07	0.31	
		CO	0.25	1.10	
		NO_X	0.60	2.60	
SR-02	Sulfur Fugitives	VOC	0.50	2.20	56
		Methanol[HAP]	0.06	0.26	
RU-01	BRU Process: Out of operation.				
RU-02	Out of operation.				
RU-03	Out of operation.				
ED-01	EDB Process: Out of operation.				
ED-02	Out of operation.				
ED-03	Out of operation.				

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
ED-04	Out of operation.				
ED-05	Out of operation.				
ED-06	Out of operation.				
CB-01	Raw Material Silo Vent Filter	PM_{10}	0.10	0.44	61
		PM	0.10	0.44	
CB-02	South Reactor Scrubber Vent	VOC	9.00	39.40	61
		Methyl Bromide^{HAP}	2.3	8.3	
		Methanol^{HAP}	2.3	0.8	
		Bromoform^{HAP}	2.3	1.3	
		Ethylene Dibromide^{HAP}	2.3	5.5	
		HBr^{NCAC}	0.10	0.2	
		Br_2^{NCAC}	0.10	0.4	
CB-03	NaOH Storage Tank	Insignificant.			
CB-04	Methanol Storage Tank	VOC	25.50	0.35	61

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		Methanol[HAP]	25.50	0.35	
CB-05	$CaBr_2$ Storage Tank	Insignificant.			
CB-06	$CaBr_2$ Storage Tank	Insignificant.			
CB-07	Product Rundown Tank	Insignificant.			
CB-08	Product Rundown Tank	Insignificant.			
CB-09	Slurry Feed Tank	Insignificant.			
CB-10	Wash Water Tank	Insignificant.			
CB-11	Acid Storage Tank	Insignificant.			
CB-12	Product Storage Tank	Insignificant.			
CB-13	Product Storage Tank	Insignificant.			
CB-14	Product Storage Tank	Insignificant.			
CB-15	Product Storage Tank	Insignificant.			
CB-16	North Reactor Scrubber Vent	VOC	9.00	22.2	61
		Methyl Bromide[HAP]	2.3	8.3	
		Methanol[HAP]	2.3	0.8	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		Bromoform[HAP]	2.3	1.3	
		Ethylene Dibromide[HAP]	2.3	5.5	
		HBr[NCAC]	0.10	0.2	
		Br_2[NCAC]	0.10	0.4	
CB-17	CCF Fugitive Emissions	VOC	1.80	7.90	61
		Methanol[HAP]	1.30	5.70	
		(Br_2+HBr)[NCAC]	2.40	10.50	
CB-18	Raw Material Silo Vent Filter	PM_{10}	0.10	0.44	61
		PM	0.10	0.44	
DE-01	Ethanol Storage Tank	VOC	11.00	4.82	67
DE-02	Toluene Storage Tank	VOC	11.00	4.82	67
		Toluene[HAP]	11.00	4.82	

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Source No.	Description	Pollutant	Emission Rates lb/hr	t p y	Cross Reference Page
DE-03	Chaser Storage Tank	VOC	0.30	0.14	67
		Methyl Naphthalene[HAP]	0.09	0.04	
DE-04	Crude Product Storage Tank	VOC	8.96	3.93	67
		Toluene[HAP]	8.80	3.85	
		Methyl Naphthalene[HAP]	0.01	0.01	
DE-05	Waste Holdup Storage Tank	Removed.			
DE-06	Product Rundown Storage Tank	VOC	0.62	0.28	67
DE-07	Product Rundown Storage Tank	VOC	0.62	0.28	67
DE-08	Product Rundown Storage Tank	VOC	0.62	0.28	67
DE-09	Product Bulk Storage Tank	VOC	0.65	0.29	67
DE-10	Product Rundown Storage Tank	VOC	0.62	0.28	67

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
DE-11	Bulk Chaser Storage Tank	VOC	0.39	1.71	67
		Methyl Naphthalene[HAP]	0.12	0.53	
DE-12	Recovered Oil Storage Tank	VOC	0.20	0.10	67
		Methyl Naphthalene[HAP]	0.01	0.01	
		Toluene[HAP]	0.04	0.02	
DE-13	Recovered Oil Storage Tank	Pressure vessel.			
DE-14	Methanol Storage Tank	Source removed.			
DE-15	Product Bulk Storage Tank	No longer vents to atmosphere.			
DE-16	Product Storage Tank	Never installed.			
DE-17	Emergency Flare	PM_{10}	0.01	0.05	67
		PM	0.01	0.05	
		SO_2	0.01	0.05	

EMISSION SUMMARY

KEY: PM_{10}=Particulate <10 microns. SO_2=Sulfur Dioxide. VOC=Volatile Organic Compounds. CO=Carbon Monoxide. NO_X=Oxides of Nitrogen. HAP=Hazardous Air Pollutant. NCAC=Non-Criteria Air Contaminant.

Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
		VOC	0.01	0.05	
		CO	0.01	0.05	
		NO_X	0.05	0.22	
DE-18	Reactor Safety Blowdown	PM_{10}	0.01	0.05	67
		PM	0.01	0.05	
		SO_2	0.01	0.05	
		VOC	0.01	0.05	
		CO	0.02	0.10	
		NO_X	0.10	0.44	
DE-19	Sulfur Trailer Knockout Drum	VOC	8.00	3.50	67
		Toluene[HAP]	8.00	3.5	

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
				0	
DE-20	Isopropanol Storage Tank	VOC	9.40	4.10	67
DE-21	Vent Gas Oxidizer	PM_{10}	2.20	9.64	67
		PM	2.20	9.64	
		SO_2	7.00	30.66	
		VOC	0.60	2.63	
		CO	2.00	8.76	
		NO_X	1.00	4.38	
		Cl_2^{HAP}	0.30	1.31	
		Hydrogen Chloride $(HCl)^{HAP}$	6.72	29.4	
DE-22	DECTP Fugitives	VOC	9.40	41.10	67

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	t l y	Cross Reference Page
		Cl_2^{HAP}	0.05	0.22	
		Methyl Naphthalene^{HAP}	1.13	5.00	
		Toluene^{HAP}	0.55	2.40	
		HCl^{HAP}	1.00	4.40	
		HCFC-22^{NCAC}	0.01	0.04	
DE-23	DECTP Purification Process	VOC	2.83	1.24	67
		Chloroethane^{HAP}	2.60	1.14	
		HCl^{HAP}	0.34	0.15	
DE-24	MC-2431, Centrifuge	VOC	12.70	5.60	67
		Toluene^{HAP}	12.70	5.60	
DE-25	Product Storage Tank	VOC	0.65	0.2	67

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				9	
DE-27	Sodium Sulfite Storage Tank	Insignificant			
AD-01	T-1501; Olefins Storage Tank #1	VOC	0.16	0.71	74
AD-02	T-1503; Olefins Storage Tank #2	VOC	0.16	0.71	74
AD-03	T-1502; Alkyl Amines Storage Tank	VOC	0.26	1.14	74
AD-04	Reserved.	Vents to AD-16.			
AD-05	C-1531; Acid Vent Scrubber (formerly SB-03)	VOC	0.20	0.88	74
		HBr^{NCAC}	0.03	0.14	
AD-06	Reserved.	Vents to AD-35.			
AD-07	T-1534A; Alkyl Amine Rundown Tank	VOC	0.05	0.22	74
AD-08	T-1534B; Alkyl Amine Rundown Tank	VOC	0.05	0.22	74
AD-09	T-1534C; Alkyl Amine Rundown Tank	VOC	0.05	0.22	74

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Source No.	Description	Pollutant	Emission Rates lb/hr	t/y	Cross Reference Page
AD-10	T-1537; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-11	T-1535; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-12	T-1536; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-13	1538-; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-14	T-1539; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-15	T-1540; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-16	XT 1501; Process Heater	Insignificant.			
AD-17	D-2427A; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-18	T-1409; NaBr Recycle Tank	VOC	0.26	1.14	74
AD-19	Reserved.	No longer in use.			
AD-20	T-1405A; Olefins Storage Tank	VOC	0.16	0.71	74

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
AD-21	T-1405B; Olefins Storage Tank	VOC	3.45	15.08	74
AD-22	Reserved.	Vents to AD-35.			
AD-23	T-1408 A&B; Alkyl Amines Storage Tank	VOC	0.03	0.14	74
AD-24	T-1542; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-25	T-1543; Alkyl Amine Storage Tank	VOC	0.26	1.14	74
AD-26	Emergency Flare	PM_{10}	0.01	0.05	74
		PM	0.01	0.05	
		SO_2	0.01	0.05	
		VOC	0.01	0.05	
		CO	0.02	0.09	
		NO_X	0.03	0.14	

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
		Br_2^{NCAC}	0.02	0.01	
AD-27	T-1407; Recycle Storage Tank	VOC	0.26	1.14	74
AD-28	T-1541; Recycle Storage Tank	VOC	0.08	0.35	74
AD-29	T-1544; Recycle Storage Tank	VOC	0.08	0.35	74
AD-30	Reserved.	Vents to AD-35.			
AD-31	Reserved.	Pressure vessel.			
AD-32	Natural Gas Heater	Insignificant.			
AD-33	Source removed.				
AD-34	T-7701; 48% HBr Storage Tank	Vents to AD-05.			
AD-35	Vent Incinerator	PM_{10}	0.22	0.97	74
		PM	0.22	0.97	
		SO_2	0.09	0.40	

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Source No.	Description	Pollutant	Emission Rates lb/hr	t p y	Cross Reference Page
		VOC	1.22	5.35	
		CO	0.06	0.27	
		NO_X	0.70	3.07	
		Br_2[NCAC]	0.03	0.14	
AD-36	Alkyl Amines Fugitives	VOC	4.13	18.14	74
		Ethylene Glycol[HAP]	0.06	0.30	
		HCFC-22[NCAC]	0.80	3.50	
		Pentafluoroethane (HFC-125)[NCAC]	0.02	0.09	
		1,1,1-Trifluoroethane (HFC-143a)[NCAC]	0.02	0.09	
		Methane[NCAC]	0.17	0.76	
		(Br_2+HBr)[NCAC]	3.76	16.	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				47	
AD-37	ADMA Condensate Collection Tank	VOC	0.05	0.17	74
AB-15	Alkyl Bromide Plant	VOC	1.20	5.30	81
		Methylene Chloride[HAP]	0.24	1.10	
AB-16	Alkyl Bromide Fugitives	VOC	7.50	32.90	81
		Methylene Chloride[HAP]	1.50	6.60	
		HFC-125[NCAC]	0.02	0.09	
		HFC-143a[NCAC]	0.02	0.09	
DB-01	Vent Scrubber	(Br_2+HBr)[NCAC]	0.40	1.80	85
DB-02	Raw Material Storage Tank	Insignificant.			
DB-03	Sulfuric Acid Storage Tank	Insignificant.			
DB-04	Product Dryer Filter	PM_{10}	1.8	7.9	85

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		PM	1.8	7.9	
		SO_2	0.14	0.61	
		VOC	0.96	4.2	
		CO	3.6	15.8	
		NO_X	1.6	7.0	
		$(Br_2+HBr)^{NCAC}$	1.65	7.2	
		PM_{10}	0.30	1.30	
DB-05	Product Vent Filter	PM	0.30	1.30	85
		PM_{10}	0.30	1.30	
DB-06	Product Vent Filter	PM	0.30	1.30	85
		VOC	0.10	0.44	
DB-07	Raw Material Storage Tank	HCl^{HAP}	5.10	3.1	85

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
DB-08	Product Vent Filter	PM_{10}	1.10	4.80	85
		PM	1.10	4.80	
DB-09	Diphenyl Oxide Storage Tank	Source removed.			
DB-10	Ethylene Glycol Storage Tank	VOC	0.01	0.04	85
		Ethylene Glycol^{HAP}	0.01	0.04	
DB-11	Slurry Feed Tank	Insignificant.			
DB-12	Slurry Feed Tank	Insignificant.			
DB-13	Never installed.				
DB-14	Aluminum Chloride Hood Scrubber	Source removed.			
DB-15	Catalyst Exhaust	Out of operation.			
DB-16	NC-12 Fugitives	VOC	1.40	6.10	85
		$(Br_2+HBr)^{NCAC}$	5.81	25.44	
		HCFC-22^{NCAC}	0.01	0.04	

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Source No.	Description	Pollutant	Emission Rates lb/hr	t l y	Cross Reference Page
DB-17	Back-up Water Scrubber	HBr^{NCAC}	0.10	0.44	
TB-01	Methanol Storage Tank	VOC	7.20	7.20	
		$Methanol^{HAP}$	7.20	7.20	89
TB-02	Methyl Bromide Recovery System	Combined into TB-03.			
TB-03	Reactor Vent Scrubber	VOC	17.00	39.54	
		$Methanol^{HAP}$	2.00	5.32	
		$Methyl\ Bromide^{HAP}$	13.00	28.50	
		$(Br_2+HBr)^{NCAC}$	0.10	0.44	89
TB-04	Product Dryer Baghouse	PM_{10}	1.60	7.00	89
		PM	1.60	7.00	
		VOC	4.00	6.36	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		$Methanol^{HAP}$	4.00	6.36	
		HBr^{NCAC}	2.00	6.16	
TB-05	Product Storage Vent Baghouse	Combined into TB-08.			
TB-06	Methanol Column Vent	Combined into TB-25.			
TB-07	Rotary Filter Vacuum Pump	Source removed.			
TB-08	Packaging Baghouse	PM_{10}	1.80	7.90	89
		PM	1.80	7.90	
TB-09	Acid Stripper	Source removed.			
TB-10	Methanol Column Feed Tank	Out of service.			
TB-11	Methanol Column Feed Tank	VOC	2.91	4.50	89
		$Methanol^{HAP}$	2.91	3.10	
TB-12	Sulfuric Acid Storage Tank	VOC	0.53	0.38	89

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		$Methanol^{HAP}$	0.10	0.10	
		$H_2SO_4^{NCAC}$	0.01	0.05	
TB-13	Refrigerant Storage Tank	Insignificant.			
TB-14	Bromine Storage Tank Scrubber	Br_2^{NCAC}	0.10	0.30	89
TB-14	Caustic Scrubber during 95ND141/Staborm909 Production (may be additive w/ other limits)	Br_2^{NCAC} $BrCl^{NCAC}$ Cl_2^{NCAC}	0.1 0.1 0.1	0.44 0.44 0.44	89
TB-15	Hot Water Tank	VOC	0.10	0.44	89
		$Methanol^{HAP}$	0.10	0.44	
TB-16	Spent Acid Storage Tank	Source removed.			
TB-17	Methyl Bromide Tank Car Vent	Combined into TB-03.			
TB-18	Column Bottoms Tank	VOC	0.10	0.44	89

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		Methanol[HAP]	0.10	0.44	
TB-19	Brine Stripper Feed Tank	Source removed.			
TB-20	Brine Stripper Column Vent	Insignificant.			
TB-21	Reserved.				
TB-22	BPA Storage Silo Baghouse	PM_{10}	0.30	0.40	89
		PM	0.30	0.40	
TB-23	BPA Weigh Hopper Baghouse	PM_{10}	0.02	0.02	89
		PM	0.02	0.02	
TB-24	Rail Car Loading Baghouse	Never built.			
TB-25	Methanol Column Vent	VOC	0.70	3.20	89
		Methanol[HAP]	0.50	2.40	
TB-26	Sulfuric Acid Storage Tank	Insignificant.			

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
TB-27	Refrigerant Storage Tank	Insignificant.			
TB-28	By-product Treatment	VOC	0.10	0.10	
		HCl^{HAP}	0.10	0.50	89
		$Methanol^{HAP}$	0.01	0.05	89
TB-29	NC-14 Fugitive Emissions	(Br_2^{NCAC}+ $BrCl^{NCAC}$+ Cl_2^{NCAC})	0.1	0.44	89
		VOC	3.47	15.25	
		$Methanol^{HAP}$	0.37	1.64	
		Methyl $Bromide^{HAP}$	0.37	1.64	
		(Br_2+HBr) ^{NCAC}	0.46	2.02	
		HCFC-22 ^{NCAC}	0.05	0.22	
		HFC-125 ^{NCAC}	0.03	0.1	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				3	
		HFC-143a [NCAC]	0.03	0.13	
TB-30	Methanol Storage Tank	VOC	11.80	9.30	89
		Methanol[HAP]	11.80	9.30	
TB-31	Methyl Bromide Storage Tank	Vents to TB-03.			
TB-32	Methyl Bromide Storage Tank	Vents to TB-03.			
TB-33	Methyl Bromide Rundown Tank	Vents to TB-03.			
TB-34	Wastewater Storage Tank	Vents to TB-03.			
TB-35	Wastewater Storage Tank	Vents to TB-03.			
TB-36	Water Scrubber Tank	Insignificant.			
TB-37	Raw Material Recovery	VOC	1.34	0.94	89
		HBr	0.1	0.1	
15-01	Process Condenser	Out of operation.			
15-02	Process Scrubber	Br_2 [NCAC]	0.10	0.44	104

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		HBr^{NCAC}	0.10	0.44	
15-03	Process Vent	Vents to SN-15-01.			
15-04	Process Vent	Vents to SN-15-13.			
15-05	Process Vent	Vents to SN-15-02.			
15-06	Drying and Grinding	Vents to SN-15-12.			
15-07	Product Packaging	Vents to SN-15-12.			
15-08	Process Condenser	Out of operation.			
15-09	Refrigerated Coolant Storage	VOC	0.03	0.13	104
		$Ethylene\ Glycol^{HAP}$	0.03	0.13	
15-10	Never installed.				
15-11	Never installed.				
15-12	Area Caustic Scrubber	PM_{10}	1.00	4.38	104
		PM	1.00	4.38	
		SO_2	0.01	0.0	

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
				5	
		VOC	2.20	9.64	
		CO	0.04	0.18	
		NO_X	0.18	0.79	
		Br_2^{NCAC}	0.70	3.07	
15-13	Weigh Tanks' Vents	VOC	0.06	0.23	104
15-15	NC-15 Fugitive Emissions	PM_{10}	0.03	0.13	104
		PM	0.03	0.13	
		VOC	4.23	18.30	
		$Toluene^{HAP}$	2.90	12.70	
		$(Br_2+HBr)^{NCAC}$	1.54	6.72	

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Source No.	Description	Pollutant	Emission Rates lb/hr	t l y	Cross Reference Page
		$HCFC\text{-}22^{NCAC}$	0.03	0.13	
		PM_{10}	1.10	4.80	
15-16	Dust Scrubber	PM	1.10	4.80	104
15-17	Rail Car Vent	VOC	0.69	3.03	104
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	0.05	0.22	104
		SO_X	0.50	2.19	
		PM_{10}	0.10	0.44	
		PM	0.10	0.44	
16-01	Tetrabromophthalic Anhydride Production--Packed Scrubber	$Phthalic\ Anhydride^{HAP}$	0.10	0.44	108
16-02	Tetrabromophthalic Anhydride Production--Off Gas Scrubber	VOC	0.10	0.44	108
		SO_X	0.40	1.7	

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Source No.	Description	Pollutant	Emission Rates lb/hr	t p y	Cross Reference Page
				5	
		Br_2 NCAC	0.10	0.44	
16-03	Out of service.				
16-04	Out of service.				
16-05	EBTBP Scrubber--Packed Scrubber	VOC	0.10	0.44	108
16-06	EBTBP Production--Converter Scrubber	VOC	0.10	0.44	
		PM_{10}	0.40	1.75	
		PM	0.40	1.75	108
16-07	EBTBP Production--In-process Storage Silo Vent Filter	PM_{10}	0.30	1.32	
		PM	0.30	1.32	108
16-08	EBTBP Production--Product Transfer and Storage Fabric Filter	PM_{10}	0.30	1.32	
		PM	0.30	1.3	108

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				2	
16-09	EBTBP Ambient Dust Collector	Removed from service.			
16-10	Product Transfer and Storage Filter	PM_{10}	0.50	2.19	108
		PM	0.50	2.19	
		SO_X	0.07	0.31	
16-11	Tetrabromophthalic Anhydride Packaging Filter	PM_{10}	0.07	0.31	108
		PM	0.07	0.31	
16-12	Tetrabromophthalic Anhydride Weigh Hopper Filter	PM_{10}	0.10	0.44	108
		PM	0.10	0.44	
16-13	Tetrabromophthalic Anhydride Vacuum Pump	SO_X	0.10	0.44	108
16-14	Ethylene Diamine Storage Tank	VOC	0.01	0.04	108
				0.0	

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
16-15	Propionic Acid Storage Tank	VOC	0.01	4	108
16-16	TBPA Neutralization Tank	SO_X	0.10	0.44	108
16-17	Ethylene Glycol Tank	VOC	0.02	0.09	108
		Ethylene Glycol[HAP]	0.02	0.09	
16-18	Vent Gas Oxidizer	PM_{10}	0.04	0.18	108
		PM	0.04	0.18	
		SO_2	0.07	0.31	
		VOC	0.66	2.89	
		CO	0.47	2.06	
		NO_X	0.64	2.80	
		(Xylene + Ethyl Benzene) [HAP]	0.52	2.28	

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EMISSION SUMMARY

KEY: PM_{10}=Particulate <10 microns. SO_2=Sulfur Dioxide. VOC=Volatile Organic Compounds. CO=Carbon Monoxide. NO_X=Oxides of Nitrogen. HAP=Hazardous Air Pollutant. NCAC=Non-Criteria Air Contaminant.

Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
16-19	Charge Hopper Vent	PM_{10}	0.30	1.32	108
		PM	0.30	1.32	
		SO_X	0.10	0.44	
16-20	Heat Exchange Heater	PM_{10}	0.03	0.13	108
		PM	0.03	0.13	
		SO_X	0.06	0.27	
		VOC	0.13	0.57	
		CO	0.19	0.83	
		NO_X	0.50	2.18	
16-21	Product Storage Hopper	PM_{10}	0.20	0.88	108
		PM	0.20	0.8	

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	t p y	Cross Reference Page
				8	
		VOC	0.40	1.76	
		(Xylene + Ethyl Benzene) HAP	0.28	1.23	
16-22	By-product Powder Packaging	VOC	0.01	0.04	108
		PM_{10}	0.01	0.04	
		PM	0.01	0.04	
		(Xylene + Ethyl Benzene) HAP	0.01	0.04	
16-23	Fugitive Emissions	PM_{10}	0.32	1.40	108
		PM	0.32	1.40	
		SO_X	1.02	4.47	
		VOC	6.60	28.53	

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EMISSION SUMMARY

KEY: PM_{10}=Particulate <10 microns. SO_2=Sulfur Dioxide. VOC=Volatile Organic Compounds. CO=Carbon Monoxide. NO_X=Oxides of Nitrogen. HAP=Hazardous Air Pollutant. NCAC=Non-Criteria Air Contaminant.

Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		(Xylene + Ethyl Benzene) ^{HAP}	2.70	11.80	
		Methanol^{HAP}	0.17	0.41	
		Ethylene Glycol^{HAP}	0.41	1.80	
		Br_2^{NCAC}	0.34	1.49	
16-24	Raw Material Unloading, Brinks	SO_X	1.80	1.58	108
16-25	Wet Scrubber	PM_{10}	0.40	1.75	108
		PM	0.40	1.75	
		VOC	1.02	3.46	
		Methanol^{HAP}	0.51	1.23	
16-26	EBTBP Production Transfer and Storage Filter	PM_{10}	0.30	1.32	108
		PM	0.30	1.3	

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				2	
16-27	Reactor Weigh Hopper Filter	PM_{10}	0.30	1.32	108
		PM	0.30	1.32	
16-28	TBPA Neutralization Tank	SO_X	0.10	0.44	108
16-29	Charge Hopper Vent	Combined with SN-19.			
16-30	Indirect-fired Gas Heater	Insignificant.			
16-31	Molten Phthalic Anhydride Storage Tank	VOC	3.83	0.80	108
		Phthalic Anhydride	3.83	0.80	
16-32	Sulfuric Acid Tank	Insignificant.			
BH-01 BH-02	Bubble: #1 Boiler, #2 Boiler.	PM_{10}	3.40	14.90	117
		PM	3.40	14.90	
		SO_2	5.60	24.53	

EMISSION SUMMARY

KEY: PM_{10}=Particulate <10 microns. SO_2=Sulfur Dioxide. VOC=Volatile Organic Compounds. CO=Carbon Monoxide. NO_X=Oxides of Nitrogen. HAP=Hazardous Air Pollutant. NCAC=Non-Criteria Air Contaminant.

Source No.	Description	Pollutant	Emission Rates lb/hr	t l y	Cross Reference Page
		VOC	1.90	8.40	
		CO	27.20	119.20	
		NO_X	95.20	417.00	
		PM_{10}	0.10	0.44	
		PM	0.10	0.44	
		SO_2	0.01	0.04	
		VOC	0.26	1.14	
		CO	3.8	16.60	
		NO_X	0.50	2.20	
		Benzene[HAP]	0.26	1.14	
21-01	Vent Gas Incinerator	HCl[HAP]	0.30	1.3	120

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
				1	
21-02	NC-21 Fugitive Emissions	VOC	3.50	15.30	120
		Benzene[HAP]	0.69	3.02	
		HCl[HAP]	0.05	0.22	
		Ethylene Dichloride (EDC)[HAP]	0.09	0.40	
21-03	Wastewater Effluent	VOC	0.01	0.01	120
		Benzene[HAP]	0.01	0.01	
22-01	Polystyrene Baghouse	PM_{10}	0.40	1.75	123
		PM	0.80	3.50	
22-02	Slurry Tank	VOC	0.10	0.44	123
22-03	Dryer Baghouse	PM_{10}	0.30	1.31	123

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EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	t l y	Cross Reference Page
		PM	0.38	1.66	
		PM_{10}	0.05	0.22	
		PM	0.05	0.22	
22-04	Product Baghouse	VOC	0.10	0.44	123
		PM_{10}	2.00	8.76	
22-05	Dust Baghouse	PM	2.50	10.95	123
22-06	Extraneous Water Tank	VOC	0.10	0.44	123
		VOC	0.01	0.05	
22-07	Ethylene Glycol Storage Tank	Ethylene Glycol[HAP]	0.01	0.05	123
22-08	Carbon Adsorber Unit	VOC	1.00	4.40	123
22-09	Scrubber Tank				123
		VOC	0.04	0.1	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				8	
		HBr^{NCAC}	0.10	0.44	
22-10	Reserved. Emission point label unassigned.				
22-11	HBr Storage Tank	HBr^{NCAC}	0.09	0.39	123
22-12	HBr Storage Tank	HBr^{NCAC}	0.09	0.39	123
22-13	NC-22 Fugitive Emissions	VOC	0.78	3.41	123
		Ethylene $Glycol^{HAP}$	0.01	0.05	
		HBr^{NCAC}	0.34	1.50	
		Br_2^{NCAC}	0.10	0.42	
23-01	NC-23 Fugitive Emissions	VOC	1.12	4.91	126
		HBr^{NCAC}	0.11	0.49	
				0.9	

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EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		Br_2 [NCAC]	0.22	7	
23-02	Raw Material Unloading Baghouse	PM_{10}	0.10	0.44	126
		PM	0.20	0.88	
23-03	Raw Material Scrubber	VOC	0.35	1.53	126
		HBr [NCAC]	0.35	1.53	
23-04	By-product Loading	VOC	0.44	1.93	126
23-05	Vent Absorber	VOC	2.9	12.7	126
		Phenol [HAP]	0.10	0.40	
		Bromoform [HAP]	0.43	1.89	
		Acetaldehyde [HAP]	0.10	0.44	
23-06	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM_{10}	0.30	1.32	126
		PM	0.60	2.64	

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
23-07		VOC	3.8	16.60	
		HBr^{NCAC}	0.22	0.96	
23-08		Acetaldehyde ^{HAP}	0.10	0.44	
		PM_{10}	0.10	0.44	
		PM	0.20	0.88	
23-09	Product Packaging Baghouse	HBr^{NCAC}	0.01	0.01	126
		PM_{10}	0.10	0.44	
23-10	Product Packaging Dust Collection	PM	0.20	0.88	126
		PM_{10}	0.10	0.44	
23-11A 23-11B	Product Loading Baghouse Product Loading (Railcar)	PM	0.20	0.88	126
23-12A	Product Loading Baghouse	PM_{10}	0.10	0.4	126

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
				4	
23-12B[1]	Product Loading (Truck)	PM	0.20	0.88	
		PM_{10}	0.10	0.44	
23-13	Floor Vacuum Baghouse	PM	0.20	0.88	126
23-14	Solvent Tote Bin	VOC	40.1	1.53	
23-15	Phenol Storage Tank		Routed to SN-23-05		
		VOC	0.01	0.05	
BT-01	Feed Brine Oil Separator/Surge Tank	Hydrogen Sulfide (H_2S)^{NCAC}	0.12	0.52	131
BT-02	Purchased Brine Surge Tank	Insignificant.			
BT-03	Brine/Oil Separator	Insignificant.			
BT-04	Feed Brine Pump Suction Header Vent	Insignificant.			
BT-05	Overflow Line Vent	Insignificant.			
BT-06	Overflow Line Vent	Insignificant.			

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
BT-07	Feed Brine Pump Suction Header Vent	Insignificant.			
BT-08	Brine/Oil Separator Outlet Line Vent	Insignificant.			
BT-09	Overflow Line Vent	Insignificant.			
BT-10	Brine/Oil Separator Outlet Line Vent	VOC	14.4	0.5	131
		H_2S^{NCAC}	0.01	0.05	
		$Benzene^{HAP}$	3.87	0.2	
		$Hexane^{HAP}$	3.12	1.34	
		$Toluene^{HAP}$	1.34	0.1	
		$Xylene^{HAP}$	0.28	0.1	
BT-11	Neutralization Tank	VOC	0.01	0.05	131
		H_2S^{NCAC}	0.01	0.05	
		Ammonia $(NH_3)^{NCAC}$	0.20	0.90	
		Cl_2^{HAP}, or Halogens	0.03	0.13	

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	tpy	Cross Reference Page
BT-12	Line Vent	VOC	0.01	0.05	131
		NH_3^{NCAC}	0.01	0.05	
		Cl_2^{HAP}, or Halogens	0.01	0.05	
BT-13	Tail Brine Tank	VOC	0.01	0.05	131
		H_2S^{NCAC}	0.01	0.05	
		NH_3^{NCAC}	0.02	0.09	
		Cl_2^{HAP}, or Halogens	0.01	0.05	
BT-14	Vacuum Pump Vent	Insignificant.			
BT-15	Overflow Line Vent	Insignificant.			
BT-16	Brinefield Oil/Water Separator	VOC	30.00	1.80	131
		H_2S^{NCAC}	0.01	0.05	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
BT-17	Brinefield Oil Storage Tank	VOC	16.00	1.70	131
		H_2S^{NCAC}	0.01	0.05	
BT-18	Brine Underflow Line Vent	Insignificant.			
BT-19	Brine Underflow Line Vent	Insignificant.			
BT-20	Brine Underflow Line Vent	Insignificant.			
BT-21	Tail Brine Cooling Towers (4)	PM_{10}	4.12	18.09	131
		PM	4.12	18.09	
		VOC	3.37	14.72	
		NH_3^{NCAC}	10.23	44.77	
		Cl_2^{HAP}, or Halogens	2.89	12.60	
BT-22	Brine Management Fugitives	VOC	0.02	0.09	131
		NH_3^{NCAC}	0.02	0.0	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
				9	
		H_2S^{NCAC}	0.02	0.09	
		Cl_2^{HAP}, or Halogens	0.02	0.09	
BT-23	Line Vent	VOC	0.01	0.05	131
		NH_3^{NCAC}	0.01	0.05	
		Cl_2^{HAP}, or Halogens	0.01	0.05	
BT-24	Line Vent	VOC	0.01	0.05	131
		NH_3^{NCAC}	0.01	0.05	
		Cl_2^{HAP}, or Halogens	0.01	0.05	
DM-01	Ethylene Glycol Tank	VOC	0.03	0.11	135
		Ethylene Glycol^{HAP}	0.03	0.11	

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EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
DM-02	Thermal Oxidizer	PM_{10}	0.02	0.09	135
		PM	0.02	0.09	
		SO_2	4.00	17.50	
		VOC	0.10	0.44	
		CO	0.03	0.13	
		NO_X	0.31	1.40	
DM-03	Hydrogen Peroxide Tank 1	Hydrogen Peroxide $(H_2O_2)^{NCAC}$	0.81	3.55	135
DM-04	Catalyst Box	Insignificant source.			
DM-05	Stabilizer Hopper	Insignificant source.			
DM-06	Hydrogen Peroxide Tank 2	$H_2O_2^{NCAC}$	0.81	3.55	135
DM-07	DMTDA Fugitive Emissions	VOC	3.18	13.95	135

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Source No.	Description	Pollutant	Emission Rates lb/hr	t/y	Cross Reference Page
		Toluene Diamine[HAP]	0.08	0.35	
		Dimethyl Formamide[HAP]	0.09	0.39	
		Ethylene Glycol[HAP]	0.41	1.80	
		H_2O_2[NCAC]	0.49	2.20	
MS-01	Extraneous Water System	VOC	3.00	13.14	138
MS-02	Drying Bed	VOC	0.10	0.44	138
MS-03	French Drain Sump Bubble	VOC	0.10	0.44	138
		Br_2[NCAC]	0.90	3.90	
MS-04	Pit Incinerator	Removed from service.			
MS-05	Carpenter's Shop Fugitives	VOC	0.67	2.20	138
MS-06	South Landfill	VOC	7.00	2.40	138

EMISSION SUMMARY

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		SO_2	0.50	0.17	
		Toluene[HAP]	5.00	1.70	
MS-07	Gasoline Storage Tank	VOC	47.7	1.0	138
		Benzene[HAP]	0.5	0.1	
		Hexane[HAP]	0.8	0.1	
		Toluene[HAP]	0.7	0.1	
		Xylene[HAP]	0.3	0.1	
		Ethyl Benzene[HAP]	0.1	0.1	
		Iso-octane[HAP]	0.4	0.1	
MS-08	Electric Generators	PM	3.0	1.4	149
		PM_{10}	3.0	1.4	
		VOC	8.1	13.2	
		SO_2	2.8	1.3	
		NO_x	41.6	19.0	

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Source No.	Description	Pollutant	Emission Rates lb/hr	Emission Rates tpy	Cross Reference Page
		CO	162.5	19.0	

SECTION III: PERMIT HISTORY

The following timetable summarizes the Department's permitting actions related to this facility from 1973 until it receive its initial Title V permit.

Date	Permit Number	Purpose (summary)
3/10/00	762-AOP-R0	First operating air permit; incorporated limits and provisions for all minor modifications initiated by the facility from 1992 through August, 1999
06/28/73	164-A	Issued for Sulfinol Gas Sweetening unit.
12/04/74	273-A	Issued for Tail Gas Incinerator.
03/26/76	324-A	Issued for CBN production.
09/24/76	363-A	Issued for NC-9 Alkyl Amine Production plant.
09/23/77	424-A	Issued for production of Pyrochek (MG-3).
09/23/77	425-A	Issued for DECTP plant.
11/22/78	273-AR-1	Modification issued for addition of MDEA unit.
03/23/79	425-AR-1	Modification issued for production of DMCTP.
05/30/79	552-A	Issued for Calcium and Zinc Bromide production.
11/26/79	552-AR-1	Modification issued for Calcium Bromide.
07/24/81	353-AI	Issued for incineration of office waste.
08/11/81	708-A	Issued for NC-14 process.
04/05/82	424-AR-1	Issued for NC-12 process.
07/22/83	708-AR-1	Modification issued for Sodium Bromide production.
02/08/84	728-A	Issued for Bromine Chloride production.
02/23/86	762-A	Issued to Ethyl as the original consolidated air permit for the site.
05/26/87	832-A	Issued for NC-16 process.

Date	Permit Number	Purpose (summary)
09/15/87	846-A	Issued for NC-15 process.
03/17/88	762-AR-1	Modification issued for the DBDPO process.
11/01/88	762-AR-2	Modification issued for an expansion of the TBBPA (NC-14) process.
11/09/88	832-AR-1	Modification and expansion to the existing NC-16 process.
01/11/89	922-A	Issued to allow construction of the Alkyl Bromides process.
02/13/89	933-A	Issued to allow construction of the BRU. The unit later was brought under RCRA BIF regulations.
11/15/89	832-AR-2	Issued for the NC-17 process.
04/30/90	398-IR-1	Issued for the Air Curtain Incinerator.
05/10/91	922-AR-1	Modification issued for the Alkyl Bromides process. Consolidated 913-A and 922-A.
11/18/91	762-AR-3	Consolidated all existing air permits for the facility.
11/04/92	762-AR-4	Modification issued for NC-21 construction.
02/19/93	762-AR-5	Modification issued for NC-14.
09/10/93	762-AR-6	Modification issued for NC-16, and allowed construction of NC-17, NC-18.
12/08/93	762-AR-7	Issued to allow Feed Brine Tank construction.
04/08/94	762-AR-8	Issued to allow DECTP and VGO construction.
01/26/96	762-AR-9	Issued to resolve 762-AR-8 appeal.
3/10/00	762-AOP-R0	Initial Title V permit issued to facility.

SECTION IV: EMISSION UNIT INFORMATION

Bromine (Br_2) Production

Bromine Production

Bromine-containing brine occurs naturally in specific south Arkansas geological formations. The separation of bromine from the brine takes place in two bromine towers.

When the brine first comes out of the ground, it contains sour natural gas and sodium bromide. This gas is separated from the sodium bromide and sent to the sulfur recovery processes. The degassed brine is fed directly to the bromine towers through a feed brine tank. In the bromine towers, the brine is mixed with chlorine. Liquid chlorine is unloaded directly from railcars and passed through a vaporizer (the chlorine railcar unloading takes place under pressure, so negligible losses result). The chlorine gas is injected into the bromine towers. There is no permanent chlorine storage at this plant.

In the bromine towers, the brine is chlorinated to produce the bromine. The bromine vapors are condensed, purified, and then packaged.

Each bromine tower has an atmospheric scrubber. Scrubbers SN-BR-01 and SN-BR-04 are associated with the bromine towers, while SN-BR-02 and SN-BR-03 are associated with the common purification train. SN-BR-02 and SN-BR-03 do not vent directly to the atmosphere. The gases leaving these two scrubbers are sent to a third scrubber, the bromine area scrubber, SN-BR-12.

Bromine vapors displaced during the packaging and loading operations are vented back to the bromine purification train scrubbers. If a bromine shipping container needs to be completely purged of bromine vapors (for internal inspection or repair), nitrogen is blown into the container and the vapors are vented to the bromine purification train scrubbers.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

1. Pursuant to §19.501et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19, as amended February 15, 1999) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table:

SN-#	Description	Pollutant	lb/hr	tpy
BR-01	#1 Bromine Tower Vent Scrubber C-3042	VOC	1.5	6.6
BR-04	#2 Bromine Tower Vent Scrubber C-3043	VOC	3.81	16.70
BR-14	Br_2/BrCl Fugitive Emissions	VOC	0.50	2.20

2. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18, as amended February 15, 1999) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
BR-01	#1 Bromine Tower Vent Scrubber C-3042	Cl_2^{HAP} Br_2^{NCAC}	0.06 0.26	0.26 1.14
BR-04	#2 Bromine Tower Vent Scrubber C-3043	Cl_2^{HAP} Br_2^{NCAC}	0.03 0.14	0.13 0.61
BR-08	Recycle HCl Storage Tank	HCl^{HAP}	0.07	0.31
BR-09	Recycle HBr Storage Tank, Vent Scrubber C-3036	Br_2^{NCAC} HBr^{NCAC}	0.02 0.02	0.06 0.09

SN-#	Description	Pollutant	lb/hr	tpy
BR-12	Bromine Area Scrubber C-3049	Cl_2^{HAP} Br_2^{NCAC}	0.10 0.30	0.44 1.31
BR-14	Bromine Production Fugitive Emissions	Cl_2^{HAP} Br_2^{NCAC} HCFC-22^{NCAC}	0.04 1.39 0.02	0.18 6.09 0.09

3. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-BR-01, SN-BR-04, SN-BR-09, and SN-BR-12.

4. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, all bromine vapors displaced during loading shall be vented back to the bromine purification train scrubber (SN-BR-03), in such manner that no vapors are released to the atmosphere. In the event a shipping container requires purging of bromine or other vapors, such activity shall be performed so that no vapors are emitted.

5. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall calculate Br_2 and HBr emissions from SN-BR-09 once every six months. The calculation method shall be the same as presented in the permit application, or a method otherwise pre-approved by the Department. Emission estimates shall be quantified as lb/hr and ton/yr using worst-case parameters for hourly emissions and a rolling twelve-month total for annual figures. The calculations shall be kept on-site and made available to Department personnel upon request.

6. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall test SN-BR-01 and SN-BR-04 for VOC, using EPA Reference Method 25A or EPA Method 18. Testing shall be conducted within 10% of maximum source throughput capacity. It shall be performed in 2005 and every five years thereafter.

7. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall test SN-BR-01, SN-BR-04, and SN-BR-12 for bromine and chlorine, using EPA Reference

Method 26A. Testing for bromine shall be done during calendar year 2002 and every five years thereafter, and testing for chlorine shall be done during calendar year 2002 and every five years thereafter. Throughput during the testing events shall be within 10% of maximum capacity.

8. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall install and operate a continuous flow monitor alarm at SN-BR-01 and SN-BR-04, which shall indicate when the scrubber brine solution flow rate fails to meet the established compliant parameter value. The flow rates measured at the most recent satisfactory test event shall be recorded and established as a sufficient parameter for demonstration of continuous compliance until the next test is performed. Proposed parametric set points and allowable operating ranges shall be submitted with the test report. A log of alarm incidents and corrective action shall be maintained on site and made available to Department personnel upon request.

9. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall record, every three hours, the flow meter valve position and pump flow light activation at SN-BR-12. The flow meter valve position at the most recent satisfactory test event shall be recorded and established as a sufficient parameter for demonstration of continuous compliance until the next test is performed. Proposed parametric set points and allowable operating ranges shall be submitted with the test report. The flow meter valve position/pump light records shall be maintained on site and made available to Department personnel upon request.

10. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the caustic concentration of the scrubber media used for SN-BR-12 each time the caustic is diluted at railcar unloading. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records corresponding to the most recent approved satisfactory test event shall be kept on site and made available to Department personnel upon request.

Albemarle Corporation-Magnolia South Plant
762-AOP-R1
14-00028

Sulfur

Introduction

Sour gas is co-produced with brine. The hydrogen sulfide (which makes the gas sour) is removed in the gas sweetening plants. These plants use solvents to remove the hydrogen sulfide from the sour gas. The treated gas is sent to the boilers where it is burned as fuel. The acid gas from the sweetening units, the gas which contains the hydrogen sulfide, is sent to a sulfur recovery plant for conversion to sulfur. Part of this sulfur is sold, and part is used in the diethylchlorothiophosphate (DECTP) process. The tail gas from the sulfur recovery plant is incinerated. Hydrogen sulfide from the DECTP process is recycled to the sulfur plant.

Gas Sweetening Plants

The gas sweetening plants are absorption processes. In these processes, the sour gas enters the bottom of the contactor. The absorption solution absorbs the H_2S contained in the gas. The desulfurized gas leaves the top of the absorber, while the rich solution (the solution which contains the H_2S) is sent to the regenerator column. In the regenerator, the volatile H_2S is separated by steam stripping. The regenerated solution is recycled to the contactor. The acid gas, which now contains the H_2S, is sent to the sulfur plant. A flare (SN-SL-01) is used during emergencies to burn vent gases when either equipment malfunction or power failure occur.

Sulfur Recovery Plant

The acid gas from the Gas Sweetening Plants is sent to a sulfur recovery plant. The sulfur recovery plant uses the Claus process, where exothermic reactions convert H_2S to elemental sulfur. The Claus plant at Albemarle removes 93% of the sulfur from the sour gas. The sulfur is sold as a product. The tail gas is sent to an incinerator (SN-SR-01). The Claus plant itself has no emissions.

Tail Gas Incinerator

Vent gases from the sulfur recovery plant and the DECTP scrubber are burned in the tail gas incinerator. The tail gas incinerator is designed for a minimum exhaust temperature of $1200^{o}F$.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, record keeping, and reporting requirements.

Specific Conditions

11. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table:

SN-#	Description	Pollutant	lb/hr	tpy
SL-01	Gas Sweetening Process Flare	PM_{10} SO_2 VOC CO NO_X	0.01 0.01 0.01 0.01 0.02	0.05 0.05 0.05 0.05 0.10
SL-02	Sulfinol Storage Tank	VOC	0.12	0.60
SR-01	Tail Gas Incinerator	PM_{10} SO_2 VOC CO NO_X	0.07 727.00 0.07 0.25 0.60	0.31 3184.0 0.31 1.10 2.60
SR-02	Sulfur Area Fugitives	VOC	0.50	2.20

12. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the

following table.

SN-#	Description	Pollutant	lb/hr	tpy
SL-01	Gas Sweetening Process Flare	PM	0.01	0.05
SR-01	Tail Gas Incinerator	PM	0.07	0.31
SR-02	Sulfur Area Fugitives	Methanol[HAP]	0.06	0.26

13. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-SL-01 and SN-SR-01.

14. Pursuant to 40 CFR 70.6(a)(3)(iii)(B), and §26.7 of Regulation 26, any flare event where non-pipeline quality gas is burned at SN-SL-01, with the exception of those instances outlined in Specific Condition 17, shall be reported in accordance with the requirements of General Provision 8.

15. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall operate and maintain a device to continuously monitor and record the temperature of the exhaust from the tail gas incinerator (SN-SR-01). This temperature shall be maintained at or above 1200^{o}F during those periods when sulfur-bearing gases are being incinerated.

16. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall test SN-SR-01 for lb/hr emissions of SO_2, using EPA Reference Method 6C. The testing shall be performed in 2005, and every five years thereafter.

17. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 52 Subpart E, during times of equipment malfunction or power failure, the permittee shall be allowed to operate under the following alternate scenarios within the limits outlined for each.

Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
SN-SL-01	Emergency Flaring of Brinefield Gas	PM_{10} SO_2 VOC CO NO_X	3.70 12,066.00 3.70 13.40 31.40	0.02 36.00 0.02 0.04 0.10	Actual emissions shall be calculated and recorded for each event.
SN-SL-01	Emergency Flaring of Sweet Gas	PM_{10} SO_2 VOC CO NO_X	2.20 5.60 2.20 7.80 18.40	0.11 0.27 0.11 0.38 0.89	Not to exceed 96 hours per year.
SN-SR-01	Tail Gas Pilot Flame Deviation (<1200°F)	SO_2	242.6	2.82	Not to exceed 24 hours per year.

18. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall maintain records which document compliance with the operating limits of the above listed scenarios. The records shall be updated as performed, kept on site, and made available to Department personnel upon request.

19. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, during times of equipment malfunction or power failure, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
SN-SL-01	Emergency Flaring of Brinefield Gas	PM	3.70	0.02	Actual emissions shall be

					calculated and recorded for each event.
SN-SL-01	Emergency Flaring of Sweet Gas	PM	2.20	0.11	Not to exceed 96 hours per year.
SN-SR-01	Tail Gas Pilot Flame Deviation (<1200°F)	H_2S	257.4	3.09	Not to exceed 24 hours per year.

20. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall maintain records which document compliance with the operating limits of the above listed scenarios. The records shall be updated as performed, kept on-site, and made available to Department personnel upon request.

20a. Pursuant to §19.304 and 40 CFR §60.116b(a) & (b), the permittee shall keep readily accessible records showing the dimensions and an analysis showing the capacity of the Sulfinol Storage Tank (SN-SL-02) for the life of the vessel.

Albemarle Corporation-Magnolia South Plant
762-AOP-R1
14-00028

Clear Completion Fluids

Introduction

At one time Albemarle Corporation's predecessor, Ethyl Corporation, operated three separate facilities which manufactured calcium & zinc bromide, sodium bromide, and solid sodium & calcium bromide. Of the three, the solids plant is no longer used at all, the sodium bromide plant is used only to make HBR, and the Clear Completion Fluids (CCF) facility is used to make calcium, zinc, and sodium bromide.

Calcium, Zinc, and Sodium Bromide Process Description

Calcium, zinc, and sodium bromide are produced in a batch process by reacting lime, zinc oxide, or sodium hydroxide with hydrobromic acid and elemental bromine. Albemarle can also produce these bromides by reacting the metal, or metal hydroxide, bromine, and methanol. These processes are capable of producing a number of bromine salts, depending on the metal, metal oxide, or metal hydroxide used as a starting material. However, Albemarle is only permitted to manufacture those compounds listed here. Vapors generated during the reaction are controlled by two scrubbers (SN-CB-02, SN-CB-16). Particulate emissions from raw material handling are controlled by two baghouses (SN-CB-01, SN-CB-18).

Calcium Bromide Alternate Operating Scenario

The alternate operating scenario for the Clear Completion Fluids process area employs Br_2, methanol (MeOH), and calcium hydroxide ($Ca(OH)_2$ as feedstocks for batch $CaBr_2$ production. Calcium hydroxide reacts with the Br_2/MeOH in an exothermic reaction to yield $CaBr_2$ product. Condensates entrained in the vapor leaving the reactor are collected in a knockout pot. Periodically, these condensates are drained and neutralized before being piped to an extraneous water system. The remaining vapor is routed to a caustic (NaOH) scrubber before being vented to the atmosphere. The spent caustic scrubber water is drained and piped to an extraneous water system. Approximate batch time for $CaBr_2$ production using Br_2/MeOH is six hours.

Sodium Bromide (now HBr) Process Description

As stated above, the sodium bromide plant is no longer used to make sodium bromide. It is used to make high quality hydrogen bromide and is considered a part of the Alkyl Amines facility. Control devices associated with that plant are now permitted with the Alkyl Amines facility.

Solid

Sodium and Calcium Bromide

Solid sodium and calcium bromide are no longer made at this facility. The emission points associated with this process, SN-SD-1C and SN-SD-1S, are no longer used.

Compliance with permitted emission rates for the Clear Completion Fluids processes shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

21. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
CB-01	Raw Material Silo	PM_{10}	0.10	0.44
CB-02	R-21 Vent Scrubber (South)	VOC	0.27	1.18
CB-04	Methanol Storage Tank	VOC	25.5	0.35
CB-16	R-22 Vent Scrubber (North)	VOC	0.27	1.18
CB-17	CCF Fugitive Emissions	VOC	1.80	7.90
CB-18	Raw Material Baghouse	PM_{10}	0.10	0.44

22. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
CB-01	Raw Material Silo	PM	0.10	0.44
CB-02	R-21 Vent Scrubber (South)	Methyl Bromide^{HAP}	0.20	0.88

SN-#	Description	Pollutant	lb/hr	tpy
		Methanol[HAP] Br_2[NCAC]	0.07 0.10	0.30 0.44
CB-04	Methanol Storage Tank	Methanol[HAP]	25.5	0.35
CB-16	North Reactor Scrubber Vent	Methyl Bromide[HAP] Methanol[HAP] Br_2[NCAC]	0.20 0.07 0.10	0.88 0.30 0.44
CB-17	CCF Fugitive Emissions	Methanol[HAP] (Br_2+HBr)[NCAC]	1.30 2.40	5.70 10.50
CB-18	Raw Material Baghouse	PM	0.10	0.44

23. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-CB-01, SN-CB-02, SN-CB-16, and SN-CB-18.

24. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct stack testing for bromine (Br_2) at SN-CB-02 and SN-CB-16. The testing shall be performed in 2002, and every five years thereafter, using EPA Reference Method 26A.

25. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-CB-02 and SN-CB-16 at least once per batch, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on site and made available to Department personnel upon request.

26. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall use fresh caustic with every zinc chloride batch at scrubbers SN-CB-02 and SN-CB-16. For calcium bromide and sodium bromide, the pH shall be tested once per batch, and caustic changeouts performed as needed. Each pH test and caustic changeout shall be logged as performed. Both pH and changeout records corresponding to the most recent satisfactory test event shall be kept on site and made available to Department personnel upon request.

27. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall calculate methyl bromide and methanol emissions from SN-CB-02 and SN-CB-16 once every six months. Emission estimates shall be quantified as lb/hr and ton/yr, using worst-case parameters for hourly emissions and a rolling twelve-month total for annual figures. The calculations shall be kept on site and made available to Department personnel upon request. The calculations shall indicate compliance status with regard to both normal and alternate operating scenarios.

27a. Pursuant to §19.705, §18.1004, 40 CFR Part 70.6 and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall demonstrate compliance with SN-CB-04 emission rates by not exceeding a throughput of 1,000,000 gallons of methanol or other less volatile VOC per twelve consecutive months at this tank.

27b. Pursuant to §19.705, §18.1004, Part 52 and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall maintain monthly records demonstrating compliance with Condition 35a. Records shall be updated by the 15th day following the month to which the records pertain , made available to Department personnel upon request, and otherwise in accordance with General Provision 7.

Additional conditions for Calcium Bromide Alternate Operating Scenario:

28. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
CB-02 CB-16	R-21 Vent Scrubber (South) & R-22 Vent Scrubber (North)	VOC	9.00	22.2
CB-04	Methanol Storage Tank	VOC	26.0	0.4

29. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy

SN-#	Description	Pollutant	lb/hr	tpy
CB-02 CB-16	R-21 Vent Scrubber (South) North Reactor Scrubber Vent	Methyl Bromide[HAP] Methanol[HAP] Bromoform[HAP] Ethylene Dibromide[HAP] HBr[NCAC] Br_2[NCAC]	2.3 2.3 2.3 2.3 0.10 0.10	8.3 0.8 1.3 5.5 0.2 0.4
CB-04	Methanol Storage Tank	Methanol	26.0	0.4

30. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-CB-02 and SN-CB-16 at least once per alternate scenario batch, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on site and made available to Department personnel upon request.

31. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall use fresh caustic with each alternate scenario batch SN-CB-02 and SN-CB-16. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records shall be kept on site and made available to Department personnel upon request.

32. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall be limited to 1460 total batches under the alternate operating scenario per rolling 12-month period. Monthly records documenting batch totals shall be maintained on site and made available to Department personnel upon request.

33. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall only use one Clear Completion Fluids reactor at any given time under the alternate scenario.

34. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall conduct stack testing on the Clear Completion Fluids reactor scrubber vents according to the following methods and schedule:

SN	Pollutant	EPA Reference Method	Schedule
CB-02	VOC	18 or 25A	Within 270 operating days under this alternate scenario and every 365 operating days thereafter.
CB-16	VOC	18 or 25A	Within 180 operating days under this alternate scenario and every 365 operating days thereafter.

The testing shall be performed while the reactors are operating under the alternate CaBr scenario.

35. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct stack testing for methyl bromide at either SN-CB-02 or SN-CB-16. The test for MeBr shall be conducted on whichever source (SN-CB-02 or SN-CB-16) is involved in the alternate CaBr operating scenario, as described above, at the time of testing. The test shall be performed within 180 operating days of this alternate scenario, and within every 730 operating days thereafter, using EPA Reference Method 18.

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Diethylchlorothiophosphate (DECTP) Production

Raw materials and solvent are added to the reactors. Two by-products are formed during the main reactions: H_2S and HCl. The H_2S evolved during initial stages of the batch is compressed and stored. A portion of this H_2S is later recycled back to the reactor, and the remainder is sent to the sulfur plant to be converted to elemental sulfur. The HCl evolved is scrubbed with water, and the aqueous HCl is sent to a storage tank in the bromine area. Both H_2S and HCl are vented from the reactor during the latter part of the batch. The HCl is scrubbed with water and the H_2S is neutralized in a vent scrubber.

The crude product is centrifuged to remove elemental sulfur. The sulfur is melted, and a vacuum is applied to remove organics. The sulfur is transferred to the sulfur trailer and finally to the landfill. The sulfur trailer vents to the vent gas oxidizer (VGO, SN-DE-21).

The crude product is purified via distillation. The solvent is recovered and recycled, and the purified product is either sent directly to bulk product storage, or further purified before final storage. The vent gases and liquid wastes from the purification process are neutralized with caustic. The vent gases from the final purification operation are scrubbed in a packed aqueous scrubber. The aqueous waste is disposed of by deep well injection, and the organic waste is sent off site.

In the event of an emergency, gases are vented to the flare system (SN-DE-17), to be combusted before their release to the atmosphere. Any liquids or solids discharged from the reactor or crystallizer are routed to the blowdown pit (SN-DE-18), where they are burned.

The vent gases from raw material storage, product storage, and waste oil storage are routed through the VGO, where 99% of the vent gases are destroyed before being released to the atmosphere.

A product purification area is in operation. Emissions are controlled by a reactive vent scrubber, employing an aqueous solution of sodium hydroxide. The vent from this operation is routed to the VGO during normal operation; however, during VGO downtime, exhausts are designated as SN-DE-23. VGO downtime is limited to a maximum of 876 hours per year.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, record keeping, and reporting requirements.

36. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
DE-01	Ethanol Storage Tank	Routed to SN-DE-28		
DE-02	Toluene Storage Tank			
DE-03	Chaser Storage Tank			
DE-04	Crude Product Storage Tank	VOC	8.96	3.93*
DE-06	Product Rundown Storage Tank	VOC	0.62	0.28*
DE-07	Product Rundown Storage Tank	VOC	0.62	0.28*
DE-08	Product Rundown Storage Tank	VOC	0.62	0.28*
DE-09	Product Bulk Storage Tank	Routed to SN-DE-28		
DE-10	Product Rundown Storage Tank	VOC	0.62	0.28*
DE-11	Chaser Bulk Storage, T-302	VOC	0.39	1.71
DE-12	Recovered Oil Storage Tank	VOC	0.20	0.10*
DE-17	Process Safety Flare, Emergency Use Only, XF-2461 (Continuous Pilot)	PM_{10} SO_2 VOC CO NO_x	0.01 0.06 0.01 0.01 0.05	0.05 0.05 0.05 0.05 0.22
DE-18	Reactor Safety Blowdown System Vent Line (Continuous Pilot)	PM_{10} SO_2 VOC CO NO_x	0.01 0.01 0.01 0.02 0.10	0.05 0.05 0.05 0.10 0.44
DE-19	Sulfur Trailer Knockout Drum	VOC	8.00	3.50*

SN-#	Description	Pollutant	lb/hr	tpy
DE-20	Isopropanol Storage Tank	VOC	9.40	4.10*
DE-21	Vent Gas Oxidizer (VGO) Basic Environmental Eng., Inc. Model T075	PM_{10} SO_2 VOC CO NO_x	2.20 7.00 0.60 2.00 1.00	9.64 30.66 2.63 8.76 4.38
DE-22	DECTP Fugitive Emissions	VOC	9.40	41.10
DE-23	DECTP Purification Process	VOC	2.83	1.24*
DE-24	MC-2431, Centrifuge	VOC	12.70	5.60*
DE-25	Product Storage Tank	Routed to SN-DE-28		
DE-28	Vent Header	VOC	23.6	10.4*

*See Specific Condition 39.

37. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
DE-02	Toluene Storage Tank	Routed to SN-DE-28		
DE-03	Chaser Storage Tank			
DE-04	Crude Product Storage Tank	Toluene[HAP] Methyl Naphthalene[HAP]	8.80 0.01	3.85* 0.01*
DE-11	Chaser Bulk Storage, T-302	Methyl Naphthalene[HAP]	0.12	0.53
DE-12	Recovered Oil Storage Tank	Toluene[HAP] Methyl Naphthalene[HAP]	0.04 0.01	0.02* 0.01*

SN-#	Description	Pollutant	lb/hr	tpy
DE-17	Process Safety Flare, Emergency Use Only, XF-2461 (Continuous Pilot)	PM	0.01	0.05
DE-18	Reactor Safety Blowdown System Vent Line (Continuous Pilot)	PM	0.01	0.05
DE-19	Sulfur Trailer Caustic Drum	Toluene[HAP]	8.00	3.50*
DE-21	Vent Gas Oxidizer (VGO) Basic Environmental Eng., Inc. Model T075	PM Cl_2[HAP] HCl[HAP]	2.20 0.30 6.72	9.64 1.31 29.4
DE-22	DECTP Fugitive Emissions	Cl_2[HAP] HCl[HAP] Toluene[HAP] Methyl Naphthalene[HAP] HCFC-22[NCAC]	0.05 1.00 0.55 1.13 0.01	0.22 4.40 2.40 5.00 0.04
DE-23	DECTP Purification Process	HCl[HAP] Chloroethane[HAP]	0.34 2.60	0.15* 1.14*
DE-24	MC-2431, Centrifuge	Toluene[HAP]	12.70	5.60*
DE-28	Vent Header	Toluene[HAP] Methyl Naphthalene[HAP]	11.0 0.09	4.82* 0.04*

*See Specific Condition 39.

38. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-DE-17, SN-DE-18, SN-DE-21, and SN-DE-23.

39. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, all sources marked with an asterisk (*) in the tables

following Specific Conditions 36 and 37 shall be vented to the Vent Gas Oxidizer (VGO), SN-DE-21, under Scenario I. Scenario I may be operated 8760 hours per year. However, in the event of a VGO shutdown (Scenario II), the marked sources shall be permitted individually for the emissions shown. Scenario II, an alternate operating scenario, shall only be in effect when the VGO is down, and shall not exceed 876 hours per year.

40. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall keep monthly records of operating hours for Scenario II ("VGO Down"). The records shall be updated by the 5th day of the month following the recorded month, and shall include a rolling twelve-month total of the operating hours.

41. Reserved.

42. Reserved.

43. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, operation of the Emergency Flare (SN-DE-17) is authorized for emergency and maintenance use only. Operation of this control device for emergency use shall not exceed 30 minutes, in the aggregate, during any 24-hour period. Any emergency use exceeding this requirement shall be recorded as an upset condition, in accordance with General Provision 8 of this permit. Operation for maintenance use shall not exceed 24 hours per year. Flare operation time logs shall be required for both emergency events and maintenance operations. Calculated emission records shall only be required for emergency events. All aforementioned documentation shall be updated on an as-performed basis, maintained on site, and made available to Department personnel upon request.

44. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, operation of the Blowdown Pit (SN-DE-18) is authorized for emergency use only. Any time this source is activated, the permittee shall report the occurrence as an upset condition, in accordance with General Provision 8.

45. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the Vent Gas Oxidizer (SN-DE-21) shall be designed and operated such that the VOC emissions routed to it are maintained at a minimum combustion zone temperature of 1400^{o}F. The combustion zone temperature shall be continuously monitored by a monitoring and recording device that is operated,

calibrated, and maintained according to the manufacturer's specifications and recommendations for use.

46. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall maintain an operating log for the Vent Gas Oxidizer showing all periods during which the minimum temperature is not maintained while operating in the "VGO Up" scenario (Scenario I). The permittee shall report all such occurrences in accordance with General Provision 8.

47. Pursuant to 40 CFR 60.116 (b) (Subpart Kb), the permittee shall maintain records of the dimensions and capacity of the storage vessels that vent to SN-DE-04, 09, 12, and 20.

48. Pursuant to 40 CFR Part 61, Subpart FF (see Appendix A), the permittee shall keep all applicable benzene waste stream records as outlined by §61.356 (b).

49. Pursuant to 40 CFR Part 61, Subpart FF, the permittee shall comply with all applicable benzene waste stream reporting requirements as outlined by §61.357 (c).

50. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the liquid flow rate of the scrubber media at SN-DE-23 every four hours. These records shall be kept on site and made available to Department personnel upon request. The flow value measured at the most recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed.

51. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the caustic concentration of the scrubber media used for SN-DE-23 each time the caustic is diluted at railcar unloading. The caustic shall be changed at SN-DE-23 at least once every two operating hours. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records shall be kept on site and made available to Department personnel upon request.

52. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall test SN-

DE-23 for VOC using EPA Reference Method 18 or 25A. The testing shall be conducted in 2005 and every five years thereafter. The testing shall be coordinated in advance with the Compliance Inspector Supervisor.

53. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall test SN-DE-23 for HCl using EPA Reference Method 26, and for chloroethane using EPA Reference Method 18. The testing shall be conducted in 2005 and every five years thereafter. The testing shall be coordinated in advance with the Compliance Inspector Supervisor.

54. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall test SN-DE-21 for VOC using EPA Reference Method 18 or 25A. The testing shall be conducted in 2005 and every five years thereafter. The testing shall be coordinated in advance with the Compliance Inspector Supervisor.

55. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall calculate worst-case lb/hr emissions for toluene and DECTP at SN-DE-24 every 100 hours of operation. This applies only to operation during the VGO downtime scenario. These calculations shall be kept on site and made available to Department personnel upon request.

Alkyl Amines Process

Alkyl amines are produced by the reaction of primary or secondary amines with alkyl bromides in the presence of sodium hydroxide.

The raw materials used in the production of alkyl amines are primary and/or secondary amines, which are purchased as raw materials from an outside supplier, and olefins. The olefins are selected from the group of olefins that have eight or more carbon atoms in their structure. These olefins are also purchased from off-site suppliers. The olefins are converted to an alkyl bromide by reaction with hydrogen bromide produced on-site. The alkyl bromides thus produced are reacted with a primary and/or secondary amine in the presence of sodium hydroxide to produce the desired product alkyl amine. The choice of the starting amine(s) and alkyl bromide(s) determines the structure of the product, which is a secondary or tertiary alkyl amine. The product amine is thus "tailored" to the needs of the user. Product amines are, by nature of the production process, statistical distributions of alkyl amines, depending on the initial raw materials.

By-products from this process are mixtures of alkyl amines and olefins and an aqueous solution of sodium bromide. The by-products can often be sold as product, depending on market demand. By-products that cannot be sold or internally transferred as product are disposed off-site.

By-product sodium bromide brines are recycled to the bromine plant for conversion to bromine. Bromine from the bromine plant is the ultimate source of the hydrogen bromide used to make the alkyl bromides mentioned above.

Hydrogen bromide is produced within the Alkyl Amines facility in an integrated process by directly reacting hydrogen and bromine. Part of this hydrogen bromide is used to produce hydrobromic acid, which may be used on-site or transferred off-site as product.

This permitting action allows the installation of a new 500 gallon tank, to be used in a new product recovery effort in the Alkyl Amines process area.

Under the new product recovery process, the bottoms waste stream from the ADMA product distillation column is collected in a tank and sent batchwise to a wiped film evaporator, where the product is flashed overhead and condensed in a heat exchanger. The condensate drains by gravity to a collection drum, from which it would be pumped to a storage tank (D-1534, new

unit). Recovered material would be pumped to existing ADMA storage tanks. Evaporator bottoms would be sent to the existing waste tank.

The only emission point affected by this new scenario is the new tank's vent, SN-AD-37. The only emissions involved are volatile organic compounds, at a rate of 0.05 lb/hr and 0.17 ton/yr. The volatile emissions are not considered hazardous air pollutants.

Emission control devices for the Alkyl Amines process include the Acid Vent Scrubber (SN-AD-05), the Emergency Flare (SN-AD-26), and the Alkyl Amines Area Odor Control Vent Gas Oxidizer (SN-AD-35).

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, record keeping, and reporting requirements.

Specific Conditions

56. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
AD-01	Olefins Storage Tank #1: T-1501	VOC	0.16	0.71
AD-02	Olefins Storage Tank #2: T-1503	VOC	0.16	0.71
AD-03	Alkyl Amines Storage Tank: T-1502	VOC	0.26	1.14
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03).	VOC	0.20	0.88
AD-07	Alkyl Amine Rundown Tank: T-1534A	VOC	0.05	0.22
AD-08	Alkyl Amines Rundown Tank: T-1534B	VOC	0.05	0.22
AD-09	Alkyl Amines Rundown Tank: T-1534C	VOC	0.05	0.22
AD-10	Alkyl Amines Storage Tank: T-1537	VOC	0.26	1.14

SN-#	Description	Pollutant	lb/hr	tpy
AD-11	Alkyl Amines Storage Tank: T-1535	VOC	0.26	1.14
AD-12	Alkyl Amines Storage Tank: T-1536	VOC	0.26	1.14
AD-13	Alkyl Amines Storage Tank: T-1538	VOC	0.26	1.14
AD-14	Alkyl Amines Storage Tank: T-1539	VOC	0.26	1.14
AD-15	Alkyl Amines Storage Tank: T-1540	VOC	0.26	1.14
AD-17	Alkyl Amines Blend Tank: D2427-A	VOC	0.26	1.14
AD-18	Sodium Bromide Brine for Recycle: T-1409	VOC	0.26	1.14
AD-20	Olefins Storage Tank: T-1405A	VOC	0.16	0.71
AD-21	Olefins Storage Tank: T-1405B	VOC	3.45	15.08
AD-23	Alkyl Amines Storage Tanks: T-1408 A, B	VOC	0.03	0.14
AD-24	Product Storage: Alkyl Amines: T-1542	VOC	0.26	1.14
AD-25	Product Storage: Alkyl Amines: T-1543	VOC	0.26	1.14
AD-26	Emergency Flare	PM_{10} SO_2 VOC CO NO_x	0.01 0.01 0.01 0.02 0.03	0.05 0.05 0.05 0.09 0.14
AD-27	Recycle Brine Storage Tank: T-1407	VOC	0.26	1.14
AD-28	Stripped Recycle Brine Storage Tank: T-1541	VOC	0.08	0.35
AD-29	Stripped Recycle Brine Tank: T-1544	VOC	0.08	0.35
AD-35	Alkyl Amines Area Odor Control Vent	PM_{10} SO_2	0.22 0.09	0.97 0.40

SN-#	Description	Pollutant	lb/hr	tpy
	Gas Oxidizer (VGO)	VOC CO NO_x	1.22 0.06 0.70	5.35 0.27 3.07
AD-36	Fugitive Emissions, Including Product Loading	VOC	4.13	18.14
AD-37	ADMA Condensate Collection Tank	VOC	0.05	0.17

57. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03).	HBr^{NCAC}	0.03	0.14
AD-26	Emergency Flare	PM $Br_2{}^{NCAC}$	0.01 0.02	0.05 0.01
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM $Br_2{}^{NCAC}$	0.22 0.03	0.97 0.14
AD-36	Fugitive Emissions, Including Product Loading	$(Br_2+HBr)^{NCAC}$ HCFC-22^{NCAC} HFC-125^{NCAC} HFC-$143a^{NCAC}$	3.76 0.80 0.02 0.02	16.47 3.50 0.09 0.09

58. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-AD-05, SN-AD-26 and SN-AD-35.

59. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) 40 CFR 60.116 (b) (Subpart Kb), the permittee shall maintain

readily accessible records, showing the dimensions of all affected storage vessels at the Alkyl Amines facility, and an analysis which documents their capacity. Affected tanks shall include:

SN-AD-15, SN-AD-17, SN-AD-20, SN-AD-21, SN-AD-24, SN-AD-25, SN-AD-28, SN-AD-29, and SN-AD-35.

60. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall maintain readily accessible records which document that storage of C8 olefin at SN-AD-21 does not exceed 4380 hours per rolling 12-month time frame.

61. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, operation of the Emergency Flare (SN-AD-26) is authorized for emergency use only. Operation of this control device shall not exceed 30 minutes, in the aggregate, during any 24-hour period.

62. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, flare operation time shall be recorded on a daily basis. For any use beyond the 30 minute per 24-hour limit, the permittee shall calculate and record the resulting emissions on a daily basis. Flare time and all required calculated emissions shall be maintained on site and made available to Department personnel upon request. Further, any emergency use exceeding the requirement set forth in the previous condition shall be recorded as an upset condition, in accordance with General Provision 8 of this permit.

63. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall test SN-AD-05 for VOC in 2006 and every five years thereafter. The testing shall be performed in accordance with EPA Reference Method 18 or 25A.

64. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the flow rate of the scrubber media at SN-AD-05 every four hours. These records shall be kept on site and made available to Department personnel upon request. The flow value

measured at the most recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed.

65. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the caustic concentration of the scrubber media used for SN-AD-05 once per twelve-hour shift. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records shall be kept on site and made available to Department personnel upon request. The caustic concentration and changeout schedule corresponding to the most recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed.

66. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall test SN-AD-35 for the following compounds in 2002 and every two years thereafter. Applicable test methods are listed in the right column of the table.

Pollutant	EPA Reference Method
PM_{10}	5
SO_2	6C
VOC	18 or 25A
CO	10B
NO_X	7E

67. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 C FR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall operate and maintain a device to continuously monitor and record the temperature of the exhaust from the vent incinerator (SN-AD-35). This temperature shall be maintained at or above 1500^{o}F during those periods when any process gases are being incinerated.

68. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall test SN-

AD-05 and SN-AD-35 for the following compounds in calendar year 2002 and every five years thereafter. Applicable test methods are listed in the right column of the table.

Source	Pollutant	EPA Reference Method
SN-AD-05	HBr^{NCAC}	26A
SN-AD-35	Br_2^{NCAC}	26A

Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

Alkyl Bromides Process

Alkyl bromides (RBr) can be produced by the action of hydrogen bromide (HBr) on the corresponding alkyl chloride (RCl). An example is to react HBr with dichloromethane (commonly called methylene chloride) to produce a mixture of bromochloromethane (BCM) and dibromomethane (methylene dibromide, MDB). The product mixture can be separated by distillation and stored. The alkyl bromide product finds use on the plant site as a process solvent, and is sold into various markets.

The alkyl chlorides used as raw materials are low boiling liquids. The alkyl bromide products are higher boiling liquids, and can thus be separated by batch distillation from the other constituents in the product mixture. The hydrogen bromide used as a raw material is a gas at ordinary temperatures and pressures.
Emission control at the Alkyl Bromides Process is facilitated by a carbon bed adsorption system, which vents at SN-AB-15.

Compliance with permitted emission rates shall be demonstrated through parametric monitoring, record keeping, and reporting requirements.

Specific Conditions

69. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	VOC	1.20	5.30
AB-16	Alkyl Bromide Fugitive Emissions	VOC	7.50	32.90

70. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	$MeCl_2^{HAP}$	0.24	1.10
AB-16	Alkyl Bromide Fugitive Emissions	$MeCl_2^{HAP}$ $HFC\text{-}125^{NCAC}$ $HFC\text{-}143a^{NCAC}$	1.50 0.02 0.02	6.60 0.09 0.09

71. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart F, 63.104(a)(1) (see Appendix A), all methylene chloride/water heat exchangers shall be operated with the minimum pressure on the cooling side at least 35 kPa greater than the maximum pressure on the process side.

72. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the pressure differential between the cooling and process sides of the methylene chloride/water heat exchangers shall be measured once daily and recorded in a log. This record shall be kept on site as a verification of compliance with 63.104(a)(1), and shall be made available to Department personnel upon request.

73. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart F, 63.105, a maintenance wastewater procedure shall be prepared and followed for this process. Details of the requirements of this procedure are contained in 40 CFR 63.105(b) through (e).

74. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart G, 63.115(d)(1)(i) (see Appendix A), Total Resource Effectiveness (TRE) calculations shall be performed and maintained for all process vents (all Subpart G vents in this process area are Group 2 vents). The TRE calculations shall be updated whenever process changes are made. If the TRE index value is less than or equal to 4.0, the permittee shall follow the procedures outlined in 40 CFR 63.115(d) (1)(ii).

75. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart G, the following records shall be maintained:

    (i) TRE calculations and all backup information [63.117(b)].
    (ii) Records of process changes and TRE recalculations [63.118(c)(1)&(2)].
    (iii) Records of $MeCl_2$ storage vessel dimensions and capacity [63.123(a)].

76. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart G, the permittee shall submit reports of compliance status and process changes as outlined in paragraphs 63.117(b), 63.118(g), and 63.118(h).

77. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart H, all equipment in $MeCl_2$ service shall comply with the requirements of the National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks, as outlined in paragraphs 63.160 through 63.182. These sections specify standards for pumps in light liquid service, compressors, pressure relief devices in gas/vapor service, sampling connection systems, open-ended valves or lines, and valves in gas/vapor service and light liquid service.

78. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart H (see Appendix A), the permittee shall follow the recordkeeping and reporting procedures for equipment leaks as outlined in paragraphs 63.181 and 63.182.

79. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 60, Subpart Kb, §60.116(b), the permittee shall maintain readily accessible records showing the dimensions of the Outside Crude Tank, T-204, and an analysis showing the capacity of the vessel.

80. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the control equipment maintained on source SN-AB-15 shall be comprised of a minimum of two carbon adsorption units, each having a 2' diameter and a 4.7' column length. The carbon shall be regenerated once per 12 hours of

operating time. Only steam shall be used to regenerate the carbon. Upon completion of regeneration, only air shall be used to cool the carbon. The carbon shall be replaced as needed, but no less frequently than every 10,220 hours of actual source operation.

81. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, records of all carbon regeneration and replacement shall be maintained, updated as performed, and made available to Department personnel upon request.

NC-12 Flame Retardant Process

Flame retardant product (Decabromodiphenyl oxide) is produced by reacting raw material (diphenyl oxide) with bromine. This reaction forms hydrogen bromide as a by-product. The hydrogen bromide is purified and stored under pressure, or absorbed in water to make hydrobromic acid. The flame retardant product is a solid. Dust generated by the handling and packaging of the product is controlled by fabric filters (SN-DB-05, SN-DB-06).

Back-up Scrubber (SN-DB-17) is used during periods when Vent Scrubber (SN-DB-01) is down. The Back-up Scrubber controls emissions resulting from the nitrogen purge system at the NC-12 HBr compression equipment.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

82. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
DB-04	Product Dryer Filter	PM_{10} SO_2 VOC CO NO_x	1.80 0.14 0.96 3.60 1.60	7.90 0.61 4.20 15.8 7.00
DB-05	Product Vent Filter Silo Baghouse	PM_{10}	0.30	1.30
DB-06	Product Vent Filter Silo Baghouse	PM_{10}	0.30	1.30
DB-07	Raw Material Storage Tank	VOC	0.10	0.44
DB-08	Product Vent Filter	PM_{10}	1.10	4.80

SN-#	Description	Pollutant	lb/hr	tpy
DB-10	Ethylene Glycol Storage Tank	VOC	0.01	0.04
DB-16	NC-12 Fugitive Emissions	VOC	1.40	6.10

83. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
DB-01	Vent Scrubber	$(Br_2+HBr)^{NCAC}$	0.40	1.80
DB-04	Product Dryer Filter	PM $(Br_2+HBr)^{NCAC}$	1.80 1.65	7.90 7.20
DB-05	Product Vent Filter Silo Baghouse	PM	0.30	1.30
DB-06	Product Vent Filter Silo Baghouse	PM	0.30	1.30
DB-07	Raw Material Storage Tank	HCl^{HAP}	5.10	3.10
DB-08	Product Vent Filter	PM	1.10	4.80
DB-10	Ethylene Glycol Storage Tank	Ethylene Glycol^{HAP}	0.01	0.04
DB-16	NC-12 Fugitive Emissions	$(Br_2+HBr)^{NCAC}$ HCFC-22^{NCAC}	5.81 0.01	25.44 0.04
DB-17	Back-up Water Scrubber	$(Br_2+HBr)^{NCAC}$	0.10	0.44

84. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-DB-01, SN-DB-04, SN-DB-05, SN-DB-06, SN-DB-08 and SN-DB-17.

85. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Subpart Kb, Paragraph 60.116b(a and b) (see Appendix A), the permittee shall maintain readily accessible records showing the dimensions of the storage vessel that vents to SN-DB-07, and an analysis showing its capacity.

86. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall test the following sources for the listed compounds in calendar year 2002 and every five years thereafter. Test methods are listed in the right-hand column of the table.

Source	Compound	EPA Reference Method
SN-DB-01	Br_2^{NCAC}	26A
SN-DB-04	Br_2^{NCAC}	26A

Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

87. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-DB-01 at least once per day, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on site and made available to Department personnel upon request. The visual inspection method shall be confirmed by the most recent satisfactory stack test for purposes of continuous compliance until the next test is performed.

88. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the caustic concentration of the scrubber media used for SN-DB-01 at least once per twelve-hour shift. The caustic shall be replaced when the concentration falls below 5% strength.

89. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall perform monthly calculations for worst-case lb/hr and ton/month emissions of Br_2 and HBr at SN-DB-04. These calculations shall be based upon most recent available test data (beginning with 1994 data submitted with the application received 7/10/96). These calculations shall be completed by the 15th day of the following month, and shall be kept on site and made available to Department personnel upon request.

90. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall be limited to drying 150 tanks of diphenyl oxide (DPO, stored at SN-DB-07) per rolling 12-month period. Records shall be maintained to demonstrate compliance with this limit. The records shall be updated weekly, maintained on site, and made available to Department personnel upon request.

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NC-14 Flame Retardant Production

Flame retardant (tetrabromobisphenol-A) is produced by reacting raw material (bisphenol-A) in methanol with bromine. A coproduct of this reaction is methyl bromide. Methyl bromide is used as a fumigant and as a raw material in other chemical processes.

The methyl bromide is purified in a separate process train and stored in pressure tanks with vapors controlled first by recovery condensers, then by a vent condenser and recovery equipment.
Unreacted methanol is reclaimed and returned to the process as a raw material. Brines containing high concentrations of bromides are generated and recycled to produce bromine (raw material). An organic by-product stream is also produced.

The flame retardant is a solid. Dusts generated when processing and packaging the solid are controlled with fabric filters (SN-TB-04, SN-TB-05, SN-TB-08, SN-TB-22, SN-TB-23). Volatiles, bromine, and HCl emissions are controlled by scrubbers (SN-TB-03, SN-TB-14, and SN-TB-28).

Albemarle is allowed an alternate operating scenario for the NC-14 process area. Under the alternate operating scenarios, the NC-14 process area may be used to produce methyl bromide (MeBr) as its primary product. Under the MeBr primary product scenario, two other production scenarios are possible. One scenario occurs where HON process wastewater is produced, and the other where HON process wastewater is not produced (alternate methanol recovery scenario).

When methyl bromide primary product scenario is operating, the TBBPA process will be at rest (only one may physically occur at any given time). Methyl bromide is produced by reacting hydrogen bromide with methanol. The reaction product is purified to isolate MeBr. The MeBr is compressed into the liquid state, and temporarily stored before being unloaded into railcars. The vapors from the storage tanks, processing equipment, and transfer operations are controlled by a product recovery system, where the MeBr is recovered and sent back to the purification process. Therefore, the methyl bromide recovery unit also serves as the emission control device for the process. The unreacted methanol (in water solution) is sent to the methanol recovery system, where methanol is recovered and sent back to be used as feedstock for the reaction.

Under the alternate methanol recovery scenario, methanol introduced in the MeBr product recovery system is also routed (in water solution) to the methanol recovery

system where methanol is recovered and recycled for use as feedstock. The water leftover from methanol recovery has brine value and; therefore, is piped to the bromine recovery process. Thus, the HON process wastewater stream is not generated. Methyl bromide is a Class I, Group VI ozone depleting substance (ODS). 40 CFR Part 82, Subpart A is applicable to the new MeBr process. During MeBr production, affected sources in this unit are also subject to the requirements of 40 CFR Part 63, Subparts F, G, and H (commonly referred to as the Hazardous Organic NESHAP, or HON).

In addition to the alternate scenario involving methyl bromide, Albemarle is allowed alternate material handling and packaging scenarios using NC-14 equipment. The only affected emission point for these alternate scenarios would be SN-TB-04, the TBBPA silo baghouse. While these alternate scenarios would not occur simultaneously with normal TBBPA production, they would be allowed to occur during the MeBr scenario. Emissions resulting from these alternate scenarios are calculated to be less than the normal particulate limits permitted for standard TBBPA operation.

Compliance with permitted emission rates in the NC-14 process area shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

Conditions for TBBPA as primary product scenario only:

91. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	Methanol Storage Tank	VOC	7.20	7.20
TB-03	Area Process Scrubber (Methyl Bromide Recovery Unit)	VOC	17.00	39.54
TB-04	Product Baghouse	PM_{10} VOC	1.60 4.00	7.00 6.36
TB-08	Dust Collector Baghouse	PM_{10}	1.80	7.90

SN-#	Description	Pollutant	lb/hr	tpy
TB-11	Column Feed Tank	VOC	1.20	4.50
TB-12	Spent Sulfuric Acid Storage	VOC	0.10	0.10
TB-15	Water Tank	VOC	0.10	0.44
TB-18	Column Bottoms Tank	VOC	0.10	0.44
TB-22	BPA Storage Silo	PM_{10}	0.30	0.40
TB-23	BPA Weigh Hopper Baghouse	PM_{10}	0.02	0.02
TB-25	Column Vent	VOC	0.70	3.20
TB-28	Hydrochloric Acid Scrubber	VOC	0.10	0.10
TB-29	NC-14 Fugitive Emissions	VOC	3.47	15.25
TB-30	Methanol Storage Tank	VOC	11.80	9.30

92. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	Methanol Storage Tank	Methanol[HAP]	7.20	7.20
TB-03	Area Process Scrubber (Methyl Bromide Recovery Unit)	Methanol[HAP] Methyl Bromide[HAP]	2.00 13.00	5.32 28.50
TB-04	Product Baghouse	PM Methanol[HAP] HBr[NCAC]	1.60 4.00 2.00	7.00 6.36 6.16
TB-08	Dust Collector Baghouse	PM	1.80	7.90
TB-11	Column Feed Tank	Methanol[HAP]	0.80	3.10

SN-#	Description	Pollutant	lb/hr	tpy
TB-12	Spent Sulfuric Acid Storage	Methanol[HAP] H_2SO_4[NCAC]	0.10 0.01	0.10 0.05
TB-14	Bromine Scrubber	Br_2[NCAC]	0.10	0.30
TB-15	Water Tank	Methanol[HAP]	0.10	0.44
TB-18	Column Bottoms Tank	Methanol[HAP]	0.10	0.44
TB-22	BPA Storage Silo	PM	0.30	0.40
TB-23	BPA Weigh Hopper Baghouse	PM	0.02	0.02
TB-25	Column Vent	Methanol[HAP]	0.50	2.40
TB-28	Hydrochloric Acid Scrubber	HCl[HAP]	0.10	0.50
		Methanol[HAP]	0.01	0.05
TB-29	NC-14 Fugitive Emissions	Ethylene Glycol[HAP] Methanol[HAP] Methyl Bromide[HAP] **(Br_2+HBr)** [NCAC] **HCFC-22** [NCAC] **HFC-125** [NCAC] **HFC-143a** [NCAC]	0.06 0.37 0.37 0.46 0.05 0.03 0.03	0.25 1.64 1.64 2.02 0.22 0.13 0.13
TB-30	Methanol Storage Tank	Methanol[HAP]	11.80	9.30

93. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-TB-04, SN-TB-08, SN-TB-14, SN-TB-22, SN-TB-23, and SN-TB-28.

94. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall apply heat to the air used to convey TBBPA to the TBBPA product silo for no more than 1320 hours per rolling 12-month period. Pursuant to §18.10 of the Arkansas Air Pollution Control Code (Regulation 18) and §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall maintain records of operating hours of this scenario

(venting at SN-TB-04), to be updated daily and made accessible to Department personnel upon request.

95. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, SN-TB-22 shall be limited to 2667 hours of operation per year, and SN-TB-23 to 4.8 hours per day. Pursuant to §19.7 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall keep records of operating hours at these sources, to be updated daily and made accessible to Department personnel upon request.

96. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall maintain readily accessible records of tank throughput for the tank that vents to SN-TB-01. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the tank throughput shall be limited to 21 million gallons of methanol per rolling 12-month period.

    During periods when the tank venting at SN-TB-01 is not required for methanol service, it may be used as needed for storage of ADMA product (produced in the Alkyl Amines process area). The ADMA product stored shall have a molecular weight greater than or equal to 157.3 lb/lb mol. Documentation of ADMA material type and molecular weight shall be kept on site and made available to Department personnel upon request.

97. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall maintain a daily record of the chilled water outlet temperature which controls emissions from the condensers downstream of SN-TB-11 and SN-TB-25. The maximum allowable water temperature for this outlets shall be 40^{o}F. This parameter shall be considered compliant within 10% of the maximum allowable reading, provided the Department receives sufficient evidence that such parametric variance will not result in emission limit violation. Proposed parametric set points and allowable operating ranges shall be submitted with the test report for each affected source.

98. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall test SN-TB-04 for PM_{10} within 1500 hours of TBBPA operation after permit issuance, and

every 8760 TBBPA operating hours thereafter. The stack test shall be performed using EPA Reference Method 201, and shall be conducted while the air used to convey TBBPA to the TBBPA product silo is being heated.

99. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, The permittee shall test SN-TB-25 for VOC within 1500 hours of TBBPA operation after permit issuance, and every 8760 TBBPA operating hours thereafter. The stack test shall be performed in accordance with EPA Reference Method 18 or 25A.

100. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct stack testing for the following compounds within 1500 hours of TBBPA operation after initial permit issuance, and every 8760 TBBPA operating hours thereafter. SN-TB-04 bromine rate shall be tested in 1999 and every five years thereafter. Test methods are listed in the right-hand column of the table.

Source	Compound	EPA Reference Method
SN-TB-03[1]	Methyl Bromide^{HAP}	18
SN-TB-03[1]	Methanol^{HAP}	18
SN-TB-04	HBr^{NCAC}	26A
SN-TB-04	Methanol^{HAP}	18
SN-TB-14[3]	Br_2^{NCAC}	26A
SN-TB-25	Methanol^{HAP}	18
SN-TB-28	HCl^{HAP}	26

[1]SN-TB-03 shall be tested while the railcar is being filled.
[2]SN-TB-04 shall be tested while the air used to convey TBBPA to the TBBPA product silo is being heated.
[3]SN-TB-14 shall be tested while the bromine tank is being filled.

Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

101. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the water flow rate at SN-TB-03 (Reactor Vent (water) Scrubber) every three hours. These records shall be kept on site and made available to Department personnel upon request. The flow rates measured at the most recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed.

102. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall monitor scrubber media minimum flow SN-TB-14 via electronic control alarm. Records shall be maintained of minimum flow set point, alarm events, and corrective action. Additionally, the permittee shall measure and record the caustic concentration of the scrubber media used for SN-TB-14 each time the caustic is diluted at railcar unloading. Each caustic changeout shall also be logged as performed. These records shall be kept on site and made available to Department personnel upon request. The alarm records, caustic concentration, and changeout schedule shall be confirmed for purposes of continuous compliance until the next test is performed.

103. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall inspect the pump serving the scrubber at SN-TB-28 at least once per 12-hour shift, in order to ensure proper scrubbing fluid circulation. The inspection results shall be noted in a log as performed. The caustic weight per cent of the scrubbing solution shall be sampled and recorded each time the solution batch is diluted. A record shall also be maintained showing the timing and volume of caustic solution charge to the scrubber system. These records shall be kept on site and made available to Department personnel upon request. The records shall be confirmed for purposes of continuous compliance until the next test is performed.

Conditions for Alternate Material Handling and Packaging Scenarios

104. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR 70.6, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, during periods when TBBPA is not being produced, the permittee shall be allowed to package NC-15 flame retardant product in small sacks using existing NC-14 equipment. All normal opacity and emission limits shall apply at SN-TB-04 during this scenario.

105. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall maintain a log of NC-15 packaging hours at SN-TB-04. This record shall be updated weekly, kept on site, and made available to Department personnel upon request.

Conditions for all production scenarios (ODS requirements):

106. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 82, Subpart A, Paragraph 82.4(a) (see Appendix A), the permittee may not produce methyl bromide at any time in a control period (except that are transformed or destroyed domestically or by a person of another party) in excess of the amount of unexpended production allowances or unexpended Article 5 allowances held.

107. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 82, Subpart A, Paragraph 82.4(c), the permittee may not produce or (except for transshipments, heels, or used controlled substances) import methyl bromide, at any time in a control period (except for controlled substances that are transformed or destroyed), in excess of unexpended consumption allowances held.

108. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 82, Subpart A, production and consumption allowances may be adjusted by the procedures in paragraphs 82.9, 82.10, 82.11, and 82.12.

109. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 82, Subpart A, the permittee shall conform with the record keeping and reporting practices for methyl bromide as outlined in Paragraph 82.13.

110. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 82, Subpart A, all containers in which methyl bromide is stored or transported must be labeled as outlined in Paragraphs 82.106, 82.108, and 82.110.

111. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 82, Subpart A, Producer Quarterly Reports must be mailed to the Administrator within 45 days of each calendar quarter, as outlined in Paragraphs 82.13(c) and 82.13(f)(3).

Conditions for MeBr as a primary product scenario only:

112. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, the following NC-14 area sources are subject to Subparts F, G, and H (the HON rule). The permittee shall comply with all applicable requirements of the HON, including but not limited to the requirements listed in this permit.

Source	Description	HON Source Type	HON Group
SN-TB-17	Methyl Bromide Transfer Rack (vented to SN-TB-03)	Transfer Operation	Group 1
SN-TB-32	Methyl Bromide Storage Tank (vented to SN-TB-03)	Storage Vessel	Group 1
SN-TB-03	Methyl Bromide Recovery Unit	Process Vent	Group 2
SN-TB-11	Methanol Column Feed Tank	Storage Vessel	§63.149
SN-TB-30	Methanol Feed Storage Tank	Storage Vessel	Group 2
SN-TB-31	Methyl Bromide Storage Tank D-24	Storage Vessel	Group 2
SN-TB-34	Wastewater Storage T-2A	Storage Vessel	§63.149
SN-TB-35	Wastewater Storage T-102	Storage Vessel	§63.149
SN-WW-01	Methanol Recovery Column Wastewater (if discharged)	Wastewater Stream	Group 2
SN-TB-29	Fugitive Equipment Leaks	Equipment Leaks	N/A

113. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	Not used in MeBr production scenario.			

SN-#	Description	Pollutant	lb/hr	tpy
TB-03	Area Process Scrubber (Methyl Bromide Recovery Unit)	VOC	2.57	11.30
TB-04	Product Baghouse*	PM_{10}*	1.60*	7.00*
TB-08	Dust Collector Baghouse*	PM_{10}*	1.8*	7.9*
TB-11	Column Feed Tank	VOC	2.91	1.89
TB-12	Spent Sulfuric Acid Storage	VOC	0.10	0.10
TB-15	Not used in MeBr production scenario.			
TB-18	Not used in MeBr production scenario.			
TB-22	Not used in MeBr production scenario.			
TB-23	Not used in MeBr production scenario.			
TB-25	Column Vent	VOC	0.40	1.75
TB-28	Not used in MeBr production scenario.			
TB-29	NC-14 Fugitive Emissions	VOC	0.37	1.64
TB-30	Methanol Storage Tank	VOC	11.80	9.30

*SN-TB-04 and SN-TB-08 are for product packaging scenarios which may occur during MeBr production.

114. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	Not used in MeBr production scenario.			
TB-03	Area Process Scrubber (Methyl Bromide Recovery Unit)	Requirements addressed in Specific Condition 123.		

SN-#	Description	Pollutant	lb/hr	tpy
TB-04	Product Baghouse*	PM*	1.60*	7.00*
TB-08	Dust Collector Baghouse*	PM*	1.8*	7.9*
TB-11	Column Feed Tank	Methanol[HAP]	2.91	1.89
TB-12	Spent Sulfuric Acid Storage	Methanol[HAP] H_2SO_4[NCAC]	0.10 0.01	0.10 0.05
TB-14	Not used in MeBr production scenario.			
TB-15	Not used in MeBr production scenario.			
TB-18	Not used in MeBr production scenario.			
TB-22	Not used in MeBr production scenario.			
TB-23	Not used in MeBr production scenario.			
TB-25	Column Vent	Requirements addressed in Specific Condition 123.		
TB-28	Not used in MeBr production scenario.			
TB-29	NC-14 Fugitive Emissions	Methanol[HAP] Methyl Bromide[HAP]	0.37 0.37	1.64 1.64
TB-30	Methanol Storage Tank	Methanol[HAP]	11.80	9.30

*SN-TB-04 and SN-TB-08 are for product packaging scenarios which may occur during MeBr production.

General HON-related conditions (for MeBr production):

115. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.102(a), the requirements of Subparts G and H apply at all times, except during periods of startup, shutdown, malfunction, or non-operation of the unit resulting in cessation of emissions to which Subparts F and G apply.

116. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.6(e)(3), the permittee shall develop, implement, retain, and revise (as necessary) a written startup, shutdown, and malfunction (SSM) plan that describes, in detail, procedures for operating and maintaining the affected sources during SSM and a program of corrective action for malfunctioning process and air pollution control equipment used to comply with the relevant standard. **The SSM plan and any revision to the plan is incorporated by reference and is enforceable as a term and condition of this permit. Any revisions to the plan are automatically incorporated by reference and do not require a permit revision.**

117. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.152(b), the permittee shall submit a Notification of Compliance Status (NCS) within 150 calendar days after initial start-up of the methyl bromide production unit. This was satisfied by the April 2000 submission of the NCS.

118. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.152(c)(1), all required Periodic Reports shall be submitted semi-annually no later than 60 days after the end of each 6-month period. Reports shall be submitted no later than 8 months after the date the NCS is due, and shall cover the 6-month period beginning on the date the NCS is due. Subsequent reports are due every six months after the date that the first report was due as long as the MeBr unit operates in this unit.

MeBr Process Vent Conditions:

119. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.115(e), the permittee shall recalculate, as applicable, the TRE index value, flow, or organic hazardous air pollutants concentration for each Group 2 process vent whenever process changes are made that could reasonably be expected to change the vent to a Group 1 vent.

120. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.117(b), the NCS shall include documentation of all assumptions and procedures used to determine the TRE index value for the methyl bromide reactor process vent (SN-TB-03). This was satisfied by the April 2000 submission of the NCS.

121. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.117(d), the NCS shall include documentation of all assumptions and procedures used to determine Group 2 status (i.e., less than 50 ppm organic HAP) for the SN-TB-25 process vent. This was satisfied by the April 2000 submission of the NCS.

122. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart G, emissions during methyl bromide production shall not exceed the limits listed in the following table. Compliance with these emission limits shall be demonstrated by complying with monitoring, reporting, and record keeping requirements of the HON.

SN-#	Description	Pollutant	lb/hr	tpy
TB-03	Area Process Scrubber (Methyl Bromide Recovery Unit)	Methanol[HAP] Methyl Bromide[HAP]	1.03 0.94	4.51 4.12
TB-25	Column Vent	Methanol[HAP]	0.40	1.75

MeBr Storage Vessel Conditions:

123. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.112(e)(3)(ii), compliance with the Group 1 storage vessel reference control technology standard (given in 40 CFR §63.119(e)), including applicable monitoring, record keeping, and reporting, for SN-TB-32 shall be shown by compliance with the Group 1 transfer rack emission standard in 40 CFR §63.126. The methyl bromide storage tank D-26 (SN-TB-32) shall be vented to the methyl bromide recovery unit (SN-TB-03) at all times, except for the 240 hours per year downtime allowable under 40 CFR §63.119(e)(3).

124. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.123(a), the permittee shall keep readily accessible records for each Group 1 or Group 2 storage vessel showing the dimensions of the storage vessel, and an analysis showing the capacity of the storage vessel. This record shall be kept as long as the storage vessel retains Group 1 or Group 2 status and is in operation.

MeBr Transfer Operations Conditions:

125. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.126(a)(3), the methyl bromide recovery unit (SN-TB-03) shall be operated at all times when organic HAPs are vented to it. Any deviation from this Condition shall be reported in the start-up, shutdown, and malfunction reports required under 40 CFR §63.10(d)(5).

126. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.126(b), the methyl bromide recovery unit (SN-TB-03) shall reduce emissions of total organic HAPs from methyl bromide loading operations by 98 weight percent. Compliance with this condition is demonstrated by the design evaluation included in the NCS and by compliance with the following two Specific Conditions.

127. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.126(b), §63.127(e), the permittee shall maintain a liquid mass flow rate (in lb/hr) to gas mass flow rate (in lb/hr) ratio in the absorber column of the methyl bromide recovery unit (SN-TB-03) equal to or greater than 15.5.

128. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.126(b), §63.127(e), the permittee shall maintain a temperature in the methyl bromide stripper of the methyl bromide recovery unit (SN-TB-03) equal to or greater than 169.7E F as measured in the location indicated by the NCS.

129. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.126(f), (g), (h), and (i), the permittee shall comply with all applicable requirements related to methyl bromide transfer operations.

130. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.130(a), the permittee shall maintain continuous (as defined in §63.111) records of absorber liquid-to-gas ratio and stripper overhead temperature while the transfer stream is being vented to the methyl bromide recovery unit, and shall maintain records of the daily average value for each parameter for each operating day.

131. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Subpart G, the permittee shall submit Periodic Reports as specified in §63.130(d).

132. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Subpart G, the permittee shall maintain the DOT tank certification or Method 27 testing records as required by §63.130(e).

133. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Subpart G, the permittee shall annually update and maintain, in a readily accessible location on site, the transfer rack information required in 40 CFR §63.130(f).

MeBr Wastewater Conditions, if wastewater is generated (Note: If wastewater is generated, the only organic HAP it will contain above trace quantities is methanol):

134. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.146(b)(2), the permittee shall submit the SN-WW-01 information as required in Table 15 of Subpart G with the NCS.

135. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §63.147(f), the permittee shall keep readily accessible records documenting how process knowledge was used to determine the annual average organic HAP concentration and/or annual average flow rate of SN-WW-01.

MeBr Equipment Leaks

136. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR 63, Subpart H, the permittee shall comply with all applicable sections of §63.160 through §63.182.

Miscellaneous Requirements

137. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, spent sulfuric acid shall be the only material permitted for storage in the tanks which vent at SN-TB-12.

NC-15 Flame Retardant Process

Solvent (if used), bromine, raw material, and catalyst are added to the reactor. The reaction proceeds with external cooling to completion. Hydrogen bromide gas is produced and exits the reactor through a condenser. Bromine carried by the gas is returned to the reactor. The hydrogen bromide (which is not condensed) carries on to a recovery system and is recycled to another plant. Any HBr which is not recovered is neutralized in a caustic scrubber (SN-15-12).

After the reaction is complete, any excess bromine is stripped or neutralized. The stripped bromine is dried and recycled to the process in future batches. Solvent may be added to aid processing.

The stripped or neutralized product is isolated from the solvent or aqueous mixture by various means, such as centrifugation and distillation. The product is dried, ground, and packaged to specifications. If solvent was used in the process, it is recovered and recycled.

This permit modification authorizes the facility to use the tank which vents at SN-15-18 for byproduct recovery storage related to the NC-21 production area. The affected tank, T-9962, was previously dedicated to toluene storage. It will now collect and store byproduct diphenyl ethane (DPE) and heavy organics.

This modification also allows the facility the option to reroute NC-15 flame retardant product to the NC-14 process area for packaging in small sacks. The affected emission unit would be the TBBPA silo (SN-TB-04). Conditions for this scenario are included in the NC-14 section of the permit.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

138. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
15-09	Refrigerated Coolant Storage	VOC	0.03	0.13
15-12	NC-15 Area Scrubber	PM_{10} SO_2 VOC CO NO_x	1.00 0.01 2.20 0.04 0.18	4.38 0.05 9.64 0.18 0.79
15-13	Raw Material Weigh Tanks D-9965, D-9966	VOC	0.06	0.23
15-15	Fugitive Emissions	PM_{10} VOC	0.03 4.23	0.13 18.30
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM_{10}	1.10	4.80
15-17	Rail Car Vent	VOC	0.69	3.03
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	0.05	0.22

139. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
15-02	Process Scrubber	Br_2^{NCAC} HBr^{NCAC}	0.10 0.10	0.44 0.44
15-09	Refrigerated Coolant Storage	Ethylene Glycol^{HAP}	0.03	0.13
15-10	Never installed.			
15-11	Never installed.			

SN-#	Description	Pollutant	lb/hr	tpy
15-12	NC-15 Area Scrubber	PM Br_2[NCAC]	1.00 0.70	4.38 3.07
15-15	Fugitive Emissions	PM Toluene[HAP] (Br_2+HBr)[NCAC] HCFC-22[NCAC]	0.03 2.90 1.54 0.03	0.13 12.50 6.72 0.13
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM	1.10	4.80

140. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-15-02, SN-15-12, and SN-15-16.

141. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall operate a bromine monitor on SN-15-02 and SN-15-12 at all times when the units are in operation. This monitor shall be maintained and operated in accordance with the latest revised version of the "Preventative Maintenance Plan for the Emission Control Devices." Bromine emission records and a copy of the latest revised version of the Maintenance Plan shall be maintained on site and made available to Department personnel upon request. Specific Conditions 145a and 145b may take the place of this requirement.

142. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall conduct stack testing for the following compounds in calendar year 2002, and every two years thereafter. Test methods are listed in the right-hand column of the table.

Source	Compound	EPA Reference Method
SN-15-12	VOC	18 or 25A
SN-15-12	PM/PM_{10}	5

SN-15-16	PM/PM_{10}	5

143. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct stack testing for bromine at SN-15-12 in calendar year 2002, and every five years thereafter. The testing shall be conducted using EPA Reference Method 26A.

Source	Compound	EPA Reference Method
SN-15-12	Br_2^{NCAC}	26A

Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

144. Reserved.

145. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall maintain weekly production records of DPE product generated in the NC-21 production unit. A factor of 0.222 lb heavy ends byproduct per lb DPE product shall be applied to the recorded DPE product value. The source SN-15-18 shall be deemed in compliance whenever the resulting calculated byproduct flow does not exceed 44,000 lbs/week. The records (including byproduct calculation) shall be kept on site and made available to Department personnel upon request.

Alternate Scenario - Compliance with Bromine emission limits during loss of Bromine Monitor

The following two conditions may be implemented instead of Specific Condition 141.

145a. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall perform a visual inspection to confirm pump activity of the pumps driving the scrubber media at SN-15-02 and SN-15-12 every three hours, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on site and made available to Department personnel upon request.

145b. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, at SN-15-02 the permittee shall measure and record the caustic concentration of the scrubber media used at least once per twelve-hour shift. The caustic shall be replaced when the concentration falls below 5% strength.

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NC-17 Flame Retardant Process

Tetrabromophthalic anhydryde (TBPA), ethylene-bis-tetrabromophthalimide (EBTBP), and a purified (higher grade) of EBTBP are made at the South Plant in what is known as the NC-17 Production Unit (formerly NC-16).

TBPA and EBTBP are marketed and sold as flame retardants. Additionally, TBPA is used as a raw material in the production of EBTBP. Under this permit, the permittee may produce products either separately or simultaneously.

This permitting action allows the West Plant product HP-7010 to be reworked, granulated, and packaged in the NC-17 process area of the South Plant. Existing equipment will be used to control associated emissions: the Weigh Hopper Filter (SN-16-27) and the Product Transfer and Storage Filter (SN-16-26).

Tetrabromophthalic Anhydryde (TBPA)

Tetrabromophthalic anhydride is produced in a batch reaction process by brominating phthalic anydride in the presence of sulfuric acid and sulfur trioxide. The final product, a solid, is centrifuged, dried, and packaged for shipment or transported for production of EBTBP. Dust generated by these operations is controlled by fabric filters (SN-16-10, SN-16-11, and SN-16-29). Vapors generated are controlled by scrubbers (SN-16-01, SN-16-02, SN-16-13, and SN-16-24). Molten phthalic anhydride is stored in the Molten PA Storage Tank (SN-16-31).

Ethylene-bis-tetrabromophthalimide (EBTBP)

EBTBP and its higher grade equivalent are produced by reacting tetrabromophthalic anhydride with ethylene diamine in the presence of an acid. This reaction forms a solid complex, which is separated from the liquid, washed, and then dried. Emissions generated by the EBTBP process are controlled by scrubbers (SN-16-05, SN-16-06, and SN-16-25), by baghouses (SN-16-07, SN-16-08, SN-16-09, SN-16-12, SN-16-25, SN-16-26, and SN-16-27), or by carbon drums (SN-16-14 and SN-16-15). The higher grade EBTBP process is equipped with a vent gas oxidizer (SN-16-18) and a solvent recovery unit to control VOC emissions, and with three baghouses to control particulates (SN-16-19, SN-16-11, SN-16-22).

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

146. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
16-01	TBPA Production: Packed Scrubber	SO_X PM_{10}	0.50 0.10	2.19 0.44
16-02	TBPA Production: Off Gas Scrubber	SO_X VOC	0.40 0.10	1.75 0.44
16-05	EBTBP Production: Packed Scrubber	VOC	0.10	0.44
16-06	EBTBP Production: Converter Scrubber	VOC PM_{10}	0.10 0.40	0.44 1.75
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM_{10}	0.30	1.32
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM_{10}	0.30	1.32
16-10	Product Transfer and Storage Fabric Filter	PM_{10} SO_X	0.50 0.07	2.19 0.31
16-11	TBPA Production: Packaging Filter	PM_{10}	0.07	0.31
16-12	TBPA Weigh Hopper Weigh Hopper Filter	PM_{10}	0.10	0.44
16-13	TBPA Production: Vacuum Pump	SO_X	0.10	0.44

SN-#	Description	Pollutant	lb/hr	tpy
16-14	Ethylene Diamine Storage Tank	VOC	0.01	0.04
16-15	Propionic Acid Storage Tank	VOC	0.01	0.04
16-16	TBPA Neutralization Tank	SO_X	0.10	0.44
16-17	Ethylene Glycol Tank	VOC	0.02	0.09
16-18	Vent Gas Oxidizer	PM_{10} SO_X VOC CO NO_x	0.04 0.07 0.66 0.47 0.64	0.18 0.31 2.89 2.06 2.80
16-19	Charge Hopper Vent	PM_{10} SO_X	0.30 0.10	1.32 0.44
16-20	Heat Exchange Heater	PM_{10} SO_X VOC CO NO_x	0.03 0.06 0.13 0.19 0.50	0.13 0.27 0.57 0.83 2.18
16-21	Product Storage Hopper	PM_{10} VOC	0.20 0.40	0.88 1.76
16-22	By-Product Powder Packaging	PM_{10} VOC	0.01 0.01	0.04 0.04
16-23	NC-16 Operation: Fugitive Emissions	PM_{10} SO_X VOC	0.32 1.02 6.60	1.40 4.47 28.53
16-24	Raw Material Unloading, Brinks (Limited Hours of Operation)	SO_X	1.80	1.58
16-25	Wet Scrubber	PM_{10} VOC	0.40 1.02	1.75 3.46
16-26	EBTBP or TBBPA Rework	PM_{10}	0.30	1.32

SN-#	Description	Pollutant	lb/hr	tpy
	Transfer and Storage Filter			
16-27	Reactor Weigh Hopper Filter	PM_{10}	0.30	1.32
16-28	TBPA Neutralization Tank	SO_X	0.10	0.44
16-31	Molten Phthalic Anhydride Storage Tank	VOC	3.83	0.80

147. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
16-01	TBPA Production: Packed Scrubber	PM Phthalic Anhydride[HAP]	0.10 0.10	0.44 0.44
16-02	TBPA Production: Off Gas Scrubber	Phthalic Anhydride[HAP] Br_2[NCAC]	0.10 0.10	0.44 0.44
16-06	EBTBP Production: Converter Scrubber	PM	0.40	1.75
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM	0.30	1.32
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM	0.30	1.32
16-10	Product Transfer and Storage Fabric Filter	PM	0.50	2.19
16-11	TBPA Production: Packaging	PM	0.07	0.31

SN-#	Description	Pollutant	lb/hr	tpy
	Filter			
16-12	TBPA Weigh Hopper Weigh Hopper Filter	PM	0.10	0.44
16-17	Ethylene Glycol Tank	Ethylene Glycol[HAP]	0.02	0.09
16-18	Vent Gas Oxidizer	PM (Xylene + Ethyl Benzene) [HAP]	0.04 0.52	0.18 2.28
16-19	Charge Hopper Vent	PM	0.30	1.32
16-20	Heat Exchange Heater	PM	0.03	0.13
16-21	Product Storage Hopper	PM (Xylene + Ethyl Benzene) [HAP]	0.20 0.28	0.88 1.23
16-22	By-Product Powder Packaging	(Xylene + Ethyl Benzene) [HAP]	0.01	0.04
16-23	NC-16 Operation: Fugitive Emissions	PM (Xylene + Ethyl Benzene) [HAP] Ethylene Glycol[HAP] Br_2[NCAC]	0.32 2.70 0.41 0.34	1.40 11.80 1.80 1.49
16-25	Wet Scrubber	PM	0.40	1.75
16-26	EBTBP or TBBPA Rework Transfer and Storage Filter	PM	0.30	1.32
16-27	Reactor Weigh Hopper Filter	PM	0.30	1.32
16-31	Molten Phthalic Anhydride Storage Tank	Phthalic Anhydride	3.83	0.80

148. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-16-01, SN-16-02, SN-16-06 through SN-16-08, SN-16-10 through SN-16-12, SN-16-18 through SN-16-21, SN-16-22, SN-16-25 through SN-16-27, and SN-16-29.

149. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall monitor the scrubber fluid flow of the following sources on a three-hour basis. The recorded flow rates shall be made accessible for Department inspection upon request.

Source	Minimum Scrubbing Fluid Flow (gpm)
SN-16-01	6
SN-16-02	60
SN-16-05	4
SN-16-06	6
SN-16-13	4
SN-16-24	6 (water)
SN-16-25	25

150. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall replace the carbon canisters at SN-16-14, SN-16-15, and SN-16-22 at least once per year. A log of replacement dates (or notation on the drum) shall be maintained on site and made available to Department personnel upon request.

151. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall measure and record the pH of the scrubber media used for SN-16-01, SN-16-02, SN-16-05, SN-16-06, and SN-16-25 every three hours. The caustic pH records shall be kept on site and made available to Department personnel upon request. The caustic pH corresponding to the most

recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed.

152. Reserved.

153. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, SN-16-24 shall be limited to 1752 hours of operation per year. The permittee shall maintain accessible records of operating hours at the source, to be updated per event of operation.

154. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, only one of the sources SN-16-19 and SN-16-29 shall be operated at any given time.

155. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the combustion zone temperature of the Vent Gas Oxidizer, SN-16-18, shall be maintained at a minimum of 1000^{o} F. Compliance with this condition shall be facilitated by maintaining a log of automatic shutdowns by the temperature interlock (block valve) system. Each log entry shall include an operator's statement reporting whether the interlock system performed as designed. Additionally, the permittee shall review the logs each six months and certify that the interlock has functioned correctly during that period. The running logs and 6-month certification shall be kept on site and made available to Department personnel upon request.

156. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart G (see Appendix A), the permittee shall maintain readily accessible records of the dimensions and capacity of the phthalic anydride storage vessel, as required by §63.123(a).

157. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart H (see Appendix A), all equipment in phthalic anydride service must comply with the protocol for equipment leaks as outlined in Section 63.169(a) through (d). (This regulation outlines monitoring and maintenance standards for pumps, valves, connectors, and agitators in heavy liquid service; for instrumentation systems; and for pressure relief devices in liquid service).

158. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall calculate emissions from SN-16-16 every 12 months. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on site and made available to Department personnel upon request.

159. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall calculate VOC emissions from SN-16-21 every 12 months. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on site and made available to Department personnel upon request.

160. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall conduct stack testing for SO_X at SN-16-01 in 2002, at SN-16-02 in 2003, and SN-16-24 in the first calendar year it operates more than 25% per Plantwide Condition 18. A proposed test method shall be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. The method must receive Department approval prior to the testing event.

161. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct stack testing for Br_2 at SN-16-02 in calendar year 2002 and every five years thereafter. Testing shall be performed using EPA Reference Method 26A. Alternative test methods may be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. These methods must receive Department approval prior to the testing event.

162. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, §18.10 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct stack testing at SN-16-25 for VOC according to the following parameters:

Pollutant	EPA Reference Method	Schedule

VOC	25A	Within the calendar year it operates >25% of the time, and bi-annually thereafter.

163. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall unload the HP-7010 super sacks and operate the granulating and packaging procedures only when the pneumatic dust control systems are activated (the systems venting at the SN-16-27 and SN-16-26 filters).

164. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not operate the ethylene bis tetrabromopthalimide process while HP-7010 is being granulated and packaged.

164a. Pursuant to §19.705, A.C.A., and 40 CFR 70.6, the permittee shall not exceed a throughput of 18.25 million pounds per twelve consecutive months at PA Tank (T-9340) (SN-16-31).

164b. Pursuant to §19.705 and Part 52, the permittee shall maintain monthly records demonstrating compliance with Condition 164a. Records shall be updated by the 15th day following the month to which the records pertain, made available to Department personal upon request, and submitted in accordance with General Provision 7.

Boilers
(SN-BH-01, SN-BH-02, SN-BH-03)

There are two boilers at the Albemarle South facility. Each boiler has the capacity to produce 200,000 pounds of 225 psig steam per hour. This is equivalent to a heat input of 340 million BTU per hour. The boilers burn natural gas, which has been treated either in the sulfinol or the MDEA plants. They may also burn pipeline quality natural gas. They are not permitted to burn any other fuel.

Emissions generated by the two boilers are permitted under a single bubble. Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

165. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
BH-01	#1 Boiler	PM_{10} SO_2 VOC CO NO_x	1.70 2.80 0.95 13.60 47.60	14.90 24.53 8.40 119.20 417.00
BH-02	#2 Boiler	PM_{10} SO_2 VOC CO NO_x	1.70 2.80 0.95 13.60 47.60	Combined emission bubble.

166. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
BH-01	#1 Boiler	PM	1.70	14.90
BH-02	#2 Boiler	PM	1.70	Combined emission bubble.

167. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-BH-01 and SN-BH-02.

168. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the permittee may only burn the following fuels in the boilers: pipeline quality natural gas and process gas that has been treated by the sulfinol and MDEA plants.

169. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall monitor and record the H_2S concentration and the combined gas flow to the boilers at least once every six hours. The measured concentration shall be used to determine the mass emission rate of SO_2 from the boilers assuming a 1:1 molar ratio of sulfur conversion at the boilers. A rolling 30-day average H_2S concentration may be used to calculate the lb/hr emissions for compliance demonstration with the 5.60 lb/hr emission limit of Specific Condition 165. A rolling 12-month total shall be used to calculate tpy for compliance demonstration with the combined 24.53 ton/yr value of Specific Condition 165. A shorter averaging period may be used in lieu of the rolling 30-day average (e.g., if all three-hour rolling averages as currently calculated are below the emission limit, a rolling 30-day average is not required).

All records shall be updated by the 15th day following the month to which the records pertain. Records shall be kept on-site, made available Department personnel, and otherwise kept in accordance with General Provision 7.

170. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall perform stack testing on SN-BH-01 and SN-BH-02 in 2005 and every five years thereafter. The testing shall be performed while each boiler is operating within 10% of its design capacity. Hourly test results shall be combined for each pollutant to determine compliance with the emission bubble. Compounds and applicable test methods are listed below.

Source	Compound	EPA Reference Method
SN-BH-01, SN-BH-02	SO_2*	6C
SN-BH-01, SN-BH-02	VOC	18 or 25A
SN-BH-01, SN-BH-02	CO	10B
SN-BH-01, SN-BH-02	NO_X	7E

*If sulfur dioxide testing is performed during combustion of sweetened gas, 5.6 lb/hr shall be the maximum compliant value for each boiler, instead of 2.8. However, 5.6 lb/hr is also the maximum compliant value for simultaneous emissions from both boilers.

NC-21 Flame Retardant Process

Benzene, 1,2-dichloroethane, and catalyst are added to the reactor. The reaction proceeds, with external heating to completion. Hydrogen chloride gas is produced, and exits the reactor. Hydrogen chloride is neutralized in a caustic scrubber which in turn vents through the incinerator (SN-21-01). Benzene emissions are minimized by vent gas condensers. The condensed gas outlet is routed to the incinerator.

After the reaction is complete, the reaction mass is neutralized. The product is isolated by distillation, and any excess benzene is recovered and recycled. The isolated product is stored in a liquid state, and used for internal and external markets.

All tank vents are routed to the incinerator. All storage vessels are operated under pressure, to minimize emissions. Tank truck loading and unloading operations are performed using closed domes.

Compliance with permitted emission rates shall be demonstrated through parametric monitoring and record keeping requirements.

Specific Conditions

171. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
21-01	Emission Control: Vent Gas Incinerator (FL-3671) (CD-21-01)	PM_{10}	0.10	0.44
		SO_X	0.01	0.04
		VOC	0.26	1.14
		CO	3.80	16.60
		NO_x	0.50	2.20
21-02	NC-21 Fugitive Emissions	VOC	3.50	15.30
21-03	Wastewater Effluent	VOC	0.01	0.01

172. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
21-01	Emission Control: Vent Gas Incinerator (FL-3671) (CD-21-01)	PM Benzene[HAP] HCl[HAP]	0.10 0.26 0.30	0.44 1.14 1.31
21-02	NC-21 Fugitive Emissions	Benzene[HAP] HCl[HAP] Ethylene Dichloride[HAP]	0.69 0.05 0.09	3.02 0.22 0.40
21-03	Wastewater Effluent	Benzene[HAP]	0.01	0.01

173. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-21-01.

174. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 61 Subpart J (see Appendix A), the permittee is subject to all applicable provisions of the National Emission Standard for Equipment Leaks (Fugitive Emission Sources) of Benzene.

175. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 61 Subpart V (see Appendix A), the permittee is subject to all applicable provisions of the National Emission Standard for Equipment Leaks (Fugitive Emission Sources). This includes, but is not limited to, the reporting requirements of §61.247 and the performance standards contained in §61.242.

176. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 61 Subpart FF (see Appendix A), the permittee is subject to all applicable provisions of the National Emission Standard for Benzene Waste Operations. Because current annual benzene waste quantity for the facility is between 1 Mg and 10 Mg per year, the facility is only subject to the record

keeping requirements of 61.356(b) and the reporting requirements of 61.357(c). If the total annual benzene waste quantity becomes equal to or greater than 10 Mg/yr, 61.342(c) will become applicable to this process unit.

177. Pursuant to §18.1003 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall operate a system capable of monitoring and recording the flow rate of process gases to the Vent Gas Incinerator, and the temperature of its combustion zone. The system will also be capable of continuously converting the temperature and flow rates into calculated residence time to demonstrate compliance with 40 CFR Part 61 Subpart V, 61.242-11(c). A Preventive Maintenance Plan describing the methods used to monitor and control calibration drift and zero drift of components in the monitor system will be kept current and available on site for inspection.

178. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall calculate all emissions from the Vent Gas Incinerator (SN-21-01) on a semi-annual basis. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on site and made available to Department personnel upon request.

179. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 61 Subpart V, 61.242-11(c), the vent gas incinerator must provide a minimum residence time of 0.5 seconds when vent streams are being routed to the incinerator. The monitoring data required by the above condition, in conjunction with design data, shall be used to calculate residence time on a continuous basis.

180. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall calculate benzene emissions from the wastewater effluent once per year. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month rolling period or assumed continuous usage. A copy of the calculations shall be kept on site and made available to Department personnel upon request.

NC-22 Production

Bromine and polystyrene are reacted in bromochloromethane (BCM) solvent in the presence of a catalyst to form brominated polystyrene. The byproduct HBr vapor is absorbed in water and recycled at the South Plant.

Polystyrene pellets and BCM solvent are unloaded from tank trucks, while the catalyst is managed in bags. Organic vapors from the process and storage areas are vented through a common header to a carbon bed adsorbtion system (SN-22-08).

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

181. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
22-01	Polystyrene Baghouse	PM_{10}	0.40	1.75
22-02	Slurry Tank	VOC	0.10	0.44
22-03	Dryer Baghouse	PM_{10}	0.30	1.31
22-04	Product Baghouse	PM_{10} VOC	0.05 0.10	0.22 0.44
22-05	Dust Baghouse	PM_{10}	2.00	8.76
22-06	Extraneous Water Tank	VOC	0.10	0.44
22-07	Ethylene Glycol Storage Tank	VOC	0.01	0.05
22-08	Carbon Adsorber Unit	VOC	1.00	4.40

SN-#	Description	Pollutant	lb/hr	tpy
22-09	Scrubber Tank	VOC	0.04	0.18
22-13	Fugitive Emissions	VOC	0.78	3.41

182. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
22-01	Polystyrene Baghouse	PM	0.80	3.50
22-03	Dryer Baghouse	PM	0.38	1.66
22-04	Product Baghouse	PM	0.05	0.22
22-05	Dust Baghouse	PM	2.50	10.95
22-07	Ethylene Glycol Storage Tank	Ethylene Glycol[HAP]	0.01	0.05
22-09	Scrubber Tank	HBr[NCAC]	0.10	0.44
22-11	HBr Storage Tank	HBr[NCAC]	0.09	0.39
22-12	HBr Storage Tank	HBr[NCAC]	0.09	0.39
22-13	Fugitive Emissions	HBr[NCAC] Bromine[NCAC] Ethylene Glycol[HAP]	0.34 0.10 0.01	1.50 0.42 0.05

183. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-22-01, 22-03, 22-04, 22-05, 22-09, 22-11, and 22-12.

184. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall conduct

stack testing for VOC at SN-22-08 within 180 days of permit issuance, and every five years thereafter. Testing shall be conducted using EPA Reference Method 18, and shall be coordinated in advance with the Compliance Inspector Supervisor.

185. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall install and operate a temperature monitoring device at the exit vent of the active cell of the carbon adsorption unit (SN-22-08). The monitor shall sample no less than once per operational hour, and shall be operated, calibrated, and maintained according to manufacturer's specification. A maximum exit gas temperature of 175^{o}F shall be maintained from the active cell when emissions are routed to the carbon adsorption unit.

186. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall maintain an automated carbon regeneration system at SN-22-08 capable of completing a minimum of 8 regeneration cycles per day. This minimum regeneration rate shall be sustained at all times during operation of the NC-22 process. The regeneration system shall be inspected no less than once per week, to ensure that the regeneration rate is being met and that operation complies with manufacturer's specification. Records of each inspection shall be maintained, kept on site, and made available to Department personnel upon request.

NC-23 Production

Raw materials are received in the NC-23 process area via truck or railcar, and are stored in tanks, silos, or warehouses (packaged raw materials). VOC emissions from tanks are vented through a common header to a water scrubber designated as SN-23-03.

Tetrabromobisphenol-A (TBBPA) is produced by reacting bisphenol-A (BPA) with bromine in an ethanol solvent. TBBPA is used as a flame retardant. A liquid byproduct of this reaction is ethyl bromide (bromoethane).

Ethanol is recovered from the ethyl bromide and stored in tanks. The vapors are controlled by a recovery system, consisting of condensers, absorbers, and separators. TBBPA is a solid product. Dust generated by the handling and packaging of TBBPA is controlled by fabric filters. Unreacted solvent ethanol is reclaimed and returned to the process origin as a raw material. Brines containing high concentrations of bromides are generated and recycled to produce bromine (raw material). A byproduct stream consisting of TBBPA, underbrominated TBBPA, isomers, and degradation products is also produced. Caustic is added to the process recycle stream to prevent corrosion.
Silo emission bubble. SN-23-06, SN-23-07, and SN-23-08 are source numbers assigned to three silo processes. Each silo vents to two identical fabric filter baghouses. This permit allows the facility to operate any of three silos at any given time. Fresh production can only be received by one silo at any given time.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

187. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitive Emissions	VOC	1.12	4.91
23-02	Raw Material Unloading Baghouse	PM_{10}	0.10	0.44
23-03	Raw Material Scrubber	VOC	0.35	1.53
23-04	By-product Loading	VOC	0.44	1.93
23-05	Vent Absorber	VOC	2.9	12.7
23-06	Receiving Silo Baghouse			
23-07	Blending Silo Baghouse			
23-08	Discharging Silo Baghouse (emission bubble)	PM_{10} VOC	0.30 3.80	1.32 16.60
23-09	Product Packaging Baghouse	PM_{10}	0.10	0.44
23-10	Product Packaging Dust Collection	PM_{10}	0.10	0.44
23-11A	Product Loading Baghouse			
23-11B	Product Loading (Railcar)	PM_{10}	0.10	0.44
23-12A	Product Loading Baghouse			
23-12B	Product Loading (Truck)	PM_{10}	0.10	0.44
23-13	Floor Vacuum Baghouse	PM_{10}	0.10	0.44
23-14	Solvent Tote Bin	VOC	40.8	1.53

188. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitive Emissions	Br_2 [NCAC] HBr [NCAC]	0.22 0.11	0.97 0.49
23-02	Raw Material Unloading Baghouse	PM	0.20	0.88
23-03	Raw Material Scrubber	HBr [NCAC]	0.35	1.5
23-05	Vent Absorber	Phenol Bromoform [HAP] Acetaldehyde [HAP]	0.10 0.43 0.10	0.44 1.89 0.44
23-06 23-07 23-08	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM HBr [NCAC] Acetaldehyde [HAP]	0.60 0.22 0.10	2.64 0.96 0.44
23-09	Product Packaging Baghouse	PM HBr [NCAC]	0.20 0.01	0.88 0.01
23-10	Product Packaging Dust Collection	PM	0.20	0.88
23-11A	Product Loading Baghouse			
23-11B	Product Loading (Railcar)	PM	0.20	0.88
23-12A	Product Loading Baghouse			
23-12B	Product Loading (Truck)	PM	0.20	0.88
23-13	Floor Vacuum Baghouse	PM	0.20	0.88

SN-#	Description	Pollutant	lb/hr	tpy
23-15	Phenol Storage Tank (6,500 gal)	Emissions routed to SN-23-05		

189. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-23-02, SN-23-06 through SN-23-13 (Each "A" and "B" vent at SN-23-11 and SN-23-12 shall be considered separately).

190. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the permittee shall be allowed to conduct receiving, blending, or discharge for packaging at any of the three silos associated with source numbers SN-23-06, SN-23-07, and SN-23-08 at any given time.

191. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall operate a continuous flow monitor alarm at
SN-23-03 (Raw Material Scrubber). A record of the minimum flow setpoint value for the scrubber shall be maintained. The permittee shall also keep a log of all alarm incidents and subsequent corrective action. These records shall be maintained on site and made available to Department personnel upon request. The flow rate history and alarm monitoring shall be confirmed by the most recent satisfactory test for purposes of continuous compliance until the next test is performed.

192. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall operate a continuous flow monitor alarm at
SN-23-05 (Vent Absorber (scrubber)). A record of the minimum flow setpoint value for the scrubber shall be maintained. The permittee shall also keep a log of all alarm incidents and subsequent corrective action. These records shall be maintained on site and made available to Department personnel upon request. The flow rate history and alarm monitoring shall be confirmed by the most recent satisfactory test for purposes of continuous compliance until the next test is performed.

193. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the permittee shall be limited to 96 total fills per day for the drums venting at SN-23-04.

194. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall maintain daily records of drum fills at SN-23-04 in order to demonstrate compliance with the previous condition.

195. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall conduct stack testing for VOC at SN-23-03, SN-23-05, and either SN-23-06, SN-23-07, or SN-23-08 (whichever process silo is in receiving mode) in 2005 and every five years thereafter. Testing shall be conducted using EPA Reference Method 18, and shall be coordinated in advance with the Compliance Inspector Supervisor.

196. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct stack testing for HBr at source SN-23-06, SN-23-07, or SN-23-08 (whichever process silo is in receiving mode) in 2005 and every five years thereafter. Testing shall be conducted using EPA Reference Method 26A, and shall be coordinated in advance with the Compliance Inspector Supervisor.

196a. Pursuant to §19.705, A.C.A., and 40 CFR 70.6, the permittee shall limit operation at the Solvent Tote Bin (SN-23-14) to 75 cleaning cycles per twelve consecutive months. As an alternative, the permittee may exceed 75 cycles per twelve months provided the permittee shows compliance with Specific Condition 187 VOC emission rates through calculations. Compliance shall be demonstrated by Specific Condition 196b.

196b. Pursuant to §19.705 and Part 52, the permittee shall keep monthly records of the number of cleaning cycles per month at the solvent tote bin (SN-23-14) along with a twelve month rolling total.

If 75 cycles per twelve months is exceeded the permittee shall demonstrate compliance with Specific Condition 187 through VOC calculations kept on-site. Calculations

shall be based on actual solvent vapor pressure at actual temperatures during each operation of the source. Heating and recirculation emissions shall be calculated using the ideal gas law and principles of partial pressures at actual process parameters.

All records shall be updated by the 15th day following the month to which the records pertain. Records shall be kept on-site, made available Department personnel, and otherwise kept in accordance with General Provision 7.

Brine Management Process

The feed brine production system produces salt water from the Smackover Lime formation and pumps it to the plant, where the hydrogen sulfide and oil are removed. Brine is also purchased and is pumped to the plant where the hydrogen sulfide and oil are removed.

The feed brine system's main components are two above-ground fiberglass tanks. The bromine in the feed brine is removed in the bromine plant, and the debrominated brine becomes tail brine. The tail brine is neutralized in the neutralization tank, cooled by evaporative cooling in the cooling towers (SN-BT-21), and transferred into the fiberglass tail brine tank. From the tail brine tank, it is pumped through a system of pipelines and injected back into the Smackover Lime formation through the tail brine injection (recycle brine) system. The natural clay-lined tail brine ponds will continue to be used until the tail brine tank system operation has been proven.

Emissions from this process area have been calculated based upon maximum brine pump rates of system components. Compliance with permitted emission rates shall be demonstrated through process throughput restrictions and record keeping requirements.

Specific Conditions

197. Pursuant to §19.501 et seq. of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
BT-01	Feed Brine Oil Separator/Surge	VOC	0.01	0.05

SN-#	Description	Pollutant	lb/hr	tpy
	Tank (V-3011)			
BT-11	Neutralization Tank (T-3110)	VOC	0.01	0.05
BT-12	Tail Brine Line Vent	VOC	0.01	0.05
BT-13	Tail Brine Tank (T-3101)	VOC	0.01	0.05
BT-16	Brinefield Oil/Water Separator (T-7001)	VOC	30.00	1.80
BT-17	Brinefield Oil Storage Tank (T-7002)	VOC	16.00	1.70
BT-21	Four Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122, Y-3123)	PM_{10} VOC	4.12 3.37	18.09 14.72
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	VOC	0.02	0.09
BT-23	Line Vent	VOC	0.01	0.05
BT-24	Line Vent	VOC	0.01	0.05

198. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
BT-01	Feed Brine Oil Separator/Surge Tank (V-3011)	H_2S^{NCAC}	0.14	0.61
BT-11	Neutralization Tank (T-3110)	H_2S^{NCAC} NH_3^{NCAC} Cl_2^{HAP}, or	0.01 0.20	0.05 0.90

SN-#	Description	Pollutant	lb/hr	tpy
		Halogens	0.03	0.13
BT-12	Tail Brine Line Vent	NH_3^{NCAC} Cl_2^{HAP}, or Halogens	0.01 0.01	0.05 0.05
BT-13	Tail Brine Tank (T-3101)	H_2S^{NCAC} NH_3^{NCAC} Cl_2^{HAP}, or Halogens	0.01 0.02 0.01	0.05 0.09 0.05
BT-16	Brinefield Oil/Water Separator (T-7001)	H_2S^{NCAC}	0.01	0.05
BT-17	Brinefield Oil Storage Tank (T-7002)	H_2S^{NCAC}	0.01	0.05
BT-21	Four Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122, 6-3123)	PM NH_3^{NCAC} Cl_2^{HAP}, or Halogens	4.12 10.23 2.89	18.09 44.77 12.60
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	H_2S^{NCAC} NH_3^{NCAC} Cl_2^{HAP}, or Halogens	0.02 0.02 0.02	0.09 0.09 0.09
BT-23	Line Vent	NH_3^{NCAC} Cl_2^{HAP}, or Halogens	0.01 0.01	0.05 0.05
BT-24	Line Vent	NH_3^{NCAC} Cl_2^{HAP}, or Halogens	0.01 0.01	0.05 0.05

199. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-BT-11, SN-BT-12, SN-BT-13, and SN-BT-21.

200. Pursuant to §19.705 et seq. of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the rate of feed brine to be processed at SN-BT-01 shall be limited to 10,200 gallons of brine per minute.

201. Pursuant to §19.705 et seq. of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the rate of tail brine to be processed through the tail brine tank (BT-13) and the cooling towers (SN-BT-21) shall be limited to 10,600 gallons per minute, each.

202. Pursuant to §19.705 et seq. of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the annual throughput of petroleum liquids through the brinefield oil/water separator (SN-BT-16) and brinefield oil storage tank (SN-BT-17) shall not exceed 250,000 gallons per year per source, on a 12-month rolling total.

203. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall keep readily accessible records on site which document the maximum design capacities of SN-BT-01, SN-BT-13, SN-BT-16, SN-BT-17, and SN-BT-21.

204. Pursuant to §18.1004 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall keep readily accessible records on site which demonstrate compliance with annual throughput limits at SN-BT-16 and SN-BT-17.

Di-(methyl-thio)-toluene-diamine (DMTDA)

Toluene diamine (TDA) and methyl mercaptan (MeSH) are unloaded from tank cars, while chaser, solvent dimethyl formamide (DMF), and hydrogen peroxide (H_2O_2) are unloaded from tank trucks. Catalyst and product stabilizer are received in bags.

TDA and dimethyl disulfide (DMDS) are reacted with the catalyst to form di-(methyl-thio)-toluene-diamine. MeSH, a reaction byproduct, is combined with purchased MeSH and reacted with H_2O_2 to form DMDS, which can by recycled, disposed, or sold as product.

All vapors emitted from the process and storage areas are vented through a common header to a new thermal oxidizer (SN-DM-02). Insignificant amounts of particulate matter are emitted from the catalyst box and the product stabilizer hopper.

Compliance with permitted emission rates shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

205. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
DM-01	Ethylene Glycol Tank	VOC	0.03	0.11
DM-02	Thermal Oxidizer	PM_{10}	0.20	0.88
		SO_2	4.00	17.50
		VOC	0.10	0.44
		CO	0.03	0.13
		NO_X	0.31	1.40
DM-07	Fugitive Emissions	VOC	3.18	13.95

206. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
DM-01	Ethylene Glycol Tank	Ethylene Glycol[HAP]	0.03	0.11
DM-02	Thermal Oxidizer	PM_{10}	0.20	0.88
DM-03	Hydrogen Peroxide Tank I	H_2O_2[NCAC]	0.81	3.55
DM-06	Hydrogen Peroxide Tank II	H_2O_2[NCAC]	0.81	3.55
DM-07	Fugitive Emissions	Toluene Diamine[HAP] Dimethyl Formamide[HAP] Ethylene Glycol[HAP] H_2O_2[NCAC]	0.08 0.09 0.41 0.49	0.35 0.39 1.80 2.20

207. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the following sources shall not exceed 5% opacity: SN-DM-02.

208. Pursuant to §19.703 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the combustion zone temperature of the Thermal Oxidizer (SN-DM-02) shall be maintained at a minimum of 1200°F. A temperature monitoring device operated in accordance with the manufacturer's specifications and recommendations for use shall be the compliance mechanism for this condition.

209. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall record the combustion zone temperature of SN-DM-02 at least once per 24 hours of operation. The record shall be kept on site and made available to Department personnel upon request.

210. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall conduct

stack testing on SN-DM-02 for the following compounds, using the test methods indicated.

Pollutant	EPA Reference Method
PM_{10}	5
SO_2	6C
VOC	18
CO	10B
NO_X	7E

The testing shall be conducted in 2005 and every five years thereafter, except for SO2 testing, which shall be performed in 2002 and every two years thereafter. All particulate measured shall be assumed to be PM_{10}.

Maintenance and Support Facilities

Extraneous Water System

Process water from all plant operating units is routed to the Extraneous Water Treatment System prior to underground injection in three on-site Class I injection wells. This process water is collected in small unit sumps. Approximately 90% of the water is pumped from these unit sumps into the ADMA collection sump. From this sump, the water can be pumped to either extraneous water storage tanks, T-1305 or T-1300, or to the Extraneous Water Overflow Tank.

The Extraneous Water Overflow Tank is only used during excessive rainfall periods; it is normally empty. Normally, the flow is routed to T-1305, the small extraneous water storage tank. From there the water flows through the large extraneous water storage tank. Solids from these two tanks are sent to the drying bed for dewatering prior to disposal in Solid Waste Vault-2, (SWV-2). The water from the tanks continues on to the clarifier and three filter presses for further solids removal. The solids from the filter presses go directly to SWV-2. The water flows through the injection tank and a cartridge polishing filter prior to injection in one of three on-site Class-I injection wells.

The Extraneous Water Treatment System is being permitted under one emission bubble. Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

211. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-01	Extraneous Water System	VOC	3.00	13.14

212. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall calculate annual emissions from the Extraneous Water System every six months. These calculations shall be kept on site and made available to Department personnel upon request.

Drying Bed

Solids from the Extraneous Water storage tanks and unit sumps are deposited on the Drying Bed for dewatering prior to disposal in the Solid Waste Vault #2. The water drained from the solids is pumped on level control back to the Extraneous Water storage tanks. The Drying Bed is approximately 100 ft by 300 ft in size.

Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

213. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-02	Drying Bed	VOC	0.10	0.44

214. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, records of solids transferred from the drying bed (SN-MS-02) to the landfill (SN-MS-06) shall be maintained and updated on a monthly basis. These records shall be kept on site and made available to Department personnel upon request.

215. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall calculate annual emissions from the Drying Bed every six months. These calculations shall be kept on site and made available to Department personnel upon request.

French Drain Sumps

Albemarle Corporation operates a system of sumps at the Magnolia South Plant to collect contaminated groundwater at the plant site. The constituent concentration and pump rates of these sumps vary with hydrology. The recovered groundwater is recycled to the Bromine Process for bromide ion recovery through a process tank. These seven sumps are being permitted as a bubble. This tank is an insignificant source in the Bromine Process.

Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

216. Pursuant to §19.501 et seq. of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52, Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-03	French Drain Sump Bubble	VOC	0.30	1.32

217. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-03	French Drain Sump Bubble	Br_2^{NCAC}	2.70	11.83

218. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, records of water quantity recovered from the sumps (SN-MS-03) shall be maintained on site, updated monthly, and made available to Department personnel upon request. Recovered water shall be limited to 82.0 million gallons per year from all sumps in the aggregate.

219. Reserved.

220. Reserved.

221. Reserved.

222. Reserved.

223. Reserved.

Carpenter's Shop

Albemarle Corporation operates an on-site carpenter's shop which makes shelves, cabinets, decks, and any other wood forms necessary to support the chemical manufacturing process operations at the facility.

This operation is subject to all applicable requirements of 40 CFR Part 63, Subpart JJ, National Emission Standards for Wood Furniture Manufacturing Operations.

Compliance with permitted emission rates shall be demonstrated through record keeping requirements.

Specific Conditions

224. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-05	Carpenter's Shop Fugitives	VOC	0.67	2.20

225. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 63, Subpart JJ, §63.800 (see Appendix A), monthly record keeping of the finishing materials and adhesives used in the Carpenter's Shop (SN-MS-05) shall be maintained on site to demonstrate that the facility meets the criteria for an incidental furniture manufacturer. Monthly usage

shall be limited to 100 gallons of solvent-based finishing materials and adhesives per month.

South Landfill

The South Landfill is used mainly for disposal of plant trash and molten sulfur from the DECTP process. Fugitive particulate emissions from this area are estimated to be de minimus. Sulfur disposal will result in emissions of VOC and SO_2.

Specific Conditions

226. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-06	South Landfill	SO_2 VOC	0.50 7.00	0.17 2.40

227. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-06	South Landfill	Toluene[HAP]	5.00	1.70

228. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, monthly records of sulfur disposed in the South Landfill (SN-MS-06) shall be maintained, kept on site, and made available to Department personnel upon request. Yearly disposal, on a 12-month rolling total, shall not exceed 24 million pounds per year.

Gasoline Storage Tank

Albemarle Corporation maintains a 3100 gallon gasoline storage tank on the South Plant. This tank is filled periodically by a local vendor. The gasoline is used for plant vehicles and equipment.

Specific Conditions

229. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-07	Gasoline Storage Tank	VOC	47.7	1.0

230. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
MS-07	Gasoline Storage Tank	Benzene[HAP]	0.5	0.1
		Hexane[HAP]	0.8	0.1
		Toluene[HAP]	0.7	0.1
		Xylene[HAP]	0.3	0.1
		Ethyl Benzene[HAP]	0.1	0.1
		Iso-octane[HAP]	0.4	0.1

231. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part 70.6, the gasoline storage tank shall be limited to 200,000 gallons throughput per rolling 12 months.

232. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, records shall be maintained to demonstrate compliance with the gasoline storage tank throughput limit. The records

shall be updated monthly, kept on site, and made available to Department personnel upon request.

Solid Waste Vault No. 2

The Solid Waste Vault No. 2 (SWV-2) is an on-site solid waste landfill. This landfill receives solids from the Drying Bed, the Extraneous Water Filter presses, and numerous solid waste collection points throughout the process units. VOC and particulate emissions from this area are estimated to be de minimus under Group A Number 13 of the Department's Insignificant Activities List.

Outfall 002 Bioreactor

The Outfall 002 Bioreactor is a 30,000 gallon per day package sewage treatment plant, which treats effluents from numerous septic tanks located throughout the plant. The treatment system includes an aeration basin clarifier and chlorine contact chamber. The chlorinator uses swimming pool chlorine tablets for chlorination. This source emits trace amounts of chlorine and methane, and is considered insignificant under Group A Number 13.

PSV-1 Sumps and PSV-1 Leachate Tank

PSV-1 is a closed on-site landfill. This landfill is designed with both primary and secondary liners which underlay the waste. Liquid which collects on top of these liners drain to two in-ground open top collection sumps, one for the primary liner, and one for the secondary liner. The liquid collected in these sumps is pumped to the PSV-1 Leachate Tank, T-9590. The PSV-1 Leachate Tank is an API tank with a nominal capacity of 43,000 gallons. The liquid collected in this tank is trucked off-site for disposal. The liquid which collects in the sumps and tank is essentially water with very little contamination. All three of these sources, PSV-1 Primary Liner Sump, PSV-1 Secondary Liner Sump, and PSV-1 Leachate Tank, are insignificant sources under Group A Number 13.

Cooling Towers

Albemarle Corporation-Magnolia South Plant
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14-00028

The cooling towers on the plant site are treated with a combination of sodium bromide and chlorine. These two chemicals are added simultaneously into a static in-line mixer. The sodium bromide and chlorine react to form sodium chloride and hyperbromus acid. Air emissions for this treatment are estimated to be de minimus under Group A Number 13.

95ND141 /Stabrom 909 Production at NC-14

Albemarle will either receive sodium hypochlorite in the process area, or manufacture it between batches in the product reactor. If Albemarle manufacturers sodium hypochlorite, it will feed aqueous sodium hydroxide solution to the reactor while gaseous chlorine is bubbled through it. The Caustic Scrubber (SN-TB-14) controls emissions from this process. Finished batches of sodium hypochlorite are pumped to a storage tank for later use. If Albemarle uses purchased sodium hypochlorite it will also be stored in this same tank. The sodium hypochlorite storage tank vents water vapor, nitrogen, and oxygen to the atmosphere.

The inorganic acid used in the process is received in the process area and stored on-site. It is a white crystal with no observed dusting tendencies. Bleach is fed directly to the process, as are bromine, sodium hydroxide, and sodium bromide. Equivalent liquid products can be produced from these new materials.

During these production processes BR_2, BrCl, and Cl_2 may be vented from the reactors to the reactive caustic scrubber (SN-TB-14). Particulate emissions are not expected but quantified for the inorganic acid weighing vessel (SN-TB-40). Oxygen, nitrogen, and water vapor vent from the product storage due to loading and unloading of the product solution and due to breathing losses from daily temperature fluctuations.

233. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr*	tpy*
SN-TB-14	Caustic Scrubber	Br_2^{NCAC} $BrCl^{NCAC}$ Cl_2^{NCAC}	0.1 0.1 0.1	0.44 0.44 0.44
SN-TB-29	Fugitive Emissions	Br_2^{NCAC} $BrCl^{NCAC}$ Cl_2^{NCAC}	 0.1	 0.44

* Includes emission estimates for the proposed production scenario only. If either TBBPA or stand alone methyl-bromide is being produced simultaneously, these limits may be additive with the new limits listed for the two sources under the other two scenarios.

234. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct

initial stack testing for SN-TB-14 within 1500 operating hours following permit issuance of operation of the 95ND141 /Stabrom 909 Production Scenario, and every 8760 operating hours thereafter of operation of this scenario. The permittee shall use Method 26A to verify compliance with the Br_2, BrCl, and Cl_2 emission rates set fourth in Specific Condition 233.

Alternate Control Device for SN-BR-12

The permittee may operate the Caustic Drum, SN-BR-15, as an alternative control device during periods when the Bromine Area Scrubber, SN-BR-12, is out of service. The following conditions must be met:

235. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr*	tpy*
SN-BR-15	Caustic Drum	$(Br_2 + Cl_2)^{NCAC}$	1.6	0.1

236. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, SN-BR-15 shall not exceed 5% opacity.

237. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall take immediate corrective action when visible emissions are detectable from SN-BR-15 and shall not operate the source until it is capable of meeting opacity requirements. Records shall be kept of any upset conditions at SN-BR-15 and submitted in accordance with Plantwide Condition 10.

238. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not operate SN-BR-15 more than 120 hours per twelve consecutive months and shall only operate the source during scheduled plant shutdowns or emergency situations where the Bromine Area Scrubber, SN-BR-12, is out of service.

239. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall keep records demonstrating compliance with Specific Condition 238. Records shall be updated monthly by the fifteenth day following the month to which the records pertain. The records shall include a twelve month rolling total. Records shall be made available to Department personnel upon request, and otherwise submitted in accordance with General Provision 7.

Generator Usage

In addition to generators that may be classified as insignificant under ADEQ's insignificant activities list, the permittee may operate diesel, gasoline, butane, propane, or natural gas-fired generators for the purpose of auxiliary power generation.

240. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
SN-MS-08	Electric Generators	PM_{10}	3.0	1.4
		VOC	8.1	13.2
		SO_2	2.8	1.3
		NO_x	41.6	19.0
		CO	162.5	19.0

241. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
SN-MS-08	Electric Generators	PM	3.0	1.4

242. Pursuant to §19.503 and Part 52, the permittee shall not exceed 20% opacity at SN-MS-08. Compliance shall be demonstrated by the use of diesel, gasoline, or butane only.

243. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) A.C.A., and 40 CFR 70.6, at SN-MS-08, the permittee shall not produce more than a total of 64,500 kW-hrs of electrical power annually. The sum of all generators shall not exceed a total rated power output of 1000 kW using diesel fuel. A maximum of 275.5 kW within the overall 1000 kW limit may be fueled by gasoline or butane.

244. Pursuant to §19.705 and Part 52, the permittee shall maintain monthly records of electrical production demonstrating compliance with Specific Condition 242. As an alternative, the permittee may perform monthly calculations using appropriate AP-42 emission factors to verify compliance with the emission rate in Specific Condition 240. Records shall be updated monthly by the fifteenth day following the month to which the records pertain. The records shall include a twelve month rolling total. Records shall be made available to Department personnel upon request, and otherwise submitted in accordance with General Provision 7.

NaBr Production in NC-14 Reactor

In this alternate operating scenario, the permittee produces NaBr in either a batch or continuous process in the NC-14 Reactor. The associated area scrubber, SN-TB-03, will be used for emission control.

245. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
SN-TB-03	Area Scrubber	$(Br_2+HBr)^{NCAC}$	0.1	0.44

246. Pursuant to §18.1002 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall conduct initial stack testing for SN-TB-03 within 1500 hours of operation of the NaBr Production Scenario, and every 8760 operating hours thereafter of operation of this scenario. The permittee shall use Method 26A to verify compliance with the Br_2 and HBr emission rates set fourth in Specific Condition 245.

EtBr at NC-14

Under an alternative scenario, Albemarle may produce ethyl bromide (EtBr) at the NC-14 production unit. EtBr may be produced at NC-14 using equipment already in place that is permitted under the MeBr production scenario.

The permittee will operate this scenario under the same emission limits as it would under the MeBr scenario with some exceptions. Permitted emission limits at the spent sulfuric acid tank (SN-TB-12) are increased as a result of the scenario. The permittee may also operate a new source, the Raw Material Recovery/ Disposal (SN-TB-37). At this source effluent from the EtBr trial production scenario is loaded into trucks and introduced into the NC-23 process or neutralized and disposed in the extraneous water system.

247. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, during EtBr production the permittee shall not exceed the emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	Not used in EtBr production scenario.			
TB-03	Area Process Scrubber (Ethyl Bromide Recovery Unit)	VOC	10.7	7.5
TB-04	Product Baghouse*	PM_{10}*	1.60*	7.00*
TB-08	Dust Collector Baghouse*	PM_{10}*	1.8*	7.9*
TB-11	Not used in EtBr production scenario.			
TB-12	Spent Sulfuric Acid Storage	VOC	0.53	0.38
TB-15	Not used in EtBr production scenario.			
TB-18	Not used in EtBr production scenario.			
TB-22	Not used in EtBr production scenario.			

SN-#	Description	Pollutant	lb/hr	tpy
TB-23	Not used in EtBr production scenario.			
TB-25	Not used in EtBr production scenario.			
TB-28	Not used in EtBr production scenario.			
TB-29	NC-14 Fugitive Emissions	VOC	3.47	2.4
TB-30	Ethanol Storage Tank	VOC	11.3	6.3
TB-37	Raw Material Recovery	VOC	1.34	0.94

*SN-TB-04 and SN-TB-08 are for product packaging scenarios which may occur during EtBr production.

248. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, during EtBr production the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	Not used in EtBr production scenario.			
TB-04	Product Baghouse*	PM*	1.6*	7.00*
TB-08	Dust Collector Baghouse*	PM*	1.8*	7.90*
TB-11	Not used in EtBr production scenario.			
TB-12	Spent Sulfuric Acid Storage	$H_2SO_4^{NCAC}$	0.01	0.01
TB-14	Not used in MeBr production scenario.			
TB-15	Not used in EtBr production scenario.			
TB-18	Not used in EtBr production scenario.			
TB-22	Not used in EtBr production scenario.			
TB-23	Not used in EtBr production scenario.			

SN-#	Description	Pollutant	lb/hr	tpy
TB-25	Not used in EtBr production scenario.			
TB-28	Not used in EtBr production scenario.			
TB-29	NC-14 Fugitive Emissions	$(Br + HBr)^{HAP}$	0.46	0.32
TB-30	Methanol Storage Tank	none	-	-
TB-37	Raw Material Recovery	HBr^{HAP}	0.1	0.1

*SN-TB-04 and SN-TB-08 are for product packaging scenarios which may occur during EtBr production.

249. Pursuant to §18.501 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed 5% opacity at SN-TB-37.

250. Pursuant to §19.705, A.C.A, and 40 CFR Part 70.6, the permittee shall not operate the EtBr scenario more than 1400 hours per 12 consecutive months.

251. Pursuant to §19.705 and 40 CFR Part 52, the permittee shall keep monthly records to demonstrate compliance with Specific Condition 250. Records shall be updated by the 15th day of the month following the month to which the records pertain. A twelve month rolling total shall be kept. Records shall be kept on-site and made available to Department personnel upon request. Records shall be submitted in accordance with General Provision 7.

252. Pursuant to §19.304 and 40 CFR 60, Subpart VV, the permittee shall comply with all applicable provisions §60.482-1 (General), §60.482-2 (Pumps in light liquid service), §60.482-3 (Compressors), §60.482-4 (Pressure relief devices in gas /vapor service), §60.482-5 (Sampling connection systems), §60.482-6 (Open-ended valves or lines), §60.482-7 (Valves in gas vapor service and in light liquid service), §60-482-8 (Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and connectors), §60.482-9 (Delay of repair requirements), §60.481-10 (Closed vent systems and control devices), §60.483-1 (Allowable percentage of valves leaking), §60.483-2 (Alternative standards of valves - Skip period leak detection and repair), §60.485 (Test methods and procedures), §60.486 (Recordkeeping), and §60.487 (Reporting).

Oil Separator Tank - T-292

Albemarle is allowed the flexibility to heat -treat the contents of SN-BT-10 (T-292). The tank has been removed from the Insignificant Activities list and listed as a permitted source.

253. Pursuant to §19.501 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 52 Subpart E, the permittee shall not exceed the emission rates set forth in the following table.

SN	Description	Pollutant	lb/hr	tpy
BT-10	Oil Separator Tank (T-292)	VOC H2S	14.4 0.01	0.5 0.1

254. Pursuant to §18.801 of the Arkansas Air Pollution Control Code (Regulation 18) and A.C.A §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall not exceed the non-criteria emission rates set forth in the following table.

SN	Description	Pollutant	lb/hr	tpy
BT-10	Oil Separator Tank (T-292)	Benzene Hexane Toluene Xylene	3.87 3.12 1.34 0.28	0.2 0.1 0.1 0.1

255. Pursuant to §19.705, A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, and 40 CFR Part §70.6, the permittee shall not exceed 10 batches per twelve consecutive months at SN-BT-10.

256. Pursuant to §19.705 and 40 CFR Part 52, the permittee shall keep monthly records of batch throughput at SN-BT-10. Records shall be updated by the 15th day of the month following the month to which the records pertain. A twelve month rolling total shall be kept. Records shall be kept on-site and made available to Department personnel upon request. Records shall be submitted in accordance with General Provision 7.

T-83403B

At the Alkyl Bromides area, the permittee operates the 11,130 gallon tank T-83403B. Tank emissions are routed to the Carbon Bed Adsorbers (SN-AB-15).

257. Pursuant to §19.304 et seq. of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR §60.116b(a) & (b), the permittee shall keep readily accessible records showing the dimensions and an analysis showing the capacity of T-83403B for the life of the vessel.

SECTION V: COMPLIANCE PLAN AND SCHEDULE

Albemarle Corporation-Magnolia South Plant is in compliance with the applicable regulations cited in the permit application. Albemarle will continue to operate in compliance with those identified regulatory provisions. The facility will examine and analyze future regulations that may apply and determine their applicability with any necessary action taken on a timely basis.

SECTION VI: PLANTWIDE CONDITIONS

1. Pursuant to §19.704 of Regulation 19, 40 CFR Part 52, Subpart E, and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the Director shall be notified in writing within thirty (30) days after construction has commenced, construction is complete, the equipment and/or facility is first placed in operation, and the equipment and/or facility first reaches the target production rate.

2. Pursuant to §19.410(B) of Regulation 19, and 40 CFR Part 52, Subpart E, the Director may cancel all or part of this permit if the construction or modification authorized herein is not begun within 18 months from the date of the permit issuance if the work involved in the construction or modification is suspended for a total of 18 months or more.

3. Pursuant to §19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, any equipment that is to be tested, unless stated in the Specific Conditions of this permit or by any federally regulated requirements, shall be tested with the following time frames: (1) Equipment to be constructed or modified shall be tested within sixty (60) days of achieving the maximum production rate, but in no event later than 180 days after initial start-up of the permitted source or (2) equipment already operating shall be tested according to the time frames set forth by the Department. The permittee shall notify the Department of the scheduled date of compliance testing at least fifteen (15) days in advance of such test. Compliance test results shall be submitted to the Department within thirty (30) days after the completed testing.

4. Pursuant to §19.702 of Regulation 19 and/or §18.1002 of Regulation 18 and A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311, the permittee shall provide:

   a. Sampling ports adequate for applicable test methods
   b. Safe sampling platforms
   c. Safe access to sampling platforms
   d. Utilities for sampling and testing equipment

5. Pursuant to §19.303 of Regulation 19 and A.C.A. §8-4-203 as referenced by A.C. A. §8-4-304 and §8-4-311, the equipment, control apparatus and emission monitoring equipment shall be operated within their design limitations and maintained in good condition at all times.

6. Pursuant to Regulation 26 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, this permit subsumes and incorporates all previously issued air permits for this facility.

7. Pursuant to §19.705 of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), and 40 CFR 52, Subpart E, the permittee shall submit, on a semiannual basis, a compliance certification statement for all emitted contaminants at all permitted storage vessels at the facility.

   The statement shall provide confirmation that all vessels have been operated in the manner outlined in the Title V permit application and subsequent submittals. A summary sheet of vessel parameters is included in Appendix B. Any deviation from submitted parameters, provided permitted emissions are not exceeded, shall be clearly documented with supporting calculations and attached to the statement. Any parameter deviations which will result in emission increases must be requested and permitted in advance.

8. Pursuant to §19.705 of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), and 40 CFR 52, Subpart E, for any source which this permit requires periodic emission calculations, and where worst-case operating parameters and throughput have not been exceeded during the recorded period, the permittee may substitute the following: 1) a photocopy of the original worst-case emission calculations originally submitted in the Title V application, and 2) a cover letter certifying that the submitted worst-case parameters and throughput have not been exceeded.

9. Pursuant to §19.705 of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), and 40 CFR 52, Subpart E, any annual records or annual emission calculations required by this permit shall be based upon a 12-month rolling total.

10. Pursuant to §19.705 of the Regulations of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), and 40 CFR 52, Subpart E, the permittee shall conduct weekly observations of visible emissions for all sources assigned an opacity limit.

    The visible emission observations shall be used as a method of compliance verification for the opacity limits assigned. The observations shall be conducted by personnel familiar with the facility's visible emissions. If during the weekly observations,

visible emissions are detected which appear to be in excess of the permitted opacity limit, the permittee shall:

a) Take immediate action to identify the cause of the visible emissions.
b) Implement all necessary corrective action.
c) Reassess the visible emissions after corrective action is taken.

i. If excessive visible emissions are still detected, an opacity reading shall be conducted in accordance with EPA Reference Method 9. This reading shall be conducted by personnel trained and certified in the reference method. If the opacity reading exceeds the permitted limit, further corrective measures shall be taken.
ii. If no excessive visible emissions are detected, the incident shall be noted in the records as described below.

The permittee shall maintain records related to all visible emission observations and Method 9 Readings. The records shall be updated on an as-performed basis. The records shall be kept on site and made available to Department personnel upon request. The records shall contain the following items:

a) the date and time of each observation/reading.
b) any observance of visible emissions appearing to be above permitted limits, or any Method 9 reading which indicates exceedence.
c) the cause of any observed exceedence of opacity limits, corrective action taken, and results of the reassessment.
d) The name of the person conducting the observation/reading.

11. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, no record keeping or parametric monitoring shall be required for any permit condition during any period of time when an affected source is not in operation. The shutdown period for the source must be clearly indicated in any required records or reports.

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12. Pursuant to §19.705 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, where no more stringent federal regulation applies, the permittee will be found in compliance with fugitive emissions limits in this permit when equipment in the affected unit is operated and maintained consistent with good industry practices, where no more stringent federal regulation applies (e.g., NSPS or MACT), and if the permittee calculates all fugitive emissions for each process area once

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every five years. The results of these calculations shall be summarized and included in each Title V renewal application. The fugitive emissions may be calculated using usage data (for ancillary chemicals, such as refrigerants and heat transfer fluids), monitoring data with EPA stratified factors, and EPA average SOCMI factors with component counts. Other methods may also be used if prior approval is received from the Department.

13. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), any sources identified as subject to specific Subparts of 40 CFR Parts 60, 61, and 63 must also comply with all applicable requirements of the General Provisions contained in Subpart A of each respective Part.

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14. Pursuant to §19.304 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19) and 40 CFR Part 61, Subpart M, the permittee shall fully comply with all applicable requirements of the *National Emission Standard for Asbestos*.

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15. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, for all processes proposed to be permitted at this facility, Albemarle may propose emission rate ranges in the air permit application. The upper end of these ranges may be significantly higher than the anticipated emissions from the affected sources. Provided no regulatory restrictions prevent the upper end of the proposed ranges from being incorporated into a final air permit, ADEQ shall state the ranges in the permit, and establish the upper ends as limits in the final air permit. Albemarle shall identify, in each application, sources it desires to be subject to this condition, and agrees to test each of these sources within ninety (90) days of permit issuance. Provided that the results of the testing, for each source, indicates that emissions are below the upper end of the established ranges, Albemarle may, at its discretion, submit an appropriate air permit application to establish emission rates reflecting the results of the testing.

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16. Reserved.

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17. Pursuant to §18.801 of Regulation 18 and A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, the permittee shall comply with all non-criteria emission rates in the permit and show compliance through the required testing, operating parameters monitoring, or any other associated permit requirements.

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Certain emission rates listed in this permit were developed using estimates or published emission factors. For emission limits based on published emission factors

or industry-specific test data, a change in emission factors that affects the estimated emission rates shall not be considered a violation of the permit limits.

For sources which received permission to construct or modify after May 1, 2000, which are tested and show exceedances from permitted rates, the higher emission rates will not be considered a violation so long as the following requirements are met. (1) The above referenced testing must have occurred within 60 days following achievement of maximum production and no later than 180 days following initial startup or otherwise as prescribed by the permit. (2) Within this required testing time frame, the permittee must apply for a permit modification to allow the higher emission rates as determined by test data. (3) The permit modification must be approved by the Department.

This condition does not apply to criteria pollutants or PM. This condition does not apply to pollutants for which test data is already available, or pollutant emission rates established to comply with an NSPS or NESHAP standard. This condition does not apply to sources constructed or modified before May 1, 2000.

18. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, stack testing requirements may be waived for any source which has not operated at least 25% of the twelve-month period prior to a scheduled test. In order for this waiver to be applied, the permittee must submit a written request to the Department at least thirty days in advance of the scheduled test. The request must include records of operating hours for the source in question.

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19. Pursuant to §19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, during any required stack testing event, the affected source shall be operated within 10 percent of the rated throughput capacity. If 90 percent of the rated throughout capacity can not be achieved, the permittee shall thenceforth be limited to 10 percent above the actual tested throughput.

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Permit Shield:

20. Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements, as of the date of permit issuance, included and specifically identified below:

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The following have been specifically identified as applicable requirements based upon the information submitted by the permittee in an application dated May 10, 1996.

Source (SN)	Regulation	Description
Facility	Arkansas Regulation 19	Compilation of Regulations of the Arkansas State Implementation Plan for Air Pollution Control
Facility	Arkansas Regulation 26	Regulations of the Arkansas Operating Air Permit Program
Facility	40 CFR Part 61, Subpart M	National Emission Standard for Asbestos
DE-04 DE-09 DE-12 DE-20	40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels
DECTP Process	40 CFR Part 61, Subpart FF	National Emission Standards for Benzene Waste Operations
AD-17 AD-24 AD-25 AD-28 AD-29	40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels
AB-15	40 CFR Part 60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels
AB-15	40 CFR Part 63, Subpart A	National Emission Standards for Hazardous Air Pollutants for Source Categories, General Provisions
AB-15	40 CFR Part 63, Subpart F	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
AB-15	40 CFR Part 63, Subpart G	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
AB-15	40 CFR Part 63, Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
DB-07	40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels
TB-03	40 CFR Part 60, Subpart Kb	Standards of Performance for Volatile Organic Liquid

Source (SN)	Regulation	Description
		Storage Vessels
TB-29	40 CFR Part 60, Subpart VV	Standards of Performance for Equipment Leaks of VOC in the Sythetic Organic Chemicals Manufacturing Industry
TB-03	40 CFR Part 63, Subpart F	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
TB-11		
TB-17		
TB-25		
TB-29	40 CFR Part 63, Subpart G	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
TB-30		
TB-31	40 CFR Part 63, Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
TB-32		
TB-34		
TB-35		
WW-01		
NC-14 Process	40 CFR Part 82, Subpart A	Protection of Stratospheric Ozone, Production and Consumption Controls
NC-14 Process	40 CFR Part 82, Subpart E	Protection of Stratospheric Ozone, The Labeling of Products Using Ozone-Depleting Substances
NC-17 CMPU	40 CFR Part 63, Subpart A	National Emission Standards for Hazardous Air Pollutants for Source Categories, General Provisions
NC-17 CMPU	40 CFR Part 63, Subpart F	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
NC-17 CMPU	40 CFR Part 63, Subpart G	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
NC-17 CMPU	40 CFR Part 63, Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks

Source (SN)	Regulation	Description
21-01 21-02	40 CFR Part 61, Subpart A	National Emission Standards for Hazardous Air Pollutants, General Provisions
21-01 21-02	40 CFR Part 61, Subpart J	National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene
21-01 21-02	40 CFR Part 61, Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)
21-01 21-02	40 CFR Part 61, Subpart Y	National Emission Standards for Benzene Emissions from Benzene Storage Vessels
21-01 21-02	40 CFR Part 61, Subpart FF	National Emission Standards for Benzene Waste Operations
MS-05	40 CFR Part 63, Subpart JJ	Nashional Emission Standards for Wood Furniture Manufacturing Operations
Facility	40 CFR Part 82, Subpart E	Protection of Stratospheric Ozone, The Labeling of Products Using Ozone-Depleting Substances

Title VI Provisions:

21. The permittee shall comply with the standards for labeling of products using ozone depleting substances pursuant to 40 CFR Part 82, Subpart E: Formatted: Bullets and Numbering

a. All containers containing a class I or class II substance stored or transported, all products containing a class I substance, and all products directly manufactured with a class I substance must bear the required warning statement if it is being introduced to interstate commerce pursuant to §82.106.

b. The placement of the required warning statement must comply with the requirements pursuant to §82.108.

c. The form of the label bearing the required warning must comply with the requirements pursuant to §82.110.

d. No person may modify, remove, or interfere with the required warning statement except as described in §82.112.

22. The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR Part 82, Subpart F, except as provided for MVACs in Subpart B: Formatted: Bullets and Numbering

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. ("MVAC-like appliance" as defined at §82.152.)

e. Persons owning commercial or industrial process refrigeration equipment must comply with leak repair requirements pursuant to §82.156.

f. 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.

23. If the permittee manufactures, transforms, destroys, imports, or exports a class I or class II substance, the permittee is subject to all requirements as specified in 40 CFR part 82, Subpart A, Production and Consumption Controls.

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24. If the permittee performs a service on motor (fleet) vehicles when this service involves ozone-depleting substance refrigerant (or regulated substitute substance) in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

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The term "motor vehicle" as used in Subpart B does not include a vehicle in which final assembly of the vehicle has not been completed. The term "MVAC" as used in Subpart B does not include the air-tight sealed refrigeration system used as refrigerated cargo, or the system used on passenger buses using HCFC-22 refrigerant.

25. The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR part 82, Subpart G, Significant New Alternatives Policy Program.

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SECTION VII: INSIGNIFICANT EMISSION SOURCES

Pursuant to §26.304 of Regulation 26, the following sources are insignificant activities. Any activity for which a state or federal applicable requirement applies is not insignificant even if this activity meets the criteria of §304 of Regulation 26 or is listed below. Insignificant activity determinations rely upon the information submitted by the permittee in various applications dated July 10, 1996, through April 19, 2002.

INSIGNIFICANT SOURCE				
			Estimated Losses	
SN	**Description**	**Pollutant**	**lb/hr**	**ton/yr**
BR-05	Recovered Groundwater Storage Tank D-104 (formerly BR-13)	VOC Bromoform[HAP] Ethylene Dibromide[HAP] Ethylene DiChloride[HAP] Toluene[HAP] Br_2[NCAC]	4.9E-6 1.0E-7 1.0E-7 4.0E-6 1.0E-7 3.6E-6	2.1E-5 4.4E-7 4.4E-7 1.8E-5 4.4E-7 2.1E-5
BR-07	Sulfuric Acid Storage Tank	Water vapor only.		
BR-10	Chilled H_2O Storage Tank	Water vapor only.		
BR-13	Recovered Groundwater Storage Tank D-104	Now labeled BR-05.		
BR-14	Br_2/BrCl Fugitive Emissions	Bromoform[HAP] 2,4,6-Trichlorophenol[HAP]	0.04 2.5E-5	0.18 1.1E-4
-	Sulfinol Storage Sump S-1901	Water vapor only.		
-	MDEA Storage T-5001	Water vapor only.		
RU-03	BRU Fugitives	Methylene Chloride[HAP]	6.0E-3	0.03
CB-03	NaOH Storage Tank	Water vapor only.		
CB-05	$CaBr_2$ Storage Tank	Water vapor only.		
CB-06	$CaBr_2$ Storage Tank	Water vapor only.		

INSIGNIFICANT SOURCE				
			Estimated Losses	
SN	**Description**	**Pollutant**	**lb/hr**	**ton/yr**
CB-07	Product Rundown Tank	Water vapor only.		
CB-08	Product Rundown Tank	Water vapor only.		
CB-09	Slurry Feed Tank	Water vapor only.		
CB-10	Wash Water Tank	Water vapor only.		
CB-11	Acid Storage Tank	Water vapor only.		
CB-12	Product Storage Tank	Water vapor only.		
CB-13	Product Storage Tank	Water vapor only.		
CB-14	Product Storage Tank	Water vapor only.		
CB-15	Product Storage Tank	Water vapor only.		
DE-11	Bulk Chaser Storage Tank	Naphthalene[HAP]	4.0E-3	0.02
DE-27	Sodium Sulfite Storage Tank	Insignificant		
AD-16	XT 1501; Process Heater 2.89MM Btu/hr	PM PM_{10} SO_2 VOC CO NO_X	0.014 0.014 2.1E-4 0.159 0.056 0.28	0.014 0.014 9.2E-4 0.75 0.25 1.23
AD-32	F-1565; Natural Gas Heater 4.62MM Btu/hr	PM PM_{10} SO_2 VOC CO NO_X	0.023 0.023 3.4E-4 0.024 0.090 0.45	0.098 0.098 1.5E-3 0.104 0.39 1.97
AD-37	Alcohol Storage Tank	VOC	0.005	0.02

INSIGNIFICANT SOURCE				
			Estimated Losses	
SN	**Description**	**Pollutant**	**lb/hr**	**ton/yr**
DB-02	Raw Material Storage Tank	VOC	0.1	0.44
DB-03	Sulfuric Acid Storage Tank	Sulfuric Acid	0.01	0.04
DB-11	Slurry Feed Tank	Water vapor only.		
DB-12	Slurry Feed Tank	Water vapor only.		
TB-13	Refrigerant Storage Tank	Ethylene Glycol^{HAP}	1.0E-6	4.4E-6
TB-20	Brine Stripper Column Vent	Methanol^{HAP}	1.2E-3	5.3E-3
TB-26	Fresh Sulfuric Acid Storage	$H_2SO_4{}^{NCAC}$	0.01	0.05
TB-36	Water Scrubber Tank	VOC	0.04	0.03
TB-40	Raw Material Weigh Vessel	PM PM_{10}	0.1 0.1	0.44 0.44
TB-26	H_2SO_4 Tank Alternate Use	VOC	0.01	0.04
		H_2SO_4	0.01	0.05
		Ethylene Glycol	0.01	0.04
TB-27	Refrigerant Storage Tank	Ethylene Glycol^{HAP}	1.0E-6	4.4E-6
-	Hot Water Tank 67-65-1	Methanol^{HAP}	3.0E-3	0.013
-	Area Safety Relief Knockout Pot D-9505	Non-VOC caustic.	-	-
-	Antifoam Storage Tank T-95107	*Organic liquids, VP# 3.5 psia.*	-	-
-	Hot Water Tank T-602	VOC	3.0E-3	0.013
-	Ethylene Glycol Storage Tank D-9972	*Pressure vessel.*	-	-

INSIGNIFICANT SOURCE				
			Estimated Losses	
SN	**Description**	**Pollutant**	**lb/hr**	**ton/yr**
-	Ethylene Glycol Tank T-93952	Ethylene Glycol^{HAP}	5.0E-4	2.2E-3
-	Ethylene Glycol Tank T-9393	Ethylene Glycol^{HAP}	5.0E-4	2.2E-3
-	Ethylene Glycol Tank T-9351	Ethylene Glycol^{HAP}	7.0E-4	3.1E-3
-	Ethylene Glycol Tank T-9359	Ethylene Glycol^{HAP}	7.0E-4	3.1E-3
-	Ethylene Glycol Tank T-9392	Ethylene Glycol^{HAP}	5.0E-4	2.2E-3
-	Tempered Water Tank T-9368	Water vapor only.		
15-14	2 Natural Gas Process Heaters	PM PM_{10} SO_2 VOC CO NO_X	0.02 0.02 0.01 0.02 0.04 0.30	0.09 0.09 0.04 0.09 0.18 1.31
16-09	EBTBP Ambient Dust Collector SF9398	PM PM_{10}	0.1 0.1	0.3 0.3
16-30	Indirect-fired Gas Heater	PM PM_{10} SO_2 VOC CO NO_X	0.1 0.1 0.1 0.1 0.1 0.4	0.5 0.5 0.5 0.1 0.2 1.8
16-32	**Sulfuric Acid Storage Tank T-9315**	**H_2SO_4+SO_3**	**<0.1**	**<0.1**
16-33	Molten Sulfur Tank T-9365	H_2S^{NCAC} SO_2	0.10 0.19	0.43 0.81
BT-02	Purchased Brine Surge Tank T-3017	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05

INSIGNIFICANT SOURCE				
			Estimated Losses	
SN	**Description**	**Pollutant**	**lb/hr**	**ton/yr**
BT-03	Brine/Oil Separator OS-3002	VOC H_2S^{NCAC}	0.01 0.02	0.09 0.05
BT-04	Feed Brine Pump Suction Header Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-05	Overflow Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-06	Overflow Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-07	Feed Brine Pump Suction Header Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-08	Brine/Oil Separator Outlet Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-09	Overflow Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-14	Vacuum Pump Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-15	Overflow Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-18	Brine Underflow Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-19	Brine Underflow Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
BT-20	Brine Underflow Line Vent	VOC H_2S^{NCAC}	0.01 0.01	0.05 0.05
DM-04	**Catalyst Box**	**PM_{10}**	**0.06**	**0.23**

INSIGNIFICANT SOURCE				
			Estimated Losses	
SN	Description	Pollutant	lb/hr	ton/yr
		PM	0.06	0.23
DM-05	Stabilizer Hopper	PM_{10} PM	0.03 0.03	0.13 0.13
-	Solid Waste Vault No. 2	PM/PM_{10} VOC	trace trace	-
-	Outfall 002 Bioreactor	Chlorine[HAP]	trace	-
-	PSV-1 Sumps and PSV-1 Leachate Tank	VOC	0.343	1.51
-	Cooling Towers (Maintenance/Support Facilities)	Chlorine[HAP]	trace	-
-	Sulfuric Acid Tote Bin	H_2SO_4/ SO_3	1E-4	4E-4
-	Caustic Tote Bin at Boilers	-	-	-
-	Bleach Storage Tank (6,000 gal)	-	-	-
-	Hot Oil Expansion Tank (T-9354)	VOC	trace	<0.003
-	A-12 Emergency Systems Generators - Phone System and Admin Bldg Backup, Emergency Fire Pumps (2), Portable Water Supply Backup, Material Analyzer Backup, Outfall Flow Monitor Battery Backup	-	-	-
-	Hot Oil Surge Tank at NC-16/17	VOC	trace	<0.007
-	Molten Sulfur Pit Loadout	H_2S SO_2	0.22 0.42	0.96 1.80
	Diesel Storage Tanks			

INSIGNIFICANT SOURCE				
			Estimated Losses	
SN	Description	Pollutant	lb/hr	ton/yr
MS-09	(up to 10,000 gal total capacity)	VOC	trace	<0.12
BR-16	C-12 Olefin Storage (up to 10,000 gal total capacity)	VOC	trace	0.07
MS-10	Gasoline Storage Tank (1000 gal)	VOC various HAPs	trace trace	0.6 0.03

Pursuant to §26.304 of Regulation 26, the emission units, operations, or activities contained in Regulation 19, Appendix A, Group B, have been determined by the Department to be insignificant activities. Activities included in this list are allowable under this permit and need not be specifically identified.

SECTION VIII: GENERAL PROVISIONS

1. Pursuant to 40 CFR 70.6(b)(2), any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.) as the sole origin of and authority for the terms or conditions are not required under the Clean Air Act or any of its applicable requirements, and are not federally enforceable under the Clean Air Act. Arkansas Pollution Control & Ecology Commission Regulation 18 was adopted pursuant to the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.). Any terms or conditions included in this permit which specify and reference Arkansas Pollution Control & Ecology Commission Regulation 18 or the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute.

2. Pursuant to 40 C.F.R. 70.6(a)(2) and §26.701(B) of the Regulations of the Arkansas Operating Air Permit Program (Regulation 26), effective August 10, 2000, this permit shall be valid for a period of five (5) years beginning on the date this permit becomes effective and ending five (5) years later.

3. Pursuant to §26.406 of Regulation #26, it is the duty of the permittee to submit a complete application for permit renewal at least six (6) months prior to the date of permit expiration. Permit expiration terminates the permittee's right to operate unless a complete renewal application was submitted at least six (6) months prior to permit expiration, in which case the existing permit shall remain in effect until the Department takes final action on the renewal application. The Department will not necessarily notify the permittee when the permit renewal application is due.

4. Pursuant to 40 CFR 70.6(a)(1)(ii) and §26.701(A)(2) of Regulation #26, where an applicable requirement of the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq* (Act) is more stringent than an applicable requirement of regulations promulgated under Title IV of the Act, both provisions are incorporated into the permit and shall be enforceable by the Director or Administrator.

5. Pursuant to 40 CFR 70.6(a)(3)(ii)(A) and §26.701(C)(2) of Regulation #26, records of monitoring information required by this permit shall include the following:

   a. The date, place as defined in this permit, and time of sampling or measurements;
   b. The date(s) analyses were performed;
   c. The company or entity that performed the analyses;

d. The analytical techniques or methods used;
e. The results of such analyses; and
f. The operating conditions existing at the time of sampling or measurement.

6. Pursuant to 40 C.F.R. 70.6(a)(3)(ii)(B) and §26.701(C)(2)(b) of Regulation #26, records of all required monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit.

7. Pursuant to 40 C.F.R. 70.6(a)(3)(iii)(A) and §26.701(C)(3)(a) of Regulation #26, the permittee shall submit reports of all required monitoring every 6 months. If no other reporting period has been established, the reporting period shall end on the last day of the anniversary month of this permit. The report shall be due within 30 days of the end of the reporting period. Even though the reports are due every six months, each report shall contain a full year of data. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official as defined in §26.2 of Regulation #26 and must be sent to the address below.

Arkansas Department of Pollution Control and Ecology
Air Division
ATTN: Air Enforcement
Post Office Box 8913
Little Rock, AR 72219

8. Pursuant to 40 C.F.R. 70.6(a)(3)(iii)(B), §26.701(C)(3)(b) of Regulation #26, and §19.601 and 19.602 of Regulation #19, all deviations from permit requirements, including those attributable to upset conditions as defined in the permit shall be reported to the Department. An initial report shall be made to the Department within 24 hours of discovery of the occurrence. The initial report may be made by telephone and shall include:

a. The facility name and location,
b. The process unit or emission source which is deviating from the permit limit,
c. The permit limit, including the identification of pollutants, from which deviation occurs,
d. The date and time the deviation started,
e. The duration of the deviation,

f. The average emissions during the deviation,
g. The probable cause of such deviations,
h. Any corrective actions or preventive measures taken or being take to prevent such deviations in the future, and
i. The name of the person submitting the report.

A full report shall be made in writing to the Department within five (5) business days of discovery of the occurrence and shall include in addition to the information required by initial report a schedule of actions to be taken to eliminate future occurrences and/or to minimize the amount by which the permits limits are exceeded and to reduce the length of time for which said limits are exceeded. If the permittee wishes, they may submit a full report in writing (by facsimile, overnight courier, or other means) within 24 hours of discovery of the occurrence and such report will serve as both the initial report and full report.

9. Pursuant to 40 C.F.R. 70.6(a)(5) and §26.701(E) of Regulation #26, and A.C.A.§8-4-203, as referenced by §8-4-304 and §8-4-311, if any provision of the permit or the application thereof to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications hereof which can be given effect without the invalid provision or application, and to this end, provisions of this Regulation are declared to be separable and severable.

10. Pursuant to 40 C.F.R. 70.6(a)(6)(i) and §26.701(F)(1) of Regulation #26, the permittee must comply with all conditions of this Part 70 permit. Any permit noncompliance with applicable requirements as defined in Regulation #26 constitutes a violation of the Clean Air Act, as amended, 42 U.S.C. 7401, *et seq.* and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Any permit noncompliance with a state requirement constitutes a violation of the Arkansas Water and Air Pollution Control Act (A.C.A. §8-4-101 *et seq*.) and is also grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

11. Pursuant to 40 C.F.R. 70.6(a)(6)(ii) and §26.701(F)(2) of Regulation #26, it shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

12. Pursuant to 40 C.F.R. 70.6(a)(6)(iii) and §26.701(F)(3) of Regulation #26, this permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of

a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

13. Pursuant to 40 C.F.R. 70.6(a)(6)(iv) and §26.701(F)(4) of Regulation #26, this permit does not convey any property rights of any sort, or any exclusive privilege.

14. Pursuant to 40 C.F.R. 70.6(a)(6)(v) and §26.701(F)(5) of Regulation #26, the permittee shall furnish to the Director, within the time specified by the Director, any information that the Director may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Director copies of records required to be kept by the permit. For information claimed to be confidential, the permittee may be required to furnish such records directly to the Administrator along with a claim of confidentiality.

15. Pursuant to 40 C.F.R. 70.6(a)(7) and §26.701(G) of Regulation #26, the permittee shall pay all permit fees in accordance with the procedures established in Regulation #9.

16. Pursuant to 40 C.F.R. 70.6(a)(8) and §26.701(H) of Regulation #26, no permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes that are provided for elsewhere in this permit.

17. Pursuant to 40 C.F.R. 70.6(a)(9)(i) and §26.701(I)(1) of Regulation #26, if the permittee is allowed to operate under different operating scenarios, the permittee shall, contemporaneously with making a change from one operating scenario to another, record in a log at the permitted facility a record of the scenario under which the facility or source is operating.

18. Pursuant to 40 C.F.R. 70.6(b) and §26.702(A) and (B) of Regulation #26, all terms and conditions in this permit, including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Act unless the Department has specifically designated as not being federally enforceable under the Act any terms and conditions included in the permit that are not required under the Act or under any of its applicable requirements.

19. Pursuant to 40 C.F.R. 70.6(c)(1) and §26.703(A) of Regulation #26, any document (including reports) required by this permit shall contain a certification by a responsible official as defined in §26.2 of Regulation #26.

20. Pursuant to 40 C.F.R. 70.6(c)(2) and §26.703(B) of Regulation #26, the permittee shall allow an authorized representative of the Department, upon presentation of credentials, to perform the following:

    a. Enter upon the permittee's premises where the permitted source is located or emissions-related activity is conducted, or where records must be kept under the conditions of this permit;
    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
    c. Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit; and
    d. As authorized by the Act, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with this permit or applicable requirements.

21. Pursuant to 40 C.F.R. 70.6(c)(5) and §26.703(E)(3) of Regulation #26, the permittee shall submit a compliance certification with terms and conditions contained in the permit, including emission limitations, standards, or work practices. This compliance certification shall be submitted annually and shall be submitted to the Administrator as well as to the Department. All compliance certifications required by this permit shall include the following:

    a. The identification of each term or condition of the permit that is the basis of the certification;
    b. The compliance status;
    c. Whether compliance was continuous or intermittent;
    d. The method(s) used for determining the compliance status of the source, currently and over the reporting period established by the monitoring requirements of this permit; and
    e. Such other facts as the Department may require elsewhere in this permit or by §114(a)(3) and 504(b) of the Act.

22. Pursuant to §26.704(C) of Regulation #26, nothing in this permit shall alter or affect the following:

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a. The provisions of Section 303 of the Act (emergency orders), including the authority of the Administrator under that section;
b. The liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance;
c. The applicable requirements of the acid rain program, consistent with §408(a) of the Act; or
d. The ability of EPA to obtain information from a source pursuant to §114 of the Act.

23. Pursuant to A.C.A. §8-4-203 as referenced by §8-4-304 and §8-4-311, this permit authorizes only those pollutant emitting activities addressed herein.

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APPENDIX A

Applicable Federal Regulations

40 CFR Part 60 Subpart A
40 CFR Part 60 Subpart Kb
40 CFR Part 60 Subpart VV

40 CFR Part 61 Subpart A
40 CFR Part 61 Subpart J
40 CFR Part 61 Subpart M
40 CFR Part 61 Subpart V
40 CFR Part 61 Subpart Y
40 CFR Part 61 Subpart FF

40 CFR Part 63 Subpart A
40 CFR Part 63 Subpart F
40 CFR Part 63 Subpart G
40 CFR Part 63 Subpart H
40 CFR Part 63 Subpart JJ

40 CFR Part 82 Subpart A
40 CFR Part 82 Subpart E

APPENDIX B

Storage Vessel Parameter Summary Form

APPENDIX C

APPENDIX D

Request for PDS Invoice

Invoice Number *(assigned when invoice printed)*	PDS-

AFIN r	
Name *(for confirmation only)*	Albemarle - South Plant

Invoice Type (pick one) r		Mod X			

Permit Number r	
Media Code r	A
Fee Code or Pmt Type r	T5
Fee Description *(for confirmation only)*	Title V
Amount Due r *(whole dollar amount only)*	$4032
Printed Comment *(600 characters maximum)*	4887.40 (total chargeable tons)

Note: The information below is for use by the requesting division if desired; it will not print on the invoice.

Engineer	Bryan Leamons
Paid? (yes/no)	
Check number	
Comments	

r **Required data***(See "g:\Misc\PDS_FeeCodes.wpd" for descriptions and discussions of fee codes)*

Request submitted by:		Date:	

Public Notice

Pursuant to the Arkansas Operating Air Permit Program (Regulation #26) Section 602, the Air Division of the Arkansas Department of Environmental Quality gives the following notice:

Albemarle Corporation - Magnolia South Plant operates a chemical manufacturing facility at approximately six miles south of Magnolia. The facility applied for modification to their existing Title V Operating Air Permit (CSN: 14-0028). Upon final approval and permit issuance by the Department, the facility will be allowed to adjust existing plant configuration and produce a higher purity product.

This is the second public comment period for issuance of this permit. The permit has been redrafted in order to allow additional changes requested by the facility.

The application has been reviewed by the staff of the Department and has received the Department's tentative approval subject to the terms of this notice.

Citizens wishing to examine the permit application and staff findings and recommendations may do so by contacting Doug Szenher, Public Affairs Supervisor. Citizens desiring technical information concerning the application or permit should contact Bryan Leamons, Engineer. Both Doug Szenher and Bryan Leamons can be reached at the Department's central office, 8001 National Drive, Little Rock, Arkansas 72209, telephone: (501) 682-0744.

The draft permit and permit application are available for copying at the above address. A copy of the draft permit has also been placed at the Columbia County Public Library, 220 East Main St., Magnolia, Arkansas 71753. This information may be reviewed during normal business hours.

Interested or affected persons may also submit written comments or request a hearing on the proposal, or the proposed modification, to the Department at the above address - Attention: Doug Szenher. In order to be considered, the comments must be submitted within thirty (30) days of publication of this notice. Although the Department is not proposing to conduct a public hearing, one will be scheduled if significant comments on the permit provisions are received. If a hearing is scheduled, adequate public notice will be given in the newspaper of largest circulation in the county in which the facility in question is, or will be, located.

The Director shall make a final decision to issue or deny this application or to impose special conditions in accordance with Section 2.1 of the Arkansas Pollution Control and Ecology Commission's Administrative Procedures (Regulation #8) and Regulation #26.

Dated this

Marcus C. Devine
Director