OPERATING AIR PERMIT

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

Permit #: 762-AOP-R0

IS ISSUED TO:

Albemarle Corporation-Magnolia South Plant
Highway 79 South
Magnolia, AR 71753
Columbia County
CSN: 14-0028

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:

and

AND IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

Keith A. Michaels Date

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SECTION I: FACILITY INFORMATION

PERMITTEE:	Albemarle Corporation-Magnolia South Plant
CSN:	14-0028
PERMIT NUMBER:	762-AOP-R0
FACILITY ADDRESS:	Highway 79 South
COUNTY:	Columbia
CONTACT POSITION:	Clarice Hanusz, Senior Environmental Engineer
TELEPHONE NUMBER:	(870) 235-6291
REVIEWING ENGINEER:	Lyndon Poole
UTM North-South (Y):	3669711
UTM East-West (X):	479704

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 separate projects incorporated into this permit modification do not exceed the increase thresholds established in the PSD regulation.

Air Permit 762-AOP-R0 is the first operating air permit issued to this facility under Arkansas Regulation 26. In addition to fulfilling the requirements of Title V of the Clean Air Act, this permit also seeks to incorporate limits and provisions for all minor modifications initiated by the facility from 1992 through August, 1999.

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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.

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		Cross Reference Page
			lb/hr	tpy	
Total Allowable Emissions: Criteria Air Pollutants		PM_{10}	39.61	125.27	-
		SO_2	12815.22	3306.68	
		VOC	337.00	630.61	
		CO	48.79	155.15	
		NO_X	132.55	442.55	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
Total Allowable Emissions: Hazardous Air Pollutants (HAPs) *HAP emissions are included in VOC rates, where applicable.		Benzene[HAP]	3.62	4.92	-
		Bromoform[HAP]	4.50	2.54	
		Chlorine[HAP]	3.26	14.25	
		Chloroethane[HAP]	0.90	1.98	
		Dimethyl Formamide[HAP]	0.09	0.39	
		Ethylene Dibromide[HAP]	4.50	10.96	
		Ethylene Dichloride[HAP]	0.09	0.40	
		Ethylene Glycol[HAP]	0.94	4.16	
		Hydrogen Chloride[HAP]	21.87	10.11	
		Methanol[HAP]	49.16	147.60	
		Methyl Bromide[HAP]	17.87	46.78	
		Methyl Naphthalene[HAP]	1.36	5.59	
		Methylene Chloride[HAP]	1.74	7.70	
		Phthalic Anhydride[HAP]	0.20	0.88	
		Toluene[HAP]	48.99	34.59	
		Toluene Diamine[HAP]	0.08	0.35	
		Xylene[HAP]	3.51	15.35	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
Total Allowable Emissions: Non-Criteria Air Contaminants (NCACs, State-regulated)		Ammonia[NCAC]	10.59	46.00	-
		Bromine[NCAC]	19.85	86.65	
		HCFC-22[NCAC]	0.84	3.67	
		HFC-125[NCAC]	0.04	0.18	
		HFC-143a[NCAC]	0.04	0.18	
		Hydrogen Bromide[NCAC]	15.69	65.58	
		Hydrogen Peroxide[NCAC]	1.30	5.75	
		Hydrogen Sulfide[NCAC]	0.18	0.81	
		Methane[NCAC]	0.17	0.76	
		Particulate Matter[NCAC] (PM)	41.49	133.52	
		Sulfuric Acid[NCAC]	0.01	0.05	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
BC-01	Bromine Chloride Scrubber	Out of operation.			
BR-01	#1 Br_2 Tower Scrubber	VOC	1.50	6.60	44
		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	44
		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.			
BR-07	Sulfuric Acid Storage Tank	Insignificant.			
BR-08	Recycle HCl Storage Tank	Hydrogen Chloride $(HCl)^{HAP}$	0.07	0.31	44
BR-09	Recycle HBr Storage Tank Scrubber	Br_2^{NCAC}	0.02	0.06	44
		Hydrogen Bromide $(HBr)^{NCAC}$	0.02	0.09	
BR-10	Chilled H_2O Storage Tank	Insignificant.			
BR-11	Reserved.	Removed from service.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
BR-12	Bromine Area Scrubber	Cl_2^{HAP}	0.10	0.44	44
		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	44
		Cl_2^{HAP}	0.04	0.18	
		Br_2^{NCAC}	1.39	6.09	
		Chlorodifluoromethane (HCFC-22)^{NCAC}	0.02	0.09	
SL-01	Sulfur Recovery Processes, Gas Flare	PM_{10}	3.70	0.11	48
		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	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
SR-01	Tail Gas Incinerator	PM_{10}	0.07	0.31	48
		PM	0.07	0.31	
		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	48
		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.				
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	53
		PM	0.10	0.44	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
CB-02	South Reactor Scrubber Vent	VOC	9.00	39.40	53
		Methyl Bromide[HAP]	2.25	8.32	
		Methanol[HAP]	2.25	0.83	
		Bromoform[HAP]	2.25	1.27	
		Ethylene Dibromide[HAP]	2.25	5.48	
		HBr[NCAC]	0.10	0.22	
		Br_2[NCAC]	0.10	0.44	
CB-03	NaOH Storage Tank	Insignificant.			
CB-04	Methanol Storage Tank	VOC	25.50	111.70	53
		Methanol[HAP]	25.50	111.70	
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.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
CB-14	Product Storage Tank	Insignificant.			
CB-15	Product Storage Tank	Insignificant.			
CB-16	North Reactor Scrubber Vent	VOC	9.00	39.40	53
		Methyl Bromide^{HAP}	2.25	8.32	
		Methanol^{HAP}	2.25	0.83	
		Bromoform^{HAP}	2.25	1.27	
		Ethylene Dibromide^{HAP}	2.25	5.48	
		HBr^{NCAC}	0.10	0.22	
		Br_2 ^{NCAC}	0.10	0.44	
CB-17	CCF Fugitive Emissions	VOC	1.80	7.90	53
		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	53
		PM	0.10	0.44	
DE-01	Ethanol Storage Tank	VOC	11.00	4.82	59
DE-02	Toluene Storage Tank	VOC	11.00	4.82	59
		Toluene^{HAP}	11.00	4.82	
DE-03	Chaser Storage Tank	VOC	0.30	0.14	59
		Methyl Naphthalene^{HAP}	0.09	0.04	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
DE-04	Crude Product Storage Tank	VOC	8.96	3.93	59
		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	59
DE-07	Product Rundown Storage Tank	VOC	0.62	0.28	59
DE-08	Product Rundown Storage Tank	VOC	0.62	0.28	59
DE-09	Product Bulk Storage Tank	VOC	0.65	0.29	59
DE-10	Product Rundown Storage Tank	VOC	0.62	0.28	59
DE-11	Bulk Chaser Storage Tank	VOC	0.39	1.71	59
		Methyl Naphthalene[HAP]	0.12	0.53	
DE-12	Recovered Oil Storage Tank	VOC	0.20	0.10	59
		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.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
DE-17	Emergency Flare	PM_{10}	0.01	0.05	59
		PM	0.01	0.05	
		SO_2	0.01	0.05	
		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	59
		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	59
		Toluene^{HAP}	8.00	3.50	
DE-20	Isopropanol Storage Tank	VOC	9.40	4.10	59

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
DE-21	Vent Gas Oxidizer	PM_{10}	2.20	9.64	59
		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	
		Hydrogen Chloride (HCl)^{HAP}	1.00	4.38	
DE-22	DECTP Fugitives	VOC	9.40	41.10	59
		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	0.98	4.30	59
		Chloroethane^{HAP}	0.90	1.98	
		HCl^{HAP}	0.34	1.50	
DE-24	MC-2431, Centrifuge	VOC	12.70	5.60	59
		Toluene^{HAP}	12.70	5.60	
DE-25	Product Storage Tank	VOC	0.65	0.29	59

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
DE-27	Sodium Sulfite Storage Tank	Insignificant			
AD-01	T-1501; Olefins Storage Tank #1	VOC	0.16	0.71	66
AD-02	T-1503; Olefins Storage Tank #2	VOC	0.16	0.71	66
AD-03	T-1502; Alkyl Amines Storage Tank	VOC	0.26	1.14	66
AD-04	Reserved.	Vents to AD-16.			
AD-05	C-1531; Acid Vent Scrubber (formerly SB-03)	VOC	0.20	0.88	66
		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	66
AD-08	T-1534B; Alkyl Amine Rundown Tank	VOC	0.05	0.22	66
AD-09	T-1534C; Alkyl Amine Rundown Tank	VOC	0.05	0.22	66
AD-10	T-1537; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-11	T-1535; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-12	T-1536; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-13	1538-; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-14	T-1539; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-15	T-1540; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-16	XT 1501; Process Heater	Insignificant.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
AD-17	D-2427A; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-18	T-1409; NaBr Recycle Tank	VOC	0.26	1.14	66
AD-19	Reserved.	No longer in use.			
AD-20	T-1405A; Olefins Storage Tank	VOC	0.16	0.71	66
AD-21	T-1405B; Olefins Storage Tank	VOC	3.45	15.08	66
AD-22	Reserved.	Vents to AD-35.			
AD-23	T-1408 A&B; Alkyl Amines Storage Tank	VOC	0.03	0.14	66
AD-24	T-1542; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-25	T-1543; Alkyl Amine Storage Tank	VOC	0.26	1.14	66
AD-26	Emergency Flare	PM_{10}	0.01	0.05	66
		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	
		Br_2 NCAC	0.02	0.01	
AD-27	T-1407; Recycle Storage Tank	VOC	0.26	1.14	66
AD-28	T-1541; Recycle Storage Tank	VOC	0.08	0.35	66
AD-29	T-1544; Recycle Storage Tank	VOC	0.08	0.35	66

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
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	66
		PM	0.22	0.97	
		SO_2	0.09	0.40	
		VOC	1.22	5.35	
		CO	0.06	0.27	
		NO_X	0.70	3.07	
		Br_2 NCAC	0.03	0.14	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
AD-36	Alkyl Amines Fugitives	VOC	4.13	18.14	66
		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	16.47	
AD-37	ADMA Condensate Collection Tank	VOC	0.05	0.17	66
AB-15	Alkyl Bromide Plant	VOC	1.20	5.30	73
		Methylene Chloride[HAP]	0.24	1.10	
AB-16	Alkyl Bromide Fugitives	VOC	7.50	32.90	73
		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	77
DB-02	Raw Material Storage Tank	Insignificant.			
DB-03	Sulfuric Acid Storage Tank	Insignificant.			

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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		Cross Reference Page
			lb/hr	tpy	
DB-04	Product Dryer Filter	PM_{10}	1.20	5.30	77
		PM	1.20	5.30	
		SO_2	0.05	0.22	
		VOC	0.48	2.10	
		CO	1.30	5.40	
		NO_X	0.33	1.50	
		$(Br_2+HBr)^{NCAC}$	1.10	4.80	
DB-05	Product Vent Filter	PM_{10}	0.30	1.30	77
		PM	0.30	1.30	
DB-06	Product Vent Filter	PM_{10}	0.30	1.30	77
		PM	0.30	1.30	
DB-07	Raw Material Storage Tank	VOC	0.10	0.44	77
		HCl^{HAP}	5.10	2.50	
DB-08	Product Vent Filter	PM_{10}	1.10	4.80	77
		PM	1.10	4.80	
DB-09	Diphenyl Oxide Storage Tank	Source removed.			
DB-10	Ethylene Glycol Storage Tank	VOC	0.01	0.04	77
		Ethylene $Glycol^{HAP}$	0.01	0.04	77
DB-11	Slurry Feed Tank	Insignificant.			

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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		Cross Reference Page
			lb/hr	tpy	
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	77
		$(Br_2+HBr)^{NCAC}$	5.81	25.44	
		$HCFC\text{-}22^{NCAC}$	0.01	0.04	
TB-01	Methanol Storage Tank	VOC	7.20	7.20	81
		$Methanol^{HAP}$	7.20	7.20	
TB-02	Methyl Bromide Recovery System	Combined into TB-03.			
TB-03	Reactor Vent Scrubber	VOC	17.00	39.54	81
		$Methanol^{HAP}$	2.00	5.32	
		$Methyl\ Bromide^{HAP}$	13.00	28.50	
TB-04	Product Dryer Baghouse	PM_{10}	1.60	7.00	81
		PM	1.60	7.00	
		VOC	4.00	6.36	
		$Methanol^{HAP}$	4.00	6.36	
		HBr^{NCAC}	2.00	6.16	
TB-05	Product Storage Vent Baghouse	Combined into TB-08.			

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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		Cross Reference Page
			lb/hr	tpy	
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	81
		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	81
		Methanol^{HAP}	2.91	3.10	
TB-12	Sulfuric Acid Storage Tank	VOC	0.10	0.10	81
		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	81
TB-15	Hot Water Tank	VOC	0.10	0.44	81
		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	81
		Methanol^{HAP}	0.10	0.44	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
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	81
		PM	0.30	0.40	
TB-23	BPA Weigh Hopper Baghouse	PM_{10}	0.02	0.02	81
		PM	0.02	0.02	
TB-24	Rail Car Loading Baghouse	Never built.			
TB-25	Methanol Column Vent	VOC	0.70	3.20	81
		Methanol[HAP]	0.50	2.40	
TB-26	Sulfuric Acid Storage Tank	Insignificant.			
TB-27	Refrigerant Storage Tank	Insignificant.			
TB-28	By-product Treatment	VOC	0.10	0.10	81
		HCl[HAP]	0.10	0.50	
		Methanol[HAP]	0.01	0.05	81

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
TB-29	NC-14 Fugitive Emissions	VOC	3.47	15.25	81
		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	0.13	
		HFC-143a [NCAC]	0.03	0.13	
TB-30	Methanol Storage Tank	VOC	11.80	9.30	81
		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.			
15-01	Process Condenser	Out of operation.			
15-02	Process Scrubber	Br_2[NCAC]	0.02	0.09	96
		HBr[NCAC]	0.02	0.09	
15-03	Process Vent	Vents to SN-15-01.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
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	96
		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	96
		PM	1.00	4.38	
		SO_2	0.01	0.05	
		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	96

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
15-15	NC-15 Fugitive Emissions	PM_{10}	0.03	0.13	96
		PM	0.03	0.13	
		VOC	4.23	18.30	
		Toluene^{HAP}	2.90	12.70	
		$(Br_2+HBr)^{NCAC}$	1.54	6.72	
		HCFC-22^{NCAC}	0.03	0.13	
15-16	Dust Scrubber	PM_{10}	0.62	2.7	96
		PM	0.62	2.7	
15-17	Rail Car Vent	VOC	0.69	3.03	96
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	Out of operation.			
16-01	Tetrabromophthalic Anhydride Production--Packed Scrubber	SO_X	0.50	2.19	100
		PM_{10}	0.10	0.44	
		PM	0.10	0.44	
		Phthalic Anhydride^{HAP}	0.10	0.44	
16-02	Tetrabromophthalic Anhydride Production--Off Gas Scrubber	VOC	0.10	0.44	100
		SO_X	0.40	1.75	
		Phthalic Anhydride^{HAP}	0.10	0.44	
		Br_2^{NCAC}	0.10	0.44	
16-03	Out of service.				

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
16-04	Out of service.				
16-05	EBTBP Scrubber--Packed Scrubber	VOC	0.10	0.44	100
16-06	EBTBP Production--Converter Scrubber	VOC	0.10	0.44	100
		PM_{10}	0.40	1.75	
		PM	0.40	1.75	
16-07	EBTBP Production--In-process Storage Silo Vent Filter	PM_{10}	0.30	1.32	100
		PM	0.30	1.32	
16-08	EBTBP Production--Product Transfer and Storage Fabric Filter	PM_{10}	0.30	1.32	100
		PM	0.30	1.32	
16-09	EBTBP Ambient Dust Collector	Removed from service.			
16-10	Product Transfer and Storage Filter	PM_{10}	0.50	2.19	100
		PM	0.50	2.19	
		SO_X	0.07	0.31	
16-11	Tetrabromophthalic Anhydride Packaging Filter	PM_{10}	0.07	0.31	100
		PM	0.07	0.31	
16-12	Tetrabromophthalic Anhydride Weigh Hopper Filter	PM_{10}	0.10	0.44	100
		PM	0.10	0.44	
16-13	Tetrabromophthalic Anhydride Vacuum Pump	SO_X	0.10	0.44	100
16-14	Ethylene Diamine Storage Tank	Source removed.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
16-15	Propionic Acid Storage Tank	VOC	0.01	0.04	100
16-16	TBPA Neutralization Tank	SO_X	0.10	0.44	100
16-17	Ethylene Glycol Tank	VOC	0.02	0.09	100
		Ethylene Glycol^{HAP}	0.02	0.09	
16-18	Vent Gas Oxidizer	PM_{10}	0.04	0.18	100
		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^{HAP}	0.52	2.28	
16-19	Charge Hopper Vent	PM_{10}	0.30	1.32	100
		PM	0.30	1.32	
		SO_X	0.10	0.44	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
16-20	Heat Exchange Heater	PM_{10}	0.03	0.13	100
		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	100
		PM	0.20	0.88	
		VOC	0.40	1.76	
		$Xylene^{HAP}$	0.28	1.23	
16-22	By-product Powder Packaging	VOC	0.01	0.04	100
		PM_{10}	0.01	0.04	
		PM	0.01	0.04	
		$Xylene^{HAP}$	0.01	0.04	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
16-23	Fugitive Emissions	PM_{10}	0.32	1.40	100
		PM	0.32	1.40	
		SO_X	1.02	4.47	
		VOC	6.60	28.53	
		Xylene[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	100
16-25	Wet Scrubber	PM_{10}	0.40	1.75	100
		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	100
		PM	0.30	1.32	
16-27	Reactor Weigh Hopper Filter	PM_{10}	0.30	1.32	100
		PM	0.30	1.32	
16-28	TBPA Neutralization Tank	SO_X	0.10	0.44	100
16-29	Charge Hopper Vent	Combined with SN-19.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
16-30	Indirect-fired Gas Heater	Insignificant.			
BH-01 BH-02	Bubble: #1 Boiler, #2 Boiler.	PM_{10}	3.40	14.90	109
		PM	3.40	14.90	
		SO_2	5.60	24.53	
		VOC	1.90	8.40	
		CO	27.20	119.20	
		NO_X	95.20	417.00	
21-01	Vent Gas Incinerator	PM_{10}	0.10	0.44	113
		PM	0.10	0.44	
		SO_2	0.01	0.04	
		VOC	0.11	0.49	
		CO	3.8	16.60	
		NO_X	0.50	2.20	
		$Benzene^{HAP}$	0.11	0.49	
		HCl^{HAP}	0.30	1.31	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
21-02	NC-21 Fugitive Emissions	VOC	3.50	15.30	113
		Benzene[HAP]	1.00	4.40	
		HCl[HAP]	0.05	0.22	
		Ethylene Dichloride (EDC)[HAP]	0.09	0.40	
21-03	Wastewater Effluent	VOC	0.01	0.01	113
		Benzene[HAP]	0.01	0.01	
22-01	Polystyrene Baghouse	PM_{10}	0.40	1.75	116
		PM	0.80	3.50	
22-02	Slurry Tank	VOC	0.10	0.44	116
22-03	Dryer Baghouse	PM_{10}	0.30	1.31	116
		PM	0.38	1.66	
22-04	Product Baghouse	PM_{10}	0.05	0.22	116
		PM	0.05	0.22	
		VOC	0.10	0.44	
22-05	Dust Baghouse	PM_{10}	2.00	8.76	116
		PM	2.50	10.95	
22-06	Extraneous Water Tank	VOC	0.10	0.44	116

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
22-07	Ethylene Glycol Storage Tank	VOC	0.01	0.05	116
		Ethylene Glycol^{HAP}	0.01	0.05	
22-08	Carbon Adsorber Unit	VOC	1.00	4.40	116
22-09	Scrubber Tank	VOC	0.04	0.18	116
		HBr^{NCAC}	0.10	0.44	
22-10	Reserved. Emission point label unassigned.				
22-11	HBr Storage Tank	HBr^{NCAC}	0.09	0.39	116
22-12	HBr Storage Tank	HBr^{NCAC}	0.09	0.39	116
22-13	NC-22 Fugitive Emissions	VOC	0.78	3.41	116
		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	119
		HBr^{NCAC}	0.11	0.49	
		Br_2^{NCAC}	0.22	0.97	
23-02	Raw Material Unloading Baghouse	PM_{10}	0.10	0.44	119
		PM	0.20	0.88	
23-03	Raw Material Scrubber	VOC	0.45	1.98	119
23-04	By-product Loading	VOC	0.44	1.93	119

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
23-05	Vent Absorber	VOC	1.50	6.57	119
23-06	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM_{10}	0.30	1.32	119
		PM	0.60	2.64	
23-07		VOC	0.70	3.07	
23-08		HBr^{NCAC}	0.08	0.33	
23-09	Product Packaging Baghouse	PM_{10}	0.10	0.44	119
		PM	0.20	0.88	
		HBr^{NCAC}	0.01	0.01	
23-10	Product Packaging Dust Collection	PM_{10}	0.10	0.44	119
		PM	0.20	0.88	
23-11A 23-11B	Product Loading Baghouse Product Loading (Railcar)	PM_{10}	0.10	0.44	119
		PM	0.20	0.88	
23-12A 23-12B	Product Loading Baghouse Product Loading (Truck)	PM_{10}	0.10	0.44	119
		PM	0.20	0.88	
23-13	Floor Vacuum Baghouse	PM_{10}	0.10	0.44	119
		PM	0.20	0.88	
BT-01	Feed Brine Oil Separator/Surge Tank	VOC	0.01	0.05	124
		Hydrogen Sulfide (H_2S)^{NCAC}	0.12	0.52	
BT-02	Purchased Brine Surge Tank	Insignificant.			

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
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.			
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	Insignificant.			
BT-11	Neutralization Tank	VOC	0.01	0.05	124
		H_2S^{NCAC}	0.01	0.05	
		Ammonia $(NH_3)^{NCAC}$	0.20	0.90	
		Cl_2^{HAP}, or Halogens	0.03	0.13	
BT-12	Line Vent	VOC	0.01	0.05	124
		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	124
		H_2S^{NCAC}	0.01	0.05	
		NH_3^{NCAC}	0.02	0.09	
		Cl_2^{HAP}, or Halogens	0.01	0.05	

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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		Cross Reference Page
			lb/hr	tpy	
BT-14	Vacuum Pump Vent	Insignificant.			
BT-15	Overflow Line Vent	Insignificant.			
BT-16	Brinefield Oil/Water Separator	VOC	30.00	1.80	124
		H_2S^{NCAC}	0.01	0.05	
BT-17	Brinefield Oil Storage Tank	VOC	16.00	1.70	124
		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	124
		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	124
		NH_3^{NCAC}	0.02	0.09	
		H_2S^{NCAC}	0.02	0.09	
		Cl_2^{HAP}, or Halogens	0.02	0.09	

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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		Cross Reference Page
			lb/hr	tpy	
BT-23	Line Vent	VOC	0.01	0.05	124
		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	124
		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	124
		Ethylene Glycol^{HAP}	0.03	0.11	
DM-02	Thermal Oxidizer	PM_{10}	0.02	0.09	128
		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	128
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	128

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EMISSION SUMMARY					
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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
DM-07	DMTDA Fugitive Emissions	VOC	3.18	13.95	128
		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	131
MS-02	Drying Bed	VOC	0.10	0.44	132
MS-03	French Drain Sump Bubble	VOC	0.10	0.44	133
		Br_2[NCAC]	0.90	3.90	
MS-04	Pit Incinerator	PM_{10}	9.26	9.26	134
		PM	9.26	9.26	
		SO_2	0.63	0.63	
		NO_X	1.01	1.01	
MS-05	Carpenter's Shop Fugitives	VOC	0.67	2.20	135
MS-06	South Landfill	VOC	7.00	2.40	136
		SO_2	0.50	0.17	
		Toluene[HAP]	5.00	1.70	

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Source No.	Description	Pollutant	Emission Rates		Cross Reference Page
			lb/hr	tpy	
MS-07	Gasoline Storage Tank	VOC	50.90	0.35	137
		Benzene[HAP]	2.50	0.02	
		Hexane[HAP]	1.50	0.01	
		Toluene[HAP]	12.70	0.09	
		Xylene[HAP]	12.70	0.09	

SECTION III: PERMIT HISTORY

The following timetable summarizes the Department's permitting actions related to this facility from 1973 to the present.

Date	Permit Number	Purpose (summary)
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.
09/15/87	846-A	Issued for NC-15 process.
03/17/88	762-AR-1	Modification issued for the DBDPO process.

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Date	Permit Number	Purpose (summary)
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.

SECTION IV: EMISSION UNIT INFORMATION

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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. Vapors leaving SN-BR-01, SN-BR-04, and SN-BR-12 are monitored for halogens.

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
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} $HCFC\text{-}22^{NCAC}$	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, and shall be performed within 180 days of permit issuance 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. The testing shall be conducted within 180 days of permit issuance, and shall be repeated every year for bromine and every two years for chlorine. 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. Once stack test compliance has been attained, the flow rates measured at the satisfactory test events 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. Once stack test compliance has been attained, the flow meter valve position at the satisfactory test events 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 shall be kept on site and made available to Department personnel upon request. Once stack test compliance has been attained, the caustic concentration and changeout schedule corresponding to the satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed.

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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
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 within 180 days of permit issuance, 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.

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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	111.70
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] Methanol[HAP] Br_2[NCAC]	0.20 0.07 0.10	0.88 0.30 0.44

SN-#	Description	Pollutant	lb/hr	tpy
CB-04	Methanol Storage Tank	Methanol[HAP]	25.5	111.70
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 within 180 days of permit issuance, and annually 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 shall be kept on site and made available to Department personnel upon request. Once stack test compliance has been attained, the pH levels and changeout schedules confirmed at the satisfactory test event shall be recorded and submitted to the Department as proposed parameters for ongoing compliance assurance.

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.

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	R-21 Vent Scrubber (South)	VOC	9.00	39.40
CB-16	R-22 Vent Scrubber (North)	VOC	9.00	39.40

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
CB-02	R-21 Vent Scrubber (South)	Methyl Bromide[HAP]	2.25	8.32
		Methanol[HAP]	2.25	0.83
		Bromoform[HAP]	2.25	1.27
		Ethylene Dibromide[HAP]	2.25	5.48
		HBr[NCAC]	0.10	0.22
		Br_2[NCAC]	0.10	0.44

SN-#	Description	Pollutant	lb/hr	tpy
CB-16	North Reactor Scrubber Vent	Methyl Bromide[HAP]	2.25	8.32
		Methanol[HAP]	2.25	0.83
		Bromoform[HAP]	2.25	1.27
		Ethylene Dibromide[HAP]	2.25	5.48
		HBr[NCAC]	0.10	0.22
		Br_2[NCAC]	0.10	0.44

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 days of permit issuance, and every year thereafter.
CB-16	VOC	18 or 25A	Within 180 days of permit issuance, and every year 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 days of permit issuance, using EPA Reference Method 26A. The MeBr testing shall be repeated every two years following the initial test.

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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 designated as SN-DE-23.

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

Specific Conditions

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	VOC	11.00	4.82*
DE-02	Toluene Storage Tank	VOC	11.00	4.82*
DE-03	Chaser Storage Tank	VOC	0.30	0.14*
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	VOC	0.65	0.29*
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	0.98	4.30
DE-24	MC-2431, Centrifuge	VOC	12.70	5.60*
DE-25	Product Storage Tank	VOC	0.65	0.29*

*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	Toluene[HAP]	11.00	4.82*
DE-03	Chaser Storage Tank	Methyl Naphthalene[HAP]	0.09	0.04*
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 HCl[HAP]	2.20 1.00	9.64 4.38
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 0.90	1.50 1.98**
DE-24	MC-2431, Centrifuge	Toluene[HAP]	12.70	5.60*

*See Specific Condition 39.
**See Specific Condition 41.

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 35 and 36 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. 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 sources marked with a double asterisk (**) in the tables following Specific Conditions 35 and 36 shall be operated no more than 4,400 hours per year in alternate DECTP purification service. This scenario allows the conversion of ethanol into emissions of chloroethane within the limits specified.

42. 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 monthly records of operating hours for the alternate DECTP purification service. 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.

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°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. Once stack test compliance has been attained, the flow value measured at the 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 within 180 days of achieving full capacity, but no later than 270 days after permit issuance, 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 within 180 days of achieving full capacity, no later than 270 days after permit issuance, 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 within 180 days of permit issuance 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.

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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 is 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. That which cannot be sold or internally transferred as product is 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
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

SN-#	Description	Pollutant	lb/hr	tpy
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 Gas Oxidizer (VGO)	PM_{10} SO_2 VOC CO NO_x	0.22 0.09 1.22 0.06 0.70	0.97 0.40 5.35 0.27 3.07

SN-#	Description	Pollutant	lb/hr	tpy
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^{HAP}	0.01 0.02	0.05 0.01
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM Br_2^{HAP}	0.22 0.03	0.97 0.14
AD-36	Fugitive Emissions, Including Product Loading	$(Br_2+HBr)^{NCAC}$ $HCFC\text{-}22^{NCAC}$ $HFC\text{-}125^{NCAC}$ $HFC\text{-}143a^{NCAC}$	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 within 180 days of permit issuance, 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. Once stack test compliance has been attained, the flow value measured at the 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. Once stack test compliance has been attained, the caustic concentration and changeout schedule corresponding to the 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 within 180 days of permit issuance, 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°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 within 180 days of permit issuance, and annually 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).

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	1.20 0.05 0.48 1.30 0.33	5.30 0.22 2.10 5.40 1.50
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
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 $(Br_2+HBr)^{NCAC}$	1.20 1.10	5.30 4.80
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	2.50
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	$(Br_2+HBr)^{NCAC}$ $HCFC\text{-}22^{NCAC}$	5.81 0.01	25.44 0.04

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, and SN-DB-08.

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 within 180 days of permit issuance, and every year 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. Once stack test compliance has been attained, the visual inspection method shall be confirmed 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 120 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).

This permitting action allows an alternate operating scenario for the NC-14 process area. Under the alternate operating scenario, 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, this permit also allows flame retardant product from the NC-15 area to be packaged in small sacks using NC-14 equipment. The only affected emission point for this NC-15 small-sack scenario would be SN-TB-04, the TBBPA silo baghouse. While the NC-15 product would not occur simultaneously with normal TBBPA production, it would be allowed to occur during the MeBr scenario. Emissions resulting from NC-15 small-sack packaging 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
TB-11	Column Feed Tank	VOC	1.20	4.50
TB-12	Spent Sulfuric Acid Storage	VOC	0.10	0.10

SN-#	Description	Pollutant	lb/hr	tpy
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
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

SN-#	Description	Pollutant	lb/hr	tpy
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	VOC	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°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 permit issuance, and every 8760 TBBPA operating hours 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. Once stack test compliance has been attained, the flow rates measured at the 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. Once stack test compliance has been attained, 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. Once stack test compliance has been attained, the records shall be confirmed for purposes of continuous compliance until the next test is performed.

Conditions for NC-15 small-sack packaging scenario:

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

Source	Description	HON Source Type	HON Group
SN-TB-03	Methyl Bromide Recovery Unit	Process Vent	Group 2
SN-TB-25	Methanol Recovery Column Vent	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.			
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	Not used in MeBr production scenario.			
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.			

SN-#	Description	Pollutant	lb/hr	tpy
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 limits for NC-15 small-sack packaging, 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.		
TB-04	Product Baghouse*	PM*	1.60*	7.00*
TB-08	Not used in MeBr production scenario.			
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.			

SN-#	Description	Pollutant	lb/hr	tpy
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 limits for NC-15 small-sack packaging, 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.

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. The

first report 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.

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).

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.

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), and pending submittal of the NCS, 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 the value indicated in the NCS.

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), and pending submittal of the NCS, the permittee shall maintain a temperature in the methyl bromide stripper overhead stream of the methyl bromide recovery unit (SN-TB-03) equal to or greater than the value indicated in 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}	0.62	2.70
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}	0.02 0.02	0.09 0.09
15-09	Refrigerated Coolant Storage	Ethylene Glycol^{HAP}	0.03	0.13
15-10	Never installed.			
15-11	Never installed.			
15-12	NC-15 Area Scrubber	PM Br_2^{NCAC}	1.00 0.70	4.38 3.07

SN-#	Description	Pollutant	lb/hr	tpy
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	0.62	2.70

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.

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 within 180 days of permit issuance, 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 within 180 days of permit issuance, and annually 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. 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 no longer operate the sources within the NC-15 area that were previously associated with toluene. This restriction shall include: SN-15-01, SN-15-08 , SN-15-17, and SN-15-18. The permittee shall have 180 days from permit issuance to clear residual toluene from these units and associated tanks. Once toluene clearance is attained at SN-15-17, it may be used for DPE loading/unloading as outlined in the permit application. SN-15-18 must be cleared of toluene by this time, but once so cleared may be operated under the terms outlined in the following condition.

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.

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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).

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
16-15	Propionic Acid Storage Tank	VOC	0.01	0.04

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

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 Filter	PM	0.07	0.31
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[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

SN-#	Description	Pollutant	lb/hr	tpy
16-21	Product Storage Hopper	PM Xylene[HAP]	0.20 0.28	0.88 1.23
16-22	By-Product Powder Packaging	Xylene[HAP]	0.01	0.04
16-23	NC-16 Operation: Fugitive Emissions	PM Xylene[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

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	100
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-16-15 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, SN-16-13 and SN-16-25 every three hours. The caustic pH records shall be kept on site and made available to Department personnel upon request. Once stack test compliance has been attained, the caustic pH corresponding to the satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed.

152. 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 written certification of the strength of the 95% sulfuric acid solution used to feed the scrubber at SN-16-13. A copy of the solution recipe shall also be maintained. The certification shall be initialed at the completion of each new batch. These records shall be kept on site and made available to Department personnel upon request.

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, SN-16-02, and SN-16-24 within 180 days of permit issuance, and every two years thereafter. 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 within 180 days of permit issuance, and annually 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 180 days of permit issuance, 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.

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 Combined emission bubble.
BH-02	#2 Boiler	PM	1.70	

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 operate a monitor which continuously measures the H_2S concentration of the combined gas flow to the boilers.

The H_2S monitor shall complete a minimum of one sample every 15 minutes. Concentration averages shall be computed from four or more data points, equally spaced over a rolling three-hour period. The measured H_2S concentration shall be converted to equivalent pounds of SO_2 out of the boiler stacks through a calculation assuming 1:1 molar ratio. A combined emission rate of 5.6 pounds per hour SO_2 shall be considered the maximum compliant value.

The results of these measurements shall be recorded and submitted to the Department every quarter. The first report shall be due 30 days following the 3-month anniversary of permit issuance.

During periods when the H_2S monitor is down, undergoing maintenance, or when the H_2S concentration is beyond its range of detection, alternative H_2S sampling shall immediately be initiated using a chromatographic method following the procedures outlined in ASTM E-260.

Under the alternative sampling scenario, initial sampling frequency shall be once every 15 minutes. If two consecutive samples indicate compliance with SO_2 limits, then the H_2S may be sampled every 30 minutes. If two consecutive half-hour samples indicate compliance, then the sampling may be performed every 60 minutes. If two consecutive hourly samples indicate compliance, then the sampling may convert to a three-hour basis, which may continue throughout the remainder of monitor downtime. If any three-hour sample indicates noncompliance, the sampling shall revert to the initial 15-minute schedule. Total alternative sampling time shall not exceed 5% of a calendar quarter, on a cumulative basis.

Within 90 days of permit issuance, the permittee shall submit an approvable methodology for H_2S measurement, quality control/quality assurance (QA/QC), and SO_2 calculation. The methodology may be a modification of versions submitted in accordance with Air Permit 762-AR-9 ("Methodology for Monitoring the H_2S Concentration in the Steam Boiler Fuel Gas," Albemarle Corporation). Equipment necessary to fulfill the requirements of ASTM E-260 must be in place and operational within 90 days of permit issuance or within 90 days of QA/QC methodology approval, whichever is later.

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 within 180 days of permit issuance, 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	PM_{10}	5
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} SO_X VOC CO NO_x	0.10 0.01 0.11 3.80 0.50	0.44 0.04 0.49 16.60 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 0.11 0.30	0.44 0.49 1.31
21-02	NC-21 Fugitive Emissions	Benzene[HAP] HCl[HAP] Ethylene Dichloride[HAP]	1.00 0.05 0.09	4.40 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
22-09	Scrubber Tank	VOC	0.04	0.18

SN-#	Description	Pollutant	lb/hr	tpy
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	0.09	0.39
22-12	HBr Storage Tank	HBr	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°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.

Silo emission bubble. SN-23-06, SN-23-07, and SN-23-08 are source numbers assigned to three silo processes: receiving, blending, and discharging materials for packaging, respectively. Each of the silos involved vents to two identical fabric filter baghouse. This permit allows the facility to conduct any of the three processes at any one of the silos at any given time. However, the receiving operation shall only be conducted at 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	0.45	1.98
23-04	By-product Loading	VOC	0.44	1.93
23-05	Vent Absorber	VOC	1.50	6.57
23-06	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM_{10} VOC	0.30 0.70	1.32 3.07
23-07				
23-08				
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	PM_{10}	0.10	0.44
23-11B	Product Loading (Railcar)			
23-12A	Product Loading Baghouse	PM_{10}	0.10	0.44
23-12B	Product Loading (Truck)			
23-13	Floor Vacuum Baghouse	PM_{10}	0.10	0.44

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
23-06	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM HBr [NCAC]	0.60 0.08	2.64 0.33
23-07				
23-08				
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	PM	0.20	0.88
23-11B	Product Loading (Railcar)			
23-12A	Product Loading Baghouse	PM	0.20	0.88
23-12B	Product Loading (Truck)			
23-13	Floor Vacuum Baghouse	PM	0.20	0.88

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. Once stack test compliance has been attained, the flow rate history and alarm monitoring shall be confirmed 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. Once stack test compliance has been attained, the flow rate history and alarm monitoring shall be confirmed 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) 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.

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) within 180 days of permit issuance, 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.

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 Tank (V-3011)	VOC	0.01	0.05
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

SN-#	Description	Pollutant	lb/hr	tpy
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 Halogens	0.01 0.20 0.03	0.05 0.90 0.13
BT-12	Tail Brine Line Vent	NH_3^{NCAC} Cl_2^{HAP}, or Halogens	0.01 0.01	0.05 0.05

SN-#	Description	Pollutant	lb/hr	tpy
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.

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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 shall be installed within 180 days of permit issuance, and shall be operated in accordance with the manufacturer's specifications and recommendations for use.

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 within 180 days of permit issuance. All particulate measured shall be assumed to be PM_{10}. All tests at SN-DM-02 shall be repeated every five years, except SO_2 testing, which shall be performed every two years.

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 waterflows 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. The first calculation shall be performed 180 days after permit issuance.

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. The first calculation shall be performed 180 days after permit issuance.

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.

Pit Incinerator Process

The "pit incinerator" is used to burn wood pallets, empty cardboard drums, cardboard boxes, wood packing crates, paper bags, office waste, and non-process scrap lumber.

Specific Conditions

219. 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-04	Pit Incinerator	PM_{10} SO_2 NO_X	9.26 0.63 1.01	9.26 0.63 1.01

220. 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-04	Pit Incinerator	PM	9.26	9.26

221. 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-MS-04.

222. 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 pit incinerator (SN-MS-04) shall be restricted to only burn the following materials: wood pallets, wood construction debris, uncontaminated packaging waste (such as shredded wood or fiber drums), and office trash consisting mainly of paper, but including can liners and trash bags. The burning of any other materials shall be a violation of this permit. Specifically, the permittee is forbidden to burn plastics (other than incidental office trash bags and liners), hazardous waste, process wastes, and liquid materials.

223. 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 material quantity and type shall be maintained on site and made available to Department personnel upon request. Annual combined throughput, based upon a 12-month rolling total, shall not exceed 500 tons per year.

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	50.90	0.35

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]	2.50	0.02
		Hexane[HAP]	1.50	0.01
		Toluene[HAP]	12.70	0.09
		Xylene[HAP]	12.70	0.09

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 100,000 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

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.

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.

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 shall calculate all fugitive emissions for each process area once 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.

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*.

15. Pursuant to 19.702 of the Arkansas State Implementation Plan for Air Pollution Control (Regulation 19), 40 CFR Part 52 Subpart E, unless superseded by a more stringent federal requirement, for any stack test required by this permit, the facility may submit surrogate stack test results and operating parameters for the first required event.

    This option is limited to those testing events which have been performed within 6 months prior to permit issuance, and must include a compliant result for each affected pollutant and sufficient parameter information (such as scrubbing liquid flow, scrubbing liquid pH, condenser exit temperature, input stream compositions, etc.) to establish ongoing operational set points until the next scheduled test. The alternative test results and parameters must be submitted at least 30 days prior to the first test deadline, and must be approved by the Department. Written approval or rejection shall be issued by the Department within 30 days of receipt. If no notice is received from the Department, after 30 days, default approval may be assumed.

16. 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, within 180 days of permit issuance, the permittee shall remove all residual sludge from previous EDB sources SN-ED-01 and SN-ED-03 (the EDB production unit is out of operation).

17. 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, for any modifications subsequent to the issuance of Air Permit 762-AOP-R0, the permittee shall be allowed to operate under the existing permit's conditions and limits for the new or modified source until a modified permit is issued. After stack testing is completed, the Department will review the test data to verify the

accuracy of existing limits and conditions, and subsequently set the terms for any modifications to those limits and conditions, where applicable.

The permittee must specifically request that this allowance be applied during the review process of each new modification. This allowance shall not be applicable for sources or pollutants subject to federal NSPS, NESHAP, or PSD standards.

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.

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.

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:

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

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Source (SN)	Regulation	Description
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 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

Source (SN)	Regulation	Description
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		
TB-32	40 CFR Part 63, Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
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
21-01 21-02	40 CFR Part 61, Subpart A	National Emission Standards for Hazardous Air Pollutants, General Provisions

Source (SN)	Regulation	Description
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:

    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:

    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.

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.

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.

SECTION VII: *DE MINIMIS* EMISSION SOURCES

Pursuant to §26.3(d) of Regulation 26, the following sources are below the *de minimis* emission levels. Insignificant and trivial activities will be allowable after approval and federal register notice publication of a final list as part of the operating air permit program. Any activity for which a state or federal applicable requirement applies is not *de mimimis*, even if this activity meets the criteria of §3(d) of Regulation 26 or is listed below. *De minimis* emission determinations rely upon the information submitted by the permittee in an application dated July 10, 1996.

INSIGNIFICANT SOURCE				
SN	**Description**	**Pollutant**	**Estimated Losses**	
			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.		
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_{10} SO_2 VOC CO NO_X	0.014 2.1E-4 0.159 0.056 0.28	0.014 9.2E-4 0.75 0.25 1.23
AD-32	F-1565; Natural Gas Heater 4.62MM Btu/hr	PM_{10} SO_2 VOC CO NO_X	0.023 3.4E-4 0.024 0.090 0.45	0.098 1.5E-3 0.104 0.39 1.97
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-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.*	-	-
-	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.		
16-09	EBTBP Ambient Dust Collector SF9398	PM_{10}	0.1	0.3
16-30	Indirect-fired Gas Heater	PM_{10} SO_2 VOC CO NO_X	0.1 0.1 0.1 0.1 0.4	0.5 0.5 0.1 0.2 1.8
BT-02	Purchased Brine Surge Tank T-3017	VOC H_2S[NCAC]	0.01 0.01	0.05 0.05
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-10	Brine/Oil Separator Outlet 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} PM	0.06 0.06	0.23 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	-

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Pursuant to §26.3(d) of Regulation 26, the following emission units, operations, or activities have been determined by the Department to be below the deminimis emission levels. Activities included in this list are allowable under this permit and need not be specifically identified.

1. Natural gas-burning equipment with a design rate less than 1 million BTU per hour.

2. Combustion emissions from propulsion of mobile sources and emissions from refueling these sources unless regulated by Title II and required to obtain a permit under Title V of the federal Clean Air Act, as amended. This does not include emissions from any transportable units, such as temporary compressors or boilers. This does not include emissions from loading racks or fueling operations covered under any applicable federal requirements.

3. Air conditioning and heating units used for comfort that do not have applicable requirements under Title VI of the Act.

4. Ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing/industrial or commercial process.

5. Non-commercial food preparation or food preparation at restaurants, cafeterias, or caterers, etc.

6. Consumer use of office equipment and products, not including commercial printers or businesses primarily involved in photographic reproduction.

7. Janitorial services and consumer use of janitorial products.

8. Internal combustion engines used for landscaping purposes.

9. Laundry activities, except for dry-cleaning and steam boilers.

10. Bathroom/toilet emissions.

11. Emergency (backup) electrical generators at residential locations.

12. Tobacco smoking rooms and areas.

13. Blacksmith forges.

14. Maintenance of grounds or buildings, including: lawn care, weed control, pest control, and water washing activities.

15. Repair, up-keep, maintenance, or construction activities not related to the sources' primary business activity, and not otherwise triggering a permit modification. This may include, but is not limited to such activities as general repairs, cleaning, painting, welding, woodworking, plumbing, re-tarring roofs, installing insulation, paved/paving parking lots, miscellaneous solvent use, application of refractory, or insulation, brazing, soldering, the use of adhesives, grinding, and cutting.[1]

16. Surface-coating equipment during miscellaneous maintenance and construction activities. This activity specifically does not include any facility whose primary business activity is surface-coating or includes surface coating or products.

17. Portable electrical generators that can be "moved by hand" from one location to another.[2]

18. Hand-held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning, or machining wood, metal, or plastic.

19. Brazing or soldering equipment related to manufacturing activities that do not result in emission of HAPs.[3]

20. Air compressors and pneumatically operated equipment, including hand tools.

21. Batteries and battery charging stations, except at battery manufacturing plants.

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[1] Cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must get a permit.

[2] "Moved by hand" means that it can be moved by one person without assistance of any motorized or non-motorized vehicle, conveyance, or device.

[3] Brazing, soldering, and welding equipment, and cutting torches related to manufacturing and construction activities that emit HAP metals are more appropriate for treatment as insignificant activities based on size or production thresholds. Brazing , soldering, and welding equipment, and cutting torches related directly to plant maintenance and upkeep and repair or maintenance shop activities that emit HAP metals are treated as trivial and listed separately.

22. Storage tanks, vessels, and containers holding or storing liquid substances that do not contain any VOCs or HAPs.[4]

23. Containers of less than or equal to 5 gallons in capacity that do not emit any detectable VOCs or HAPs when closed. This includes filling, blending, or mixing of the contents of such containers by a retailer.

24. Storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease, animal fat, and non-volatile aqueous salt solutions, provided appropriate lids and covers are used and appropriate odor control is achieved.

25. Equipment used to mix and package soaps, vegetable oil, grease, animal fat, and non-volatile aqueous salt solution, provided appropriate lids and covers are used and appropriate odor control is achieved.

26. Drop hammers or presses for forging or metalworking.

27. Equipment used exclusively to slaughter animals, but not including other equipment at slaughter-houses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment.

28. Vents from continuous emission monitors and other analyzers.

29. Natural gas pressure regulator vents, excluding venting at oil and gas production facilities.

30. Hand-held applicator equipment for hot melt adhesives with no VOCs in the adhesive.

31. Equipment used for surface coating, painting, dipping, or spraying operations, containing less than 0.4 lb/gal VOCs, has no hexavalent chromium, and emits no more than 0.1 tpy of all other HAPs.

32. Lasers used only on metals and other materials which do not emit HAPs in the process.

33. Consumer use of paper trimmers/binders.

[4]Exemptions for storage tanks containing petroleum liquids or other volatile organic liquids are based on size and limits including storage tank capacity and vapor pressure of liquids stored and are not appropriate for this list.

34. Electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boiler delivering the steam.

35. Salt baths using non-volatile salts that do not result in emissions of any air pollutant covered by this regulation.

36. Laser trimmers using dust collection to prevent fugitive emissions.

37. Bench-scale laboratory equipment used for physical or chemical analysis.

38. Routine calibration and maintenance of laboratory equipment or other analytical instruments.

39. Equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis.

40. Hydraulic and hydrostatic testing equipment.

41. Environmental chambers not using hazardous air pollutant gases.

42. Shock chambers, humidity chambers and solar simulators.

43. Fugitive emissions related to movement of passenger vehicles, provided the emissions are not counted for applicability purposes and any required fugitive dust control plan or its equivalent is submitted.

44. Process water filtration systems and demineralizers.

45. Demineralized water tanks and demineralizer vents.

46. Boiler water treatment operations, not including cooling towers.

47. Emissions from storage or use of water treatment chemicals, except for hazardous air pollutants or pollutants listed under regulations promulgated pursuant to Section 112(r) of the Act, for use in cooling towers, drinking water systems, and boiler water/feed systems.

48. Oxygen scavenging (de-aeration) of water.

49. Ozone generators.

50. Fire suppression systems.

51. Emergency road flares.

52. Steam vents and safety relief valves.

53. Steam leaks.

54. Steam cleaning operations.

55. Steam and microwave sterilizers.

56. Site assessment work to characterize waste disposal or remediation sites.

57. Miscellaneous additions or upgrades of instrumentation.

58. Emissions from combustion controllers or combustion shutoff devices.

59. Use of products for the purpose of maintaining motor vehicles operated by the facility, not including air cleaning units or such vehicles (i.e. antifreeze, fuel additives).

60. Stacks or vents to prevent escape of sanitary sewer gases through the plumbing traps.

61. Emissions from equipment lubricating systems (i.e. oil mist), not including storage tanks, unless otherwise exempt.

62. Residential wood heaters, cookstoves, or fireplaces.

63. Barbecue equipment or outdoor fireplaces used in conjunction with any residential or recreational use.

64. Log wetting areas and log flumes.

65. Periodic use of pressurized air for cleanup.

66. Solid waste dumpsters.

67. Emissions of wet lime from lime mud tanks, lime mud washers, lime mud piles, lime mud filter and filtrate tanks, and lime mud slurry tanks.

68. Natural gas odoring activities unless the Department determines that a nuisance may occur.

69. Emissions from engine crankcase vents.

70. Storage tanks used for the temporary containment of materials resulting from an emergency reporting of an unanticipated release.

71. Equipment used exclusively to mill or grind coatings in roll grinding rebuilding, and molding compounds where all materials charged are in paste form.

72. Mixers, blenders, roll mills, or calenders for rubber or plastic for which no materials in powder form are added and in which no organic solvents, diluents, or thinners are used.

73. The storage, handling, and handling equipment for bark and wood residues not subject to fugitive dispersion offsite (this applies to equipment only).

74. Maintenance dredging of pulp and paper mill surface impoundments and ditches containing cellulosic and cellulosic derived biosolids and inorganic materials such as lime, ash, or sand.

75. Tall oil soap storage, skimming, and loading.

76. Water heaters used strictly for domestic (non-process) purposes.

77. Facility roads and parking areas, unless necessary to control offsite fugitive emissions.

78. Agricultural operations, including onsite grain storage.

SECTION VIII: GENERAL PROVISIONS

1. Pursuant to 40 C.F.R. 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 §26.7 of the Regulations of the Arkansas Operating Air Permit Program (Regulation 26), 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 §26.4 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 C.F.R. 70.6(a)(1)(ii) and §26.7 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 C.F.R. 70.6(a)(3)(ii)(A) and §26.7 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 §26.7 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 §26.7 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), §26.7 of Regulation #26, and §19.6 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 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 §26.7 of Regulation #26, nothing in this permit shall alter or affect the following:

    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.

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

Route To: **FELICIA INMAN**
Administration

AIR DIVISION

INVOICE REQUEST FORM

(9-96)

Facility Name & Address:
Albemarle Corporation-Magnolia South Plant
P.O. Box 729
Magnolia, AR
71754-0729

CSN: 14-0028 **Permit No**: 762-AOP-R0

Permit Description:

(e.g. A = AIR CODE, S=SIP, H=NESHAP, P=PSD, N=NSPS, T5= Title V)

Initial Fee Calculations:

Title V = **3**(18.08)(TPY each pollutant, except CO) - amount of last annual air permit fee

NOTE: Do Not double count HAPs and VOCs!!!
No greater than 4000 tpy per pollutant or less than $1000

= (18.08) x (4751.35*) - 58617 (last SIP permit fee paid) = $ 27,287.41

$27, 287 - 26, 954 (ALREADY PAID for first Title V Draft) = $ 333.00

*See attachment for tally of chargeable emissions.

Fee Amount: $ 333.00

Engineer: Lyndon Poole
Date: October 8, 2001

Albemarle South Permit Fee 762-AOP-R0	
Pollutant	**Chargeable Tons**
PM/PM_{10}	133.52
	0.00
SO_2	3306.68
VOC	627.67
	0.00
NO_X	442.55
	0.00
Chlorine[HAP]	14.25
	0.00
	0.00
	0.00
	0.00
Hydrogen Chloride[HAP]	10.11
	0.00
	0.00
	0.00
Methylene Chloride[HAP]	7.70
	0.00
	0.00
	0.00
	0.00
Ammonia[NCAC]	46.00
Bromine[NCAC]	86.65
HCFC-22[NCAC]	3.67
HFC-125[NCAC]	0.18
HFC-143a[NCAC]	0.18
	0.00
Hydrogen Bromide[NCAC]	65.58
Hydrogen Peroxide[NCAC]	5.75
Hydrogen Sulfide[NCAC]	0.81
	0.00
Sulfuric Acid[NCAC]	0.05
TOTAL tons	4751.35

Public Notice

Pursuant to the Arkansas Operating Air Permit Program (Regulation #26) Section 6(b), the Air Division of the Arkansas Department of Pollution Control and Ecology gives the following notice:

Albemarle Corporation owns and operates a chemical manufacturing facility approximately seven miles south of Magnolia, Arkansas. The facility produces bromine and bromine-related compounds in serveral different production areas. The facility is known as the South Plant, and is located on Highway 79 South, Magnolia, Arkansas, 71753.

The facility has submitted an application for an Operating Air Permit, in accordance with the requirements of Title V of the Clean Air Act. The Department is proposing a draft air permit to fulfill the requirements of Title V of the Act. This permitting action is a redraft of the original proposed permit issued by the Department on February 10, 1999. This proposed permit also seeks to incorporate limits and provisions of all approvable minor and de minimis permit modifications initiated by the facility since 1992.

The proposed permit will result in the following annual increases in permitted pollutant emission limits, as compared to existing Air Permit 762-AR-09: 76.99 tons, particulate matter less than or equal to 10 microns in diameter; 64.61, sulfur dioxide; 259.32, volatile organic compounds; and 20.16, carbon monoxide. Emission limits for oxides of nitrogen will decrease by 5.38 tons per year.

Albemarle South Plant is classified as a major stationary source as defined by 40 CFR 52.21, Prevention of Significant Deterioration of Air Quality (PSD). It 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).

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 Rhonda Sharp, Information Officer. Citizens desiring technical information concerning the application or permit should contact Lyndon Poole, Engineer. Both Rhonda Sharp and Lyndon Poole 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 Magnolia Public Library, 220 East Main, 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: Rhonda Sharp. 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

Randall Mathis
Director