ADEQ
ARKANSAS
Department of Environmental Quality

July 7, 2020

Via email to: clarice.hanusz@albemarle.com & First Class Mail

Clarice Hanusz, Environmental Specialist
Albemarle Corporation—South Plant
P.O. Box 729
Magnolia, AR 71754

Re: Notice of Final Permitting Decision; Permit No. 0762-AOP-R29

Dear Ms. Hanusz:

After considering the application, any public comments, and other applicable materials as required by APC&EC Reg. 8.211 and Ark. Code Ann. § 8-4-101 *et seq*., this notice of final permitting decision is provided for:

Albemarle Corporation—South Plant
Highway 79, Approximately 6 Miles South of Magnolia
Magnolia, AR 71753

Permit Number: 0762-AOP-R29

Permitting Decision: approval with permit conditions as set forth in final Permit No. 0762-AOP-R29

Accessing the Permitting Decision and Response to Comments, if any: https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/Air/0762-AOP-R29.pdf.

Accessing the Statement of Basis: https://www.adeq.state.ar.us/downloads/WebDatabases/PermitsOnline/Air/0762-AOP-R29-SOB.pdf.

The permitting decision is effective on the date stated in the attached Certificate of Service unless a Commission review has been properly requested under Arkansas Pollution Control & Ecology Commission's Administrative Procedures, Regulation No. 8, within thirty (30) days after service of this decision.

The applicant or permittee and any other person submitting public comments on the record may request an adjudicatory hearing and Commission review of the final permitting decisions as provided under Chapter Six of Regulation No. 8. Such a request shall be in the form and manner

required by Regulation 8.603, including filing a written Request for Hearing with the Commission secretary at 3800 Richards Rd, North Little Rock, Arkansas 72117. If you have any questions about filing the request, please call the Commission at 501-682-7890.

This permit is your authority to construct, operate, and maintain the equipment and control apparatus as set forth in your application initially received on 3/24/2020.

Sincerely,

William K. Montgomery
Associate Director
DEQ, Office of Air Quality

Enclosure: Certificate of Service
cc: Jjech@trinityconsultants.com

CERTIFICATE OF SERVICE

I, Cynthia Hook, hereby certify that the final permit decision notice has been mailed by first class mail to Albemarle Corporation—South Plant, P.O. Box 729, Magnolia, AR, 71754, on this 7th day of July, 2020.

Cynthia Hook, AA, Office of Air Quality

ADEQ
OPERATING
AIR PERMIT

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

Permit No. : 0762-AOP-R29

IS ISSUED TO:

Albemarle Corporation—South Plant
Highway 79, Approximately 6 Miles South of Magnolia
Magnolia, AR 71753
Columbia County
AFIN: 14-00028

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

October 17, 2016 AND October 16, 2021

THE PERMITTEE IS SUBJECT TO ALL LIMITS AND CONDITIONS CONTAINED HEREIN.

Signed:

William K. Montgomery
Associate Director
DEQ, Office of Air Quality

July 7, 2020
Date

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List of Acronyms and Abbreviations

Ark. Code Ann.	Arkansas Code Annotated
AFIN	ADEQ Facility Identification Number
C.F.R.	Code of Federal Regulations
CO	Carbon Monoxide
HAP	Hazardous Air Pollutant
lb/hr	Pound Per Hour
MVAC	Motor Vehicle Air Conditioner
No.	Number
NO_x	Nitrogen Oxide
PM	Particulate Matter
PM_{10}	Particulate Matter Smaller Than Ten Microns
SNAP	Significant New Alternatives Program (SNAP)
SO_2	Sulfur Dioxide
SSM	Startup, Shutdown, and Malfunction Plan
Tpy	Tons Per Year
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compound

SECTION I: FACILITY INFORMATION

PERMITTEE:	Albemarle Corporation—South Plant
AFIN:	14-00028
PERMIT NUMBER:	0762-AOP-R29
FACILITY ADDRESS:	Highway 79, Approximately 6 Miles South of Magnolia Magnolia, AR 71753
MAILING ADDRESS:	P.O. Box 729 Magnolia, AR 71754
COUNTY:	Columbia County
CONTACT NAME:	Clarice Hanusz
CONTACT POSITION:	Environmental Specialist
TELEPHONE NUMBER:	(870) 235-6291
REVIEWING ENGINEER:	Elliott Marshall
UTM North South (Y):	Zone 15: 3670978.66 m
UTM East West (X):	Zone 15: 479859.65 m

SECTION II: INTRODUCTION

Summary of Permit Activity

Albemarle Corporation – South Plant (AFIN: 14-00028) owns and operates a chemical manufacturing facility (P.O. Box 729) on Highway 79, approximately seven miles south of Magnolia, Arkansas 71753. This application was submitted as a minor modification, to allow permit flexibility to install up to two (2) temporary boilers (BH-03 and BH-04) provided the boilers have a heat input capacity of less than 100 MMBtu/hr (each). Permitted emission rates are not increasing; temporary boilers will be included in the current annual combined boiler emissions limit.

Process Description

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, zinc bromide, hydrogen bromide, alkyl amines, alkyl bromides, flame retardant materials, and other bromine-related by-products.

Regulations

The following table contains the regulations applicable to this permit.

Regulations
Arkansas Air Pollution Control Code, Regulation 18, effective March 14, 2016
Regulations of the Arkansas Plan of Implementation for Air Pollution Control, Regulation 19, effective October 10, 2019
Regulations of the Arkansas Operating Air Permit Program, Regulation 26, effective March 14, 2016
40 CFR Part 60, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*
40 CFR Part 60, Subpart JJJJ – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*.
40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*
40 CFR Part 61, Subpart M – *National Emission Standard for Asbestos*
40 CFR Part 63, Subpart A – *National Emission Standards for Hazardous Air Pollutants for Source Categories, General Provisions*
40 CFR Part 63, Subpart F – *National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry*

Regulations
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*
40 CFR Part 63, Subpart H – *National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks*
40 CFR Part 82, Subpart A – *Protection of Stratospheric Ozone, Production and Consumption Controls*
40 CFR Part 82, Subpart E – *Protection of Stratospheric Ozone, The Labeling of Products Using Ozone-Depleting Substances*
40 CFR Part 82, Subpart F – *Recycling and Emissions Reduction*
40 CFR Part 61, Subpart A – *National Emission Standards for Hazardous Air Pollutants, General Provisions*
40 CFR Part 61, Subpart FF – *National Emission Standards for Benzene Waste Operations*
40 CFR Part 61, Subpart V – *National Emission Standard for Equipment Leaks (Fugitive Emission Sources)*
40 CFR Part 63, Subpart JJ – *National Emission Standards for Wood Furniture Manufacturing Operations*
40 CFR Part 63, Subpart FFFF – *National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing*
40 CFR Part 63, Subpart EEEE – *National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)*
40 CFR Part 63, Subpart DDDDD – *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*
40 CFR Part 63, Subpart SS – National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process
40 CFR Part 60, Subpart Dc – *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units*

Emission Summary

The following table is a summary of emissions from the facility. This table, in itself, is not an enforceable condition of the permit.

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
Total Allowable Emissions		PM	37.6	127.5
		PM_{10}	35.1	116.5
		$PM_{2.5}$	See Note*	
		SO_2	12,814.6	3,295.4
		VOC	555.4	494.1
		CO	87.1	182.9
		NO_X	186.0	495.6
HAPs** HAP emissions are included in VOC rates, except HCl, Hydrazine, Cl_2, Methylene Chloride		Total HAP	N/A	105.26
		Benzene	6.93	18.09
		Br_2+Cl_2	1.60	0.10
		Cl_2	N/A	4.03
		Cl_2 or Halogens	N/A	0.62
		HCl	N/A	8.87
		Hydrazine	N/A	0.46
		Methanol	62.82	21.31
		Methyl Bromide	1.77	9.54
		Methylene Chloride	N/A	5.83
Air Contaminants ***		Acetone	N/A	0.40
		Ammonia	11.54	47.23
		Br_2	9.27	34.97
		Br_2+HBr	3.95	17.33
		BrCl	N/A	0.88
		H_2O_2	0.10	7.54
		H_2S	259.82	13.70
		H_2SO_4	0.07	0.32
		HBr	5.93	25.05
		Refrigerant	N/A	9.62
BR-01	#1 Bromine Tower Vent Scrubber C-3042	VOC	1.5	6.6
		Br_2	0.26	1.14
		Total HAP	N/A	0.26
		Cl_2	N/A	0.26
BR-04	#2 Bromine Tower Vent Scrubber C-3043	VOC	3.9	16.7
		Br_2	0.14	0.61
		Total HAP	N/A	0.13
		Cl_2	N/A	0.13

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
BR-08	Recycle HCl Storage Tank	VOC	0.3	1.3
		Total HAP	N/A	1.52
		Benzene	0.28	1.21
		HCl	N/A	0.31
BR-09	Recycle HBr Storage Tank, Vent Scrubber C-3036	Br_2	0.02	0.09
		HBr	0.02	0.09
BR-12	Bromine Area Scrubber C-3049	Br_2	0.30	1.31
		Total HAP	N/A	0.44
		Cl_2	N/A	0.44
BR-14	Br_2 Fugitive Emissions	VOC	0.5	2.2
		Br_2	1.39	6.09
		Total HAP	N/A	0.18
		Cl_2	N/A	0.18
BR-15	Caustic Drum *Primary Operating Scenario*	Br_2+Cl_2	1.60	0.10
		Total HAP	N/A	0.10
BR-15	Caustic Drum *Alternate Operating Scenario*	Br_2	1.60	0.10
		Total HAP	N/A	0.10
		Cl_2	N/A	0.10
SL-01	Gas Sweetening Process Flare *Primary Operating Scenario*	PM	0.1	0.1
		PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.1
		NO_X	0.1	0.1
		Total HAP	N/A	0.01
SL-01	Emergency Flaring of Brinefield Gas *Alternate Operating Scenario #1*	PM	3.7	0.1
		PM_{10}	3.7	0.1
		SO_2	12,066.0	36.0
		VOC	3.7	0.1
		CO	13.4	0.1
		NO_X	31.4	0.1
		Total HAP	N/A	0.01
SL-01	Emergency Flaring of Sweet Gas *Alternate Operating Scenario #2*	PM	2.2	0.2
		PM_{10}	2.2	0.2
		SO_2	5.6	0.3
		VOC	2.2	0.2
		CO	7.8	0.4
		NO_X	18.4	0.9
		Total HAP	N/A	0.01
SL-02	Sulfinol Storage Tank	VOC	0.2	0.6

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
SR-01	Tail Gas Incinerator *Primary Operating Scenario*	PM	0.1	0.4
		PM_{10}	0.1	0.4
		SO_2	727.0	3,184.0
		VOC	0.1	0.4
		CO	0.3	1.1
		NO_X	0.6	2.6
		Total HAP	N/A	0.01
SR-01	Tail Gas Pilot Flame Deviation (<1200°F) *Alternate Operating Scenario*	SO_2	242.6	2.9
		H_2S	257.4	3.1
SR-02	Sulfur Area Fugitives	SO_2	0.2	0.7
		VOC	0.7	2.0
		H_2S	0.30	1.31
		Total HAP	N/A	0.55
		Methanol	0.38	0.55
SR-03	Molten Sulfur Pit and Loadout	SO_2	0.5	1.8
		H_2S	0.22	0.96
CB-01	Raw Material Silo	PM	0.1	0.5
		PM_{10}	0.1	0.5
CB-04	Methanol Storage Tank	VOC	26.0	0.4
		Total HAP	N/A	0.40
		Methanol	26.00	0.40
CB-16	R-21 Vent Scrubber (North) *Primary Operating Scenario*	VOC	0.3	1.2
		Ammonia	1.00	1.10
		Br_2	0.10	0.44
		HBr	0.08	0.02
		Total HAP	N/A	1.19
		Hydrazine	N/A	0.01
		Methanol	0.07	0.30
		Methyl Bromide	0.20	0.88
CB-17	CCF Fugitive Emissions	VOC	1.2	5.1
		Br_2+HBr	0.37	1.63
		Total HAP	N/A	3.88
		Hydrazine	N/A	0.02
		Methanol	0.88	3.86
CB-18	Raw Material Baghouse	PM	0.1	0.5
		PM_{10}	0.1	0.5
		Total HAP	N/A	0.26
CB-21	Rundown Tanks	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-22a	Truck Loading #1	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
CB-22b	Truck Loading #2	Total HAP Hydrazine	N/A N/A	0.01 0.01
CB-23	Reactor Vent	Total HAP Hydrazine VOC Methanol	N/A N/A 5.0 4.98	0.56 0.01 0.6 0.55
AD-01	Olefins Storage Tank #1: T-1501	VOC	0.2	0.8
AD-02	Olefins Storage Tank #2: T-1503	VOC	0.2	0.8
AD-03	Alkyl Amines Storage Tank: T-1502	VOC	0.3	1.2
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03).	VOC	0.3	1.4
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03)	Br_2+HBr Total HAP HCl	0.05 N/A N/A	0.22 0.5 0.5
AD-07	Alkyl Amine Rundown Tank: T-1534A	VOC	0.1	0.3
AD-08	Alkyl Amines Rundown Tank: T-1534B	VOC	0.1	0.3
AD-09	Alkyl Amines Rundown Tank: T-1534C	VOC	0.1	0.3
AD-10	Alkyl Amines Storage Tank: T-1537	VOC	0.3	1.2
AD-11	Alkyl Amines Storage Tank: T-1535	VOC	0.3	1.2
AD-12	Alkyl Amines Storage Tank: T-1536	VOC	0.3	1.2
AD-13	Alkyl Amines Storage Tank: T-1538	VOC	0.3	1.2
AD-14	Alkyl Amines Storage Tank: T-1539	VOC	0.3	1.2
AD-15	Alkyl Amines Storage Tank: T-1540	VOC	0.3	1.2
AD-16	Dowtherm Furnace 3.55 MMBtu/hr Natural Gas-Fired	PM PM_{10} SO_2 VOC CO NO_x Total HAP	0.1 0.1 0.1 0.1 0.3 0.4 N/A	0.4 0.2 0.1 0.1 1.4 1.6 0.03

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
AD-17	Alkyl Amines Blend Tank: D2427-A	VOC	0.3	1.2
AD-18	Sodium Bromide Brine for Recycle: T-1409	VOC	0.3	1.2
AD-20	Olefins Storage Tank: T-1405A	VOC	0.2	0.8
AD-21	Olefins Storage Tank: T-1405B	VOC	3.5	15.1
AD-23	Alkyl Amines Storage Tanks: T-1408A, B	VOC	0.1	0.2
AD-24	Product Storage: Alkyl Amines: T-1542	VOC	0.3	1.2
AD-25	Product Storage: Alkyl Amines: T-1543	VOC	0.3	1.2
AD-26	ADMA Flare *Alkyl Amines Scenario Emergency Flaring Events*	PM PM_{10} SO_2 VOC CO NO_X Br_2 Total HAP	0.2 0.2 0.1 0.7 0.1 0.4 0.02 N/A	0.1 0.1 0.2 0.2 0.2 0.2 0.01 0.01
AD-26	ADMA Flare *Alkyl Amines Scenario Non-Emergency Flaring Events*	PM PM_{10} SO_2 VOC CO NO_x Total HAP	0.8 0.8 0.1 48.5 18.9 3.5 N/A	0.1 0.1 0.1 0.6 0.3 0.1 0.01
AD-26	ADMA Flare *Alternate Operating Scenario NC-24 Production Emergency Flaring*	PM PM_{10} SO_2 VOC CO NO_x Total HAP	0.8 0.8 0.1 48.5 18.9 3.5 N/A	0.1 0.1 0.1 0.6 0.3 0.1 0.01
AD-27	Recycle Brine Storage Tank: T-1407	VOC	0.3	1.2
AD-28	Stripped Recycle Brine Storage Tank:T-1541	VOC	0.1	0.4
AD-29	Stripped Recycle Brine Tank: T-1544	VOC	0.1	0.4

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
AD-32	Direct Natural Gas-Fired Heater 4.62 MMBtu/hr	PM	0.1	0.2
		PM_{10}	0.1	0.2
		SO_2	0.1	0.1
		VOC	0.1	0.2
		CO	0.4	1.7
		NO_x	0.5	2.0
		Total HAP	N/A	0.01
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM	0.3	1.0
		PM_{10}	0.3	1.0
		SO_2	0.2	0.7
		VOC	1.3	5.4
		CO	0.1	0.3
		NO_x	0.7	3.1
		Br_2	0.03	0.14
		Total HAP	N/A	0.01
AD-36	Fugitive Emissions, Including Product Loading	VOC	4.5	17.6
		Br_2	0.30	1.31
		HBr	1.41	6.16
		Total HAP	N/A	0.16
		Hydrazine	N/A	0.01
AD-37	ADMA Condensate Collection Tank	VOC	0.1	0.2
AD-39	ADMA Brine Load Out	VOC	0.1	0.4
AD-40	Mixed ADMA Final Product Storage Tank, T-9965	VOC	0.3	1.2
AD-41	Mixed ADMA Final Product Storage Tanks, T-1408A and T-1408B	VOC	0.6	2.3
DE-01	ADMA Brine Storage Tank	VOC	0.5	2.1
TB-11	ADMA Brine Storage Tank	VOC	0.1	0.4
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	VOC	1.2	5.3
		Total HAP	N/A	1.1
		Methylene Chloride	N/A	1.1
AB-16	Alkyl Bromide Fugitive Emissions	VOC	7.2	31.5
		HBr	0.02	0.08
		Total HAP	N/A	1.75
		HCl	N/A	0.48
		Methylene Chloride	N/A	1.27
AB-18	Alkyl Bromide Waste Water	VOC	1.5	6.3
		Total HAP	N/A	1.49
		Methylene Chloride	N/A	1.49

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
DB-01	Vent Scrubber	VOC	0.8	3.5
		Br_2+HBr	0.44	1.93
		Total HAP	N/A	0.44
		HCl	N/A	0.44
DB-02	Raw Material Storage Tank	VOC	0.1	0.5
DB-04	Product Dryer Filter	PM	1.8	7.9
		PM_{10}	1.8	7.9
		SO_2	0.2	0.7
		VOC	1.0	4.2
		CO	3.6	15.8
		NO_x	1.6	7.0
		Br_2+HBr	1.67	7.32
		Total HAP	N/A	0.02
DB-05	Product Vent Filter Silo Baghouse	PM	0.3	1.3
		PM_{10}	0.3	1.3
DB-06	Product Vent Filter Silo Baghouse	PM	0.3	1.3
		PM_{10}	0.3	1.3
DB-07	Raw Material Storage Tank	VOC	0.1	0.5
		Total HAP	N/A	0.50
		HCl	N/A	0.50
DB-08	Product Vent Filter	PM	1.1	4.8
		PM_{10}	1.1	4.8
DB-16	NC-12 Fugitive Emissions	VOC	1.5	5.8
		Br_2	1.07	4.30
		HBr	1.39	6.08
DB-17	Back-up Water Scrubber	Br_2+HBr	0.10	0.44
DB-18	Receiving Baghouse	PM	0.3	1.4
		PM_{10}	0.3	1.4
DB-19	Product Dryer Scrubber	Emissions from this unit are accounted for at DB-04		
DB-20	DPE Storage Tank, D-2515 *During NC-15 Production Alt. Op Scenario*	VOC	0.9	4.0
DB-22	NC-12 Central Vacuum System	PM	0.1	0.2
		PM_{10}	0.1	0.2
TB-01	ADMA Storage Tank	VOC	0.3	1.2
15-02	Process Scrubber	Br_2	0.10	0.44
		HBr	0.10	0.44

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
15-12	NC-15 Area Scrubber	PM	3.1	13.6
		PM_{10}	3.1	13.6
		SO_2	0.1	0.5
		VOC	2.2	9.7
		CO	0.4	1.5
		NO_x	0.4	1.7
		Br_2+HBr	1.32	5.79
		Total HAP	N/A	0.02
15-13	Raw Material Weigh Tanks D-9965, D-9966	VOC	0.8	3.5
15-14A	Natural Gas Process Heater 2.15 MMBtu/hr	PM	0.1	0.1
		PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.1	0.1
		CO	0.2	0.8
		NO_x	0.3	1.0
		Total HAP	N/A	0.02
15-14B	Natural Gas Process Heater 2.15 MMBtu/hr	PM	0.1	0.1
		PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.1	0.1
		CO	0.2	0.8
		NO_x	0.3	1.0
		Total HAP	N/A	0.02
15-15	Fugitive Emissions	VOC	1.0	4.4
		Br_2	1.13	4.95
		HBr	0.18	0.75
		Total HAP	N/A	0.09
		HCl	N/A	0.09
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM	1.2	5.3
		PM_{10}	1.2	5.3
15-17	Rail Car Vent	VOC	0.7	3.1
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	1.1	0.4
15-19	NC-15 Central Vacuum System	PM	0.1	0.2
		PM_{10}	0.1	0.2
15-20	DPE Byproduct/Heavy Organics Truck Loading	VOC	6.9	0.4

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
16-01	TBPA Production: Packed Scrubber	PM PM_{10} SO_2 Total HAP	0.1 0.1 0.5 N/A	0.5 0.5 2.2 0.44
16-02	TBPA Production: Off Gas Scrubber	SO_2 VOC Br_2	0.4 0.1 0.1	1.8 0.5 0.44
16-05	EBTBP Production: Packed Scrubber	VOC	0.1	0.5
16-06	EBTBP Production: Converter Scrubber	PM PM_{10} VOC	0.4 0.4 0.1	1.8 1.8 0.5
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM PM_{10}	0.3 0.3	1.4 1.4
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM PM_{10}	0.3 0.3	1.4 1.4
16-10	Product Transfer and Storage Fabric Filter	PM PM_{10} SO_2	0.5 0.5 0.1	2.2 2.2 0.5
16-12	TBPA Weigh Hopper Filter	PM PM_{10}	0.1 0.1	0.5 0.5
16-13	TBPA Production: Vacuum Pump	SO_2	0.1	0.5
16-14	Ethylene Diamine Storage Tank	VOC	0.1	0.1
16-15	Propionic Acid Storage Tank	VOC	0.1	0.1
16-16	TBPA Neutralization Tank	SO_2	0.1	0.5
16-17	Ethylene Glycol Tank	VOC Total HAP	0.1 N/A	0.1 0.09
16-18	Vent Gas Oxidizer 6.47 MMBtu/hr	PM PM_{10} SO_2 VOC CO NO_x Total HAP	0.1 0.1 0.1 0.7 0.9 0.7 N/A	0.3 0.3 0.4 2.9 3.8 2.8 2.28
16-19	Charge Hopper Vent	PM PM_{10} SO_2	0.3 0.3 0.1	1.4 1.4 0.5

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
16-20	Heat Exchange Heater 4.4 MMBTU/hr	PM PM_{10} SO_2 VOC CO NO_x Total HAP	0.1 0.1 0.1 0.1 0.4 0.5 N/A	0.2 0.2 0.1 0.2 1.7 2.0 0.04
16-21	Product Storage Hopper	PM PM_{10} VOC Total HAP	0.2 0.2 0.4 N/A	0.9 0.9 1.8 1.23
16-22	By-Product Powder Packaging	PM PM_{10} VOC Total HAP	0.1 0.1 0.1 N/A	0.1 0.1 0.1 0.04
16-23	NC-16 Operation: Fugitive Emissions	SO_2 VOC Br_2 H_2SO_4 Total HAP	0.9 6.4 0.62 0.05 N/A	3.9 27.8 2.72 0.22 3.38
16-24	Raw Material Unloading, Brinks (Limited Hours of Operation)	SO_2	1.8	1.6
16-28	TBPA Neutralization Tank	SO_2	0.1	0.5
16-29	Packaging Vent	PM PM_{10} SO_2	0.3 0.3 0.1	1.4 1.4 0.5
16-30	Indirect Fired Heater 1.2 MMBtu/hr	PM PM_{10} SO_2 VOC CO NO_x Total HAP	0.1 0.1 0.1 0.1 0.1 0.2 N/A	0.1 0.1 0.1 0.1 0.5 0.6 0.01
16-31	Molten Phthalic Anhydride Storage Tank	VOC Total HAP	3.9 N/A	0.8 0.8
16-33	Molten Sulfur Tank T-9365	SO_2 H_2S	0.2 0.10	0.9 0.43

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
BH-01	#1 Boiler 340 MMBtu/hr	PM	3.4	-
		PM_{10}	2.6	-
		SO_2	-	-
		VOC	1.9	-
		CO	13.6	-
		NO_x	47.6	-
BH-02	#2 Boiler 340 MMBtu/hr	PM	3.4	-
		PM_{10}	2.6	-
		SO_2	-	-
		VOC	1.9	-
		CO	13.6	-
		NO_x	47.6	-
BH-03	Rental Boiler #1 ≤100 MMBtu/hr	PM	0.8	-
		PM_{10}	0.8	-
		SO_2	-	-
		VOC	0.6	-
		CO	3.7	-
		NO_x	3.7	-
BH-04	Rental Boiler #2 ≤100 MMBtu/hr	PM	0.8	-
		PM_{10}	0.8	-
		SO_2	-	-
		VOC	0.6	-
		CO	3.7	-
		NO_x	3.7	-
BH-01 BH-02 BH-03 BH-04	Combined Boiler Emissions	PM	-	29.8
		PM_{10}	-	22.7
		SO_2	5.6	24.6
		VOC	-	16.4
		CO	-	119.2
		NO_x	-	417
		Total HAP	N/A	3.82
21-01	Emission Control: Vent Gas Incinerator (FL-3671) (CD-21-01) 5.02 MMBtu/hr	PM	0.1	0.5
		PM_{10}	0.1	0.5
		SO_2	0.1	0.1
		VOC	1.8	5.3
		CO	5.0	21.9
		NO_x	0.5	2.2
		Total HAP	N/A	6.88
		Benzene	1.71	5.24
		HCl	N/A	1.54

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
21-02	NC-21 Fugitive Emissions	VOC	4.0	17.2
		Total HAP	N/A	9.10
		Benzene	1.37	6.02
		HCl	N/A	0.83
		Methanol	0.34	1.50
21-03	Wastewater Effluent	VOC	0.1	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
21-04	HCl Loading Operation (Option #2)	VOC	2.2	1
		Total HAP	N/A	1.29
		Benzene	2.16	0.95
		HCl	N/A	0.34
TB-04	Product Baghouse	PM	0.9	4.0
		PM_{10}	0.9	4.0
		VOC	0.3	1.0
TB-05	Pneumatic Vacuum Convey System	PM	0.5	2.0
		PM_{10}	0.5	2.0
TB-08	Dust Collector Baghouse	PM	0.3	1.4
		PM_{10}	0.3	1.4
TB-14	Bromine Scrubber *Primary Operating Scenario*	Br_2	0.10	0.44
TB-14	Bromine Scrubber *Alternate Operating Scenario Stabrome Production at NC-14*	Br_2	0.10	0.44
		BrCl	N/A	0.44
		Total HAP	N/A	0.44
		Cl_2	N/A	0.44
TB-25	Refrigerated Vent Condensers *NC-24 Production*	VOC	47.7	5.8
		Acetone	N/A	0.1
		HBr	0.1	0.1
		Total HAP	N/A	0.2
		HCl	N/A	0.1
TB-25	Refrigerated Vent Condensers *NC-23 MeBr Production*	VOC	0.5	2.0
		Total HAP	N/A	2.00
		Methanol	0.45	2.00
TB-29	NC-22 Fugitive Emissions *Primary Operating Scenario*	VOC	1.9	7.2
		Br_2	0.22	0.94
		HBr	0.36	1.54
		Total HAP	N/A	0.68
		HCl	N/A	0.24
		Methylene Chloride	N/A	0.10

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
TB-29	Fugitive Emissions *Alternate Operating Scenario* *Stabrom Production at NC-14*	Br_2 BrCl Total HAP Cl_2	0.10 N/A N/A N/A	0.44 0.44 0.44 0.44
TB-30	Fresh Sulfuric Acid Storage Tank *NC-23 MeBr Production*	H_2SO_4	0.01	0.05
TB-41	Carbon Bed Solvent Recovery Units	VOC Br_2 HBr Total HAP HCl Methylene Chloride	15.8 0.01 0.05 N/A 0.01 N/A	18.4 0.01 0.08 0.21 0.01 0.20
TB-42	HBr Solution Storage	VOC Br_2 HBr Total HAP HCl	0.1 0.01 0.18 N/A N/A	0.2 0.05 0.79 0.05 0.05
TB-43	Centrate Hold Up Drum	VOC	Routed to TB-41	
TB-44	Central Vacuum System	PM PM_{10}	0.2 0.2	0.5 0.5
TB-45	Hydrazine Hydrate Tote	Total HAP Hydrazine	N/A N/A	0.01 0.01
TB-47	Re-work Reactor (Carbon Adsorption)	VOC Total HAP Methylene Chloride	50.5 N/A N/A	0.4 0.10 0.10
TB-48	Re-work Hopper (Dust Collector, 99.9% efficient)	PM PM_{10}	0.2 0.2	0.2 0.2
TB-49	Bulk Bag Unloader	PM PM_{10}	0.3 0.3	0.1 0.1
23-01	NC-23 Fugitive Emissions *Primary Operating Scenario*	VOC Br_2 HBr Total HAP	1.2 0.22 0.11 N/A	5.0 0.97 0.49 0.13
23-01	NC-23 Fugitives *Alternate Operating Scenario* *NC-23 MeBr Production*	VOC Total HAP Methanol Methyl Bromide	2.4 N/A 0.97 0.97	10.3 8.5 4.25 4.25

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
23-02	Raw Material Unloading Baghouse	PM	0.2	0.9
		PM_{10}	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-03	Raw Material Scrubber *Primary Operating Scenario*	VOC	0.4	1.6
		HBr	0.35	1.5
		Total HAP	N/A	0.88
23-03	Raw Material Scrubber *Alternate Operating Scenario NC-23 MeBr Production*	VOC	27.4	1.7
		Total HAP	N/A	1.68
		Methanol	27.37	1.68
23-04	By-product Loading	VOC	0.5	2.0
23-05	Vent Absorber	VOC	2.9	12.7
		Total HAP	N/A	1.46
23-05	Vent Absorber *NC-23 MeBr Production Scenario*	VOC	1.6	7.0
		Total HAP	N/A	5.80
		Methanol	0.40	1.80
		Methyl Bromide	0.90	4.00
23-06 23-07 23-08	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM	0.6	2.7
		PM_{10}	0.3	1.4
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-09	Product Packaging Baghouse	PM	0.2	0.9
		PM_{10}	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-10	Product Packaging Dust Collection	PM	0.2	0.9
		PM_{10}	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*
23-11A 23-11B	Product Loading Baghouse Product Loading (Railcar)	PM	0.2	0.9
		PM_{10}	0.1	0.5
		VOC	3.8*	16.6*
		HBr	0.23*	0.97*
		Total HAP	N/A	1.32*

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
23-12A 23-12B 23-12A 23-12B	Product Loading Baghouse Product Loading (Truck)	PM PM_{10} VOC HBr Total HAP	0.2 0.1 3.8* 0.23* N/A	0.9 0.5 16.6* 0.97* 1.32*
23-13	Floor Vacuum Baghouse	PM PM_{10} VOC HBr Total HAP	0.2 0.1 3.8* 0.23* N/A	0.9 0.5 16.6* 0.97* 1.32*
23-15	Phenol Storage Tank (6,500 gal)	Emissions routed to SN-23-05		
23-16	Spent Sulfuric Acid Storage Tank *NC-23 MeBr Production*	VOC H_2SO_4 Total HAP Methanol	0.1 0.01 N/A 0.10	0.1 0.05 0.1 0.10
23-17	Refrigerant Water Storage Tank *NC-23 MeBr Production*	VOC Total HAP	0.1 N/A	0.1 0.01
23-18	Refrigerant Water Storage Tank *NC-23 MeBr Production*	VOC Total HAP	0.1 N/A	0.1 0.01
BT-01	Feed Brine Oil Separator/Surge Tank (V-3011)	VOC H_2S	0.1 0.14	0.1 0.61
BT-11	Neutralization Tank (T-3110)	VOC Ammonia H_2S Total HAP Cl_2 or Halogens	0.1 0.2 0.01 N/A N/A	0.1 0.9 0.05 0.13 0.13
BT-12	Tail Brine Line Vent	VOC Ammonia Cl_2 or Halogens	0.1 0.01 N/A	0.1 0.05 0.05
BT-13	Tail Brine Tank (T-3101)	VOC Ammonia H_2S Total HAP Cl_2 or Halogens	0.1 0.02 0.01 N/A N/A	0.1 0.09 0.05 0.05 0.05
BT-16	Brinefield Oil/Water Separator	VOC	30.0	1.8
	(T-7001)	H_2S	0.01	0.05
BT-17	Brinefield Oil Storage Tank (T-7002)	VOC H_2S	16.4 0.01	1.7 0.05

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
BT-21	Five Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122, Y-3123, Y-3124)	PM	4.2	18.1
		PM_{10}	4.2	18.1
		VOC	3.4	14.8
		Ammonia	10.23	44.7
		Br_2	0.62	2.72
		HBr	0.93	4.07
		Total HAP	N/A	1.36
		Cl_2	N/A	2.04
		HCl	N/A	1.36
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	VOC	0.1	0.1
		H_2S	0.02	0.09
		Ammonia	0.02	0.09
		Total HAP	N/A	0.09
		Cl_2 or Halogens	N/A	0.09
BT-23	Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl_2 or Halogens	N/A	0.05
BT-24	Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl_2 or Halogens	N/A	0.05
BT-25	DRT Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl_2 or Halogens	N/A	0.05
BT-26	DRT Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl_2 or Halogens	N/A	0.05
BT-27	Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl_2 or Halogens	N/A	0.05
BT-28	Tail Brine Line Vent	VOC	0.1	0.1
		Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl_2 or Halogens	N/A	0.05
DM-01	Ethylene Glycol Tank	VOC	0.1	0.2
		Total HAP	N/A	0.11

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
DM-02	Thermal Oxidizer 1.12 MMBtu/hr	PM	0.5	2.3
		PM_{10}	0.5	2.3
		SO_2	6.0	26.3
		VOC	0.1	0.5
		CO	0.1	0.5
		NO_X	0.4	1.4
		Total HAP	N/A	0.01
DM-03	Hydrogen Peroxide Tank I	H_2O_2	N/A	3.55
DM-06	Hydrogen Peroxide Tank II	H_2O_2	N/A	3.55
DM-07	Fugitive Emissions	VOC	4.1	18.0
		H_2O_2	0.1	0.44
		Total HAP	N/A	0.88
MS-01	Extraneous Water System	VOC	6.0	26.3
		Total HAP	N/A	12.33
		Methanol	0.98	4.28
		Methyl Bromide	0.10	0.41
		Methylene Chloride	N/A	1.48
MS-02	Drying Bed	VOC	0.1	0.5
MS-03	French Drain Sump Bubble	VOC	0.3	1.4
		Br_2	0.10	0.44
		Total HAP	N/A	0.12
		Benzene	0.01	0.01
MS-05	Carpenter's Shop Fugitives	VOC	0.7	2.2
MS-06	South Landfill	SO_2	0.5	0.2
		VOC	7.0	2.4
		Total HAP	N/A	1.7
MS-07	Gasoline Storage Tank	VOC	47.7	1.0
		Total HAP	N/A	0.06
		Benzene	0.25	0.01
MS-08-01	Fire Pump #1 CI Emergency Engine 208 hp	PM	0.5	0.2
		PM_{10}	0.5	0.2
		SO_2	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO_X	6.5	1.7
		Total HAP	N/A	0.01
		Benzene	0.01	0.01

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
MS-08-02	Fire Pump #2 CI Emergency Engine 208 hp	PM	0.5	0.2
		PM_{10}	0.5	0.2
		SO_2	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO_X	6.5	1.7
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-08-03	#1 Water Well (Potable Water Backup) CI Emergency Engine 235 hp	PM	0.6	0.2
		PM_{10}	0.6	0.2
		SO_2	0.5	0.2
		VOC	0.6	0.2
		CO	1.6	0.4
		NO_X	7.3	1.9
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-08-04	#4 Outfall Backup SI Emergency Engine 13.4 hp	PM	0.1	0.1
		PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.4	0.1
		CO	0.7	0.2
		NO_X	0.8	0.2
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01
MS-08-05	Phone/Admin Backup #1 SI Emergency Engine 26.8 hp	PM	0.1	0.1
		PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.7	0.2
		CO	1.4	0.4
		NO_X	1.6	0.4
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
MS-08-06	Security Backup SI Emergency Engine 50.0 hp	PM	0.1	0.1
		PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.8	0.2
		CO	1.6	0.4
		NO_X	1.9	0.5
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01
MS-08-07	Fire Pump #3 CI Emergency Engine 375 hp	PM	0.9	0.3
		PM_{10}	0.9	0.3
		SO_2	0.8	0.2
		VOC	1.0	0.3
		CO	2.6	0.7
		NO_X	11.7	3.0
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-08-08	Phone/Admin Backup #2 SI Emergency Engine 82 hp	PM	0.1	0.1
		PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	1.9	0.1
		CO	2.8	0.2
		NO_X	1.9	0.1
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
		Methanol	0.01	0.01
		Methylene Chloride	N/A	0.01
MS-08-09	Bromine Caustic Scrubber Pump CI Emergency Engine 56 hp	PM	0.2	0.1
		PM_{10}	0.2	0.1
		SO_2	0.2	0.1
		VOC	0.2	0.1
		CO	0.4	0.1
		NO_X	1.8	0.5
		Total HAP	N/A	0.01
		Benzene	0.01	0.01
MS-12	Plantwide Fugitive Refrigerant Emissions	VOC	14.2	9.7
		Non-VOC/Non-HAP	N/A	9.62
		Refrigerant		

EMISSION SUMMARY				
Source Number	Description	Pollutant	Emission Rates	
			lb/hr	tpy
24-01	Wash Column *Primary Operating Scenario*	VOC	48.5	21.4
		Acetone	N/A	0.1
		HBr	0.1	0.5
		Total HAP	N/A	0.6
		HCl	N/A	0.5
24-01	Wash Column Alternate Operating Scenario	VOC	48.5	0.6
		Acetone	N/A	0.1
		HBr	0.1	0.5
		Total HAP	N/A	0.5
		HCl	N/A	0.5
24-02	NC-24 Fugitives	VOC	1.2	5.1
		Acetone	N/A	0.1
		HBr	0.1	0.4
		Total HAP	N/A	0.9
		HCl	N/A	0.2
33-01	BRU Scrubber	PM	1.9	6.5
		PM_{10}	1.9	6.5
		SO_2	0.1	0.4
		VOC	5.2	22.5
		CO	1.7	7.3
		NO_X	8.8	38.1
		Br_2	1.00	4.40
		H_2S	1.60	7.00
		HBr	0.10	0.40
		Total HAP	N/A	16.72
		Benzene	1.04	4.54
		HCl	N/A	0.88
		Hydrazine	N/A	0.35
		Methylene Chloride	N/A	0.05
33-02	BRU Fugitives	VOC	1.2	5.2
		Br_2	0.01	0.03
		HBr	0.02	0.09
		Total HAP	N/A	0.05
		Benzene	0.01	0.01
33-03	Dust Collection Filter (Bulk Bag Feeder System)	PM	0.1	0.5
		PM_{10}	0.1	0.5
33-04	Hydrazine Hydrate Tote	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01

*$PM_{2.5}$ limits are source specific, if required. Not all sources have $PM_{2.5}$ limits.
**HAPs included in the VOC totals. Other HAPs are not included in any other totals unless specifically stated.

***Air Contaminants such as ammonia, acetone, and certain halogenated solvents are not VOCs or HAPs.

SECTION III: PERMIT HISTORY

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

Date	Permit Number	Purpose (summary)
3/10/00	762-AOP-R0	First operating air permit; incorporated limits and provisions for all minor modifications initiated by the facility from 1992 through August, 1999
06/28/73	164-A	Issued for Sulfinol Gas Sweetening unit.
12/04/74	273-A	Issued for Tail Gas Incinerator.
03/26/76	324-A	Issued for CBN production.
09/24/76	363-A	Issued for NC-9 Alkyl Amine Production plant.
09/23/77	424-A	Issued for production of Pyrochek (MG-3).
09/23/77	425-A	Issued for DECTP plant.
11/22/78	273-AR-1	Modification issued for addition of MDEA unit.
03/23/79	425-AR-1	Modification issued for production of DMCTP.
05/30/79	552-A	Issued for Calcium and Zinc Bromide production.
11/26/79	552-AR-1	Modification issued for Calcium Bromide.
07/24/81	353-AI	Issued for incineration of office waste.
08/11/81	708-A	Issued for NC-14 process.
04/05/82	424-AR-1	Issued for NC-12 process.
07/22/83	708-AR-1	Modification issued for Sodium Bromide production.
02/08/84	728-A	Issued for Bromine Chloride production.
02/23/86	762-A	Issued to Ethyl as the original consolidated air permit for the site.
05/26/87	832-A	Issued for NC-16 process.
09/15/87	846-A	Issued for NC-15 process.
03/17/88	762-AR-1	Modification issued for the DBDPO process.
11/01/88	762-AR-2	Modification issued for an expansion of the TBBPA (NC-14) process.
11/09/88	832-AR-1	Modification and expansion to the existing NC-16 process.
01/11/89	922-A	Issued to allow construction of the Alkyl Bromides process.
02/13/89	933-A	Issued to allow construction of the BRU. The unit later was brought under RCRA BIF regulations.
11/15/89	832-AR-2	Issued for the NC-17 process.
04/30/90	398-IR-1	Issued for the Air Curtain Incinerator.
05/10/91	922-AR-1	Modification issued for the Alkyl Bromides process. Consolidated 913-A and 922-A.
11/18/91	762-AR-3	Consolidated all existing air permits for the facility.
11/04/92	762-AR-4	Modification issued for NC-21 construction.
02/19/93	762-AR-5	Modification issued for NC-14.
09/10/93	762-AR-6	Modification issued for NC-16, and allowed construction of NC-17, NC-18.
12/08/93	762-AR-7	Issued to allow Feed Brine Tank construction.
04/08/94	762-AR-8	Issued to allow DECTP and VGO construction.
01/26/96	762-AR-9	Issued to resolve 762-AR-8 appeal.
3/10/00	762-AOP-R0	First operating air permit; incorporated limits and provisions for all minor modifications initiated by the facility from 1992 through August, 1999

The following table summarizes the changes made in Permit No. 762-AOP-R0.

Change	Type of change	Application date
NC-14, 95ND141/ Stabrom 909 - New scenario increases bromine and chlorine each by 0.88 tons per year.	Minor modification	5/1/00
Alkyl Amines Area, Alcohol addition system - A-3 insignificant storage tank and various instrumentation were added to insignificant list.	Administrative Amendment (Insignificant source)	5/25/00
NC-12, New heated air blower (SN-DB-04) & Backup scrubber (SN-DB-17) are permitted at Decabrom unit. PM/PM_{10} increases by 5.3 tpy each. Br_2+HBr emissions from SN DB-04 increased by 2.4 tpy, and new HBr emissions from SN-DB-17 were 0.44 tpy.	Minor modification	6/9/00
NC-17, Specific Condition 151 error - A source was referenced in error.	Administrative Amendment	6/15/00
NC-17, Specific Condition 152 removal - Requirement was removed to maintain minimum acid strength for SO_x scrubber SN-16-13. This requirement didn't make sense because lower acid strength would only allow better removal. A scrubber flow requirements are already in place as a compliance mechanism.	Administrative Amendment	6/15/00
Boilers, Specific Condition 170 - Testing requirement is removed PM/PM_{10} testing at #1 and #2 Boilers (SN-BH-01 & SN-BH-02) Testing was determined to be unnecessary due to reliability of the factors used.	Modification	7/13/00
DECTP, higher purity and emissions reroute - Purification (SN-DE-23) emissions are routed to the VGO (SN-DE-21). VGO HCl emissions increase by 25 tpy. This was determined to not be a MACT issue because no affected process units are constructed or reconstructed as part of the modification. Purification had the capacity for the higher purity product beforehand. Only the emissions vent header will be constructed which allows the emissions to be routed to the VGO. Other emissions from these two sources change slightly.	Modification	8/11/00
NC-23, emissions updates - SN-23-06, 07, and 08 emission bubble is changed to allow higher VOC and HBr emissions. Stack testing showed some occurrences of exceedances during multiple test runs. VOC is increased by 1.8 tpy and HBr is increased by 0.5 tpy. SN-23-03 emissions are lowered to reflect test data.	Modification	8/29/00
NC-12, increase Decabrom Product Dryer firing rate (SN-DB-04), increase DPO annual dry rate at storage tank (SN-DB-07), allow Decabrom usage of TBBPA packaging equipment - At SN-DB-04 combustion emissions increase slightly. At the same source PM/PM_{10} emissions increase by 2.1 tpy and VOC is increased by 2.1 tpy. At SN-DB-07, HCl emissions increase by 0.6 tpy.	Minor modification	10/4/00

Change	Type of change	Application date
NC-17, New xylene formulation - At SN-16-18, 21, 22, and 23 xylene emissions are changed to include the possibility of mixed xylene or ethylbenzene.	Minor modification	11/17/00
NC-14, Bleach production - This is an additional change related to the 5/1/00 minor mod. Bleach production is permitted at the NC-14 reactor under existing permit limits.	Minor modification	12/6/00
Clear Completion Fluids - VOC emissions at SN-CB-02 and 16 are reduced to reflect test data. Annual SN-CB-04 VOC emissions were reduced to reflect updated emission calculation methodology and annual methanol throughput limit.	Administrative amendment	1/9/01
NC-14, Tank (SN-TB-26) - This tank is allowed ethylene glycol storage use. During these periods emissions are insignificant.	Administrative amendment	2/21/01
NC-23, Solvent tote bin (SN-23-14) - VOC emissions increase by 1.53 tpy.	Minor modification	3/15/01
Bromine area -Caustic drum (SN-BR-15) and generator usage (SN-MS-08) - Caustic Drum is allowed as an alternate control for periods when Bromine Area Scrubber is down. Additional Cl2 and Br_2 emissions are 0.1 tpy each. Combustion emissions increase due to generator allowance with the greatest being NOx and CO at 19.0 tpy each.	Minor modification	5/15/01
NC-14, NaBr production - This scenario is permits NaBr production increasing Br_2 and HBr emissions by 0.44 tpy each at SN-TB-03.	Minor modification	6/11/01
NC-15, update bromine rate at SN-15-02 and alternative compliance with SN-15-02 and SN-15-12 bromine rates - HBr and Br_2 rates at SN-15-02 are increases by 0.3 tpy each.	Minor modification	7/24/01
NC-23, Phenol Storage Tank (SN-23-15) - Emissions are routed to existing Vent Absorber (SN-23-05). VOC and phenol emissions at SN-23-05 increase by 0.4 tpy.	Minor modification	12/13/01
Bleach storage tank - a 6,000 gallon bleach storage tank was listed as an insignificant activity. No regulated emissions result from this activity.	Administrative amendment	1/9/02
DECTP, Vent header - SN-DE-01, 02, 03, 09, and 25 combine to SN-DE-28. No changes result only emissions are bubbled into new source (SN-DE-28).	Minor modification	2/14/02
NC-21, HCl tank and gasoline through put - A new 10,000 gallon HCl tank is permitted with emissions routed to Incinerator (SN-21-01). Increased throughput at Gasoline Storage Tank (SN-MS-07) is permitted. Extra combustion emissions result at SN-21-01. VOC increases 0.7 tpy at SN-MS-07 along with various HAPs.	Minor modification	2/14/02
NC-14, Ethyl bromide production scenario - EtBr scenario is permitted under existing MeBr emission limits with some exceptions. Exceptions result in a VOC increase of 1.2 tpy and HBr increase of 0.1 tpy.	Minor modification	4/19/02

Change	Type of change	Application date
NC-17, Phthalic Anhydride (PA) Tank (SN-16-31) - PA tank is no longer vented to Scrubber (SN-16-02). PA emissions removed from the scrubber vent. PA and VOC emissions from SN-16-31 are listed at 0.8 tpy each resulting in a 0.4 tpy increase of the PA emissions.	Minor Modification	5/6/02
NC-23, Caustic Addition - The permittee is allowed to add caustic to recirculating solvent for corrosion prevention. This project allows 19.2 tpy of additional VOC. This project may or may not be related to other projects at NC-23 since the unit's construction in 1998 which have allowed total VOC increases of 39.3 tpy. Additional increases at this unit may trigger PSD review by causing total VOC increases exceeding 40 tpy depending on the relationship between past and future projects. Bromoform is increased by 1.9 tpy and acetaldehyde ins increased by 0.9 tpy.	Minor Modification	5/7/02
Boilers, H2S Monitoring Protocol - Specific Condition 169 regarding SN-BH-01 and 02 (Boilers) is adjusted to allow a decrease in monitoring frequency from every 15 minutes to every 6 hours. This is deemed appropriate after reviewing historical data from the past four quarterly reports of 15 minute data. The reports show low variance in emission rates and indicate little chance of exceeding permitted rates.	Modification	6/19/02
NC-17, Sulfuric Acid Storage Tank - T-9315 - This tank is now vented to the atmosphere and listed as an insignificant source (SN-16-32).	Administrative amendment	7/3/02
Molten Sulfur Tank - T9369	Administrative amendment	1/21/03
Brine Treatment Area - SN-BT-10 (T-292) is removed from Insignificant Activities list and listed as a permitted source to allow heat treatment of the tank contents.	Minor Modification	1/21/03
Alkyl Bromides Area - SN-AB-15 - Storage tank (T-83403B) is replaced with a new 11,130 gallon tank making it subject to NSPS Subpart Kb. Emissions are not affected as they remain routed to SN-AB-15.	Minor Modification	1/30/03
NC-12 Process Area - SN-DB-01 is changed out with a similar scrubber. No changes to emission rates or compliance mechanisms.	Minor Modification	2/21/03
Insignificant Activities List - Hot Oil Expansion Tank (T-9354) added for use at NC-16 & 17; Six Emergency use generators and fire pumps added; Hot oil Surge Tank (D-3490) added for use at NC-16 & 17; Molten Sulfur Pit and Loadout added for use at the Sulfur recovery area.	Administrative amendment	3/17/03
Sulfur Recovery Area (Gas Sweetening) - Sulfinol Storage Tank (SN-SL-02) is added. Emissions of VOC are increased by 0.6 tpy.	Minor Modification	3/17/03
NC-12 & NC-15 - Product Packaging is automated. Higher air flows at SN-15-16 increase PM/PM_{10} emissions by 2.1 tons per year.	Minor Modification	4/14/03

Change	Type of change	Application date
Backup Power Generators - A change is made to the original minor modification dated 5/15/01. A larger total capacity is allowed while firing of diesel fuel affecting pound per hour emission rates. Limits remain in effect for annual operation that limits generator usage below PSD thresholds. Annual emissions are unaffected.	Minor Modification	4/24/03
An alternative chemical reaction was identified and used to manufacture products in the clear completion fluids process. The alternative reaction replaces methanol with ammonia hydroxide resulting in ammonia emissions of 2.0 lb/hr and 2.2 tpy.	Minor Modification	02/18/2004
Albemarle has the option of installing a new distillation column to be used to recover benzene from the co-product HCl (HCl Loading Operation, SN-21-04) for reuse in the NC-21 process unit. Permitted emissions will increase by 0.8 lb/hr and 0.2 tpy, Benzene and VOC by 0.3 lb/hr and 0.1 tpy, HCl.	Minor Modification	07/13/04

Permit #762-AOP-R5 was issued on June 30, 2005. This was the first renewal issued to Albemarle under the Title V program. The following table lists the changes requested in the renewal application:

Process Name	Modification
Br_2 Production	1. Revised description for SN-BR-14 2. Revised description for SN-BR-13 (Insignificant Activity) 3. Added SN-ED-04 to Insignificant Activity List 4. Revised emission rates and description for SN-BR-05 (Insignificant Activity) 5. Added Hot Water Tank, B-3010 to Insignificant Activity List 6. Revised the equipment description in Specific Condition #9 7. Revised the annual Br_2 emission limit for SN-BR-09 from 0.06 tpy to 0.09 tpy
Sulfur Production	1. Deleted Specific Condition #20a, Sulfinol Storage Tank no longer subject to NSPS Subpart Kb. 2. Added SN-SL-03 (Sulfinol Storage Sump), SN-SL-04 (MDEA Storage Tank), and SN-SR-03 (Molten Sulfur Pit and Loadout) to Insignificant Activity List 3. Added 3-hour SO_2 limit for Emergency Flaring of Brinefield Gas at SN-SL-01 to Specific Conditions #17 and #18
Clear Completion Fluids	1. Added source numbers to the Ammonium Hydroxide (SN-CB-19) and the Formic Acid Bins (SN-CB-20) insignificant activities. 2. Removed Methanol Storage Tank (SN-CB-04) emission limits from Specific Condition #29 3. Rounded up VOC emissions limits in Specific Conditions #21 and #22 for consistency 4. Revised the HBr and Br_2 emission limits for Alternate Operating Scenario for R-21 Vent Scrubber (SN-CB02/16) to 0.22 tpy and 0.44 tpy, respectively

Process Name	Modification
DECTP Production	1. Deleted Specific Condition #47 because the tanks are no longer subject to NSPS Subpart Kb 2. For SN-DE-21, revised the annual emission limit for SO_2 to 30.7 tpy and add emission limits for Toluene (0.40 lb/hr and 1.76 tpy) and Ethyl Chloride (0.20 lb/hr and 0.88 tpy) 3. Added DECTP process sewers to the Insignificant Activity List 4. Revised the CO emission limits for SN-DE-17 (0.04 lb/hr and 0.18 tpy) and SN-DE-18 (0.07 lb/hr and 0.31 tpy)
Alkyl Amines Production	1. Deleted Specific Condition #59 because tanks are no longer subject to NSPS Subpart Kb and SN-AD-35 is not a storage vessel. 2. Added ethylene glycol emission limits (0.06 lb/hr and 0.30 tpy) to SN-AD-36 3. Revised emission limits for SN-AD-26 based on updated AP-42 natural gas combustion limits 4. Revised the HBr and Br_2 emission limits for SN-AD-05 5. Changed the source designation for SN-AD-37 to SN-AD-38 6. Added Liquid Hydrogen Pressurized Tank (SN-AD-31) to Insignificant Activity List
Alkyl Bromides Production	1. Deleted Specific Conditions #79 and #257 because tanks are no longer subject to NSPS Subpart Kb 2. Added SN-AB-17 and SN-AB-18 Insignificant Activities List
NC-12 Production	1. Deleted Specific Condition #85 because tank is no longer subject to NSPS Subpart Kb
NC-14 Processes	1. Deleted Specific Conditions #91 through #104 because TBBPA production has been discontinued 2. Revised emission limit for VOC, Methanol, Methyl bromide to 0.93 lb/hr and 4.07 tpy, each 3. Removed Brine Stripper Column Vent (SN-TB-20) from Insignificant Activity List because source has been removed from service 4. Revised source description for 6,000 gallon Bleach Storage Tank (Insignificant Activity)
NC-15 Production	1. Removed Toluene emission limits from SN-15-15 because process emitting Toluene has been discontinued 2. Revised CO emission rates for SN-15-12 to 0.15 lb/hr and 0.66 tpy 3. Revised VOC emission rates for SN-15-13 to 0.07 lb/hr and 0.31 tpy 4. Revised the PM/PM_{10} emission rates for SN-15-16 to 1.20 lb/hr and 5.30 tpy
NC-17 Production	1. Added Sulfuric Acid Storage Tank, T-9315 (SN-16-34) to Insignificant Activity List 2. Revised SO_2 emission limits for SN-16-10 to 0.10 lb/hr and 0.44 tpy 3. Revised PM/PM_{10} emission limits for SN-16-11 to 0.10 lb/hr and 0.44 tpy 4. Revised CO (0.86 lb/hr and 3.77 tpy) and PM/PM_{10} (0.05 lb/hr and 0.22 tpy) emission limits for SN-16-18 5. Revised PM/PM_{10} emission limits for SN-16-20 to 0.04 lb/hr and 0.18 tpy 6. Removed Phthalic Anhydride emission limits from SN-16-02 because the process generating the emissions has been discontinued
NC-21 Production	1. Added statement to Specific Condition #177 that a formal RATA is not required for the continuous parametric monitoring system on SN-21-01.
Boilers	1. Revised PM, PM_{10}, and VOC emission rates based on updated AP-42 natural gas combustion factors 2. Added Boiler Water Treatment Chemicals Storage Tank to Insignificant Activity List

Process Name	Modification
Brine Management	1. Updated the process description to reflect the construction of the tail brine tank system has been completed and operation approved. 2. Revised hourly VOC emission limit for SN-BT-17 to 16.40 based on updated estimate 3. Added existing Line Vents SN-BT-25 through SN-BT-28 4. Assigned source designation SN-BT-29 to the alternate operating scenario for Oil Separator Tank, T-292 and restored SN-BT-10 to Insignificant Activity List
DMTDA Production	1. Added Bleach Storage Tank (SN-DM-08) to Insignificant Activity List 2. Revised CO emission rates for SN-DM-02 to 0.10 lb/hr to 0.44 tpy
Maintenance and Support Operations	1. Revised insignificant activity Gasoline Storage Tank (SN-MS-10) source description to a capacity of 2,000 gallon 2. Revised VOC and HAP emission limits for the Extraneous Water Systems (SN-MS-01) 3. Revised SN-MS-03 source description to French Drain Sump Bubble 4. Revised emission rates for Cooling Towers (Insignificant Activity, SN-MS-11) 5. Included all fugitive refrigerant annual emissions under one plantwide bubble (Specific Condition #219) 6. Added the following sources to the Insignificant Activity List: Drinking Water Treatment and Distribution, Quality Control Laboratory, Pave Plant Roads and Parking Areas, Unpaved Plant Roads, Building Air Conditioning Systems, Filter Aid Tanks T-1306 and T-1307, Sulfuric Acid Tank 7. Added Plantwide Condition 28 requiring records demonstrating that all reciprocating internal combustion engines (RICE) are exempt from 40 CFR Part 63, Subpart ZZZZ.

In addition to the renewal application Albemarle submitted a request for a minor modification involving two flame retardant process units, NC-14 production unit and NC-22 production unit, permitted at the facility. The NC-22 production unit was never built, and portions of NC-14 have not operated for a few years. Albemarle proposed to use existing equipment at NC-14 along with some new equipment to produce NC-22 as an alternate operating scenario. Also, Albemarle requested the TBBPA alternate operating scenario for NC-14 be removed from the permit.

The new equipment installed included two carbon bed solvent recovery units (SN-TB-41), distillation columns, as well as several pumps, heat exchangers, other small process vessels, and new refrigeration unit. Five existing tanks that were purchased but never installed for the NC-22 process unit were taken from storage and placed into operation. All non-fugitive emissions from the new equipment are routed to the carbon bed solvent recovery units or the caustic scrubber (SN-TB-14). Due to the requested modifications, permitted PM/PM_{10} annual emissions decreased by 9.5 tpy, and permitted VOC and HAP annual emissions increased by 1.5 tpy and 0.63 tpy, respectively.

Permit #762-AOP-R6 was issued on September 7, 2005. Albemarle submitted requests for four separate modifications.

- The first modification addressed an increase in production at the NC-15 and NC-21 process units. Albemarle requested to install additional process equipment (several pumps, heat

exchangers, condensers, and a process tank) at the NC-15 and NC-21 production areas. None of the new equipment vents directly to the atmosphere, and it is controlled by either the Emission Control Vent Gas Incinerator (SN-21-01) or the NC-15 Area Scrubber (SN-15-12). No new point sources were associated with this modification, but the throughput to SN-21-01 and NC-15-12 increased by approximately 13.5 %.

- The second modification addressed installation of an alternate control device and an alternate operating scenario at SN-TB-41. Albemarle proposed to use an alternate, but equivalent, control device for the Carbon Bed/Tote Solvent Recovery Units (SN-TB-41). The alternate control device is a carbon adsorption system contained in portable totes (a.k.a. Carbon Totes). Unlike the existing carbon beds which will remain in a fixed position, the carbon totes are shipped off site for regeneration. With the appropriate recordkeeping, Albemarle may switch between the fixed carbon beds and the carbon tote adsorption systems.

Albemarle also proposed an alternate operating scenario for SN-TB-41. The alternate scenario addressed NC-22 production when only solvent storage and solvent drying is being performed. VOC vapors sent to the adsorption system while operating under the alternate scenario are less than 48 lb/day in comparison to 993 lbs/day during normal operation.

- The third modification addresses a request to use an alternate brominating raw material (ABRM1) for the NC-23 production unit. The use of ABRM1 resulted in a chloroethane production rate that is 20 percent of the current ethyl bromide production rate. No additional VOCs are emitted from the use of ABRM1. Therefore, permitted VOC emission limits do not need to be increased.

- The fourth modification addressed a request to increase the number of possible products at the NC-12 production unit. Other products can be produced by changing the raw material in the reaction. No additional equipment is required, and downstream collection and purification processes do not need to be modified because the additional products are similar to the existing.

- Due to the requested modifications, permitted emission limits increased for VOC and benzene by 0.4 tpy, CO by 5.3 tpy, HCl by 0.23 tpy, PM/PM_{10} by 0.9 tpy, and chloroethane by 1.81 tpy.

Permit #762-AOP-R7 was issued on April 12, 2006. Albemarle proposed production of a product designated as NC-24. The NC-24 production unit consists of pre-existing and proposed equipment. The pre-existing equipment is used as part of an alternate operating scenario for the production of NC-24, includes the Emergency Flare (SN-AD-26), the Wash Water Tank (SN-CB-10), and the Refrigerated Vent Condensers at (SN-TB-25). The equipment installed included a Wash Column (SN-24-01) as well as a number of distillation columns, flash drums, pumps, and heat exchangers which do not vent directly to the atmosphere. The estimated emission rates for the requested modification were 18.8 tpy VOC, 0.7 tpy HCl, 1.0 tpy HBr, 0.3 tpy Acetone, 0.2 tpy 1,2 Epoxybutane, 0.5 tpy Ethylene Glycol, 0.3 tpy CO, 0.1 tpy SO_2, 0.1 tpy NO_X, and 0.1 tpy PM/PM_{10}.

Permit No. 762-AOP-R8 was issued on August 10, 2006. Four separate minor modification applications were submitted. The following changes were requested:

- Albemarle proposed a permit modification to increase the throughput for DPE Byproduct/Heavy Organic Storage (SN-15-18) and the maximum allowable DPE (1,2-Diphenylethane) in the byproduct stream. Albemarle proposed a revised method of calculating emissions from SN-15-18. The total VOC emission associated with this modification is 0.1 tpy of VOC.

- Albemarle proposed a permit modification to allow the use of DECTP Ethanol Storage Tank (SN-DE-01) and NC-14 Unit Feed Tank (SN-TB-11) under an alternate operating scenario as additional ADMA brine storage tanks. Permitted VOC emissions increased by 2.9 tpy.

- Albemarle requested permission to install an additional baghouse (SN-DB-18). The new baghouse will be located downstream of the product dryer (SN-DB-04), and it will be used to separate conveyance air from dried product. Permitted PM/PM_{10} emission limits increased by 0.3 lb/hr and 1.4 tpy.

- Albemarle proposed an alternate operating scenario when the NC-24 reactor loses reaction. When this happens, the raw material vapors (propylene and hydrogen bromide) must be vented before re-initiating the reaction. The vapors are vented to the Wash Column (SN-24-01), which absorbs the hydrogen bromide just as in the primary operating scenario. Propylene will pass through the wash column unaffected.

- The process will be controlled such that the flaring (SN-AD-26) and depressurization of the reactor will not occur at the same time. The pressure control valve on the NC-24 reactor will be designed to allow no more than 48.5 lb/hr of VOC which is the same rate VOC would otherwise be routed to the flare in the primary operating scenario. No HBr beyond what is already permitted will be emitted during the alternate operating scenario. Permitted VOC emission limits increased by 0.60 tpy.

Permit No. 762-AOP-R9 was issued on January 1, 2007. Three separate minor modifications applications were submitted. The following changes were requested:

Albemarle proposed a permit modification to increase NC-15 production with a portion of the additional NC-15 production under an alternate operating scenario which uses NC-12 equipment, to install at the NC-12 process unit a 19,800 gallon Diphenyl Oxide storage tank, and to install a caustic scrubber. The caustic scrubber (SN-DB-19) was installed immediately after the product dry filter (SN-DB-04) to provide additional PM/PM_{10} and Br_2 + HBr control while operating in the alternate scenario. Permitted VOC limits increased by 1.10 tpy, while permitted PM/PM_{10} and Br_2 + HBr limits decreased by 2.77 tpy and 1.01 tpy, respectively.

Albemarle requested the limits for the ADMA Flare (SN-AD-26) be revised while operating as an emergency control device for the alkyl amines process. The purpose of increasing the

emission limits is to allow and to account for non-emergency operation of the flare such as cleaning and/or maintenance. Permitted PM/PM_{10}, VOC, CO limits increase by 0.03 tpy, 0.44 tpy, and 0.15 tpy, and permitted SO_2 and NO_X limits decreased by 0.05 tpy and 0.10 tpy.

Albemarle proposed a permit modification to allow an alternate operating scenario (Scenario B) for NC-22 production and to increase the maximum number of batches to 1,925 batches rolling 12-month period. The existing process (hereafter referred to as Operating Scenario A) has two VOC control scenarios which will also be utilized to control VOC emissions from Scenario B. The new scenario utilizes a different processing method to isolate the final product. In Scenario B, the product is not centrifuged; therefore the centrate hold-up drum (SN-TB-43) is not used to store centrate. Instead, process water is stored in the hold-up drum, and the drum is an insignificant activity under Scenario B. Also, Scenario B results in the product being formed into pellets rather than powder. The pellets do not require the product baghouse (SN-TB-04) to be collected. Since, Scenario B is the worst case for VOC and HCl the permitted emission limits will increase by 2.72 tpy VOC and 0.05 tpy HCl.

Permit No. 762-AOP-R10 was issued on April 13, 2007. Albemarle requested the following changes:

- Added an emission source (SN-DB-20) for drum D-2515 at the NC-12 Unit. During the NC-15 Production Alternate Operating Scenario the drum stores diphenyl ethane (DPE). Potential emissions from the drum increased by 0.32 lb/hr and 1.41 tpy of VOC;

- Installed and operated a temporary (rental) scrubber (SN-DB-19T) for the NC-12 Unit for operation under the NC-15 Production Alternate Operating Scenario. The temporary scrubber enabled Albemarle to begin NC-15 production before the permanent scrubber (SN-DB-19) was completed. The control efficiency for Br_2 + HBr is 40% which was a higher efficiency than the permanent scrubber was expected to achieve. The control efficiency for PM/PM_{10} for SN-DB-19T was expected to be less than expected for the permanent scrubber. Albemarle proposed limiting operation of the scrubber to 1,080 hours per consecutive 12-month period. Permitted emissions increased by 2.00 tpy PM/PM_{10};

- Revised Plantwide Condition #28 to address RICE units which are not exempt from Subpart ZZZZ but the only applicable requirement is the initial notification; and

- Installed a heat transfer fluid system expansion tank (SN-TB-44), an insignificant activity.

Permit No. 762-AOP-R11 was issued on November 1, 2007. Albemarle requested three separate minor modifications:

- Use an existing 16,000 gallon tank (SN-AD-40) to store mixed ADMA final products. Permitted VOC emissions increased by 1.14 tpy.

- Increased production of NC-15 product at both the NC-12 and NC-15 production units, permitted use of the NC-12 Product Dryer Scrubber (SN-DB-19) in all NC-12 operating

scenarios, and removed the NC-12 Temporary Product Dryer Scrubber (SN-DB-19T) since the permanent scrubber is in operation. Permitted PM/PM_{10} emissions increased by 0.77 lb/hr and 3.38 tpy.

- Revised the assignment of VOC and HAP emissions from the NC-23 production unit and removed the Solvent Tote Bin (SN-23-14).

Albemarle determined that approximately 33% less chloroethane, a HAP that can be generated from the raw material, enters the system of baghouses controlling the handling of NC-23 product. The difference is reassigned to the Raw Material Scrubber (SN-23-03) and the Vent Absorber (SN-23-05). Albemarle did not propose to increase the total chloroethane emission limit. Acetaldehyde, bromoform, and phenol emission limits for SN-23-05 decreased.

Permit No. 762-AOP-R12 was issued on March 12, 2008. Albemarle submitted four separate applications:

- Albemarle proposed two operating scenarios which permit the testing of three identified sources where the sources are to be operated under conditions other than normal operation for the purpose of conducting the tests. The first operating scenario is for demonstrating that Vent Gas Oxidizer (SN-16-18) and the Vent Gas Incinerator (SN-21-01) meet the HAP reduction required by 40 CFR Part 63, Subpart FFFF, the MON MACT. The second operating scenario permits operating and testing of the NC-15 Area Scrubber (SN-15-12) while the scrubber is utilizing fresh water in the top portion of the column rather than recirculating a portion of the spent scrubbing solution. Permitted annual emission limits were not increased.

- Albemarle proposed to change the supply of HCl for SN-BR-08 (Recycle HCl Storage Tank) and revise the HAP speciation for SN-MS-07 (Gasoline Storage Tank).

The supply of HCl could potentially contain up to 30 ppm benzene which resulted in potential VOC and benzene emissions of 0.28 lb/hr and 1.21 tpy. Potential HCl emissions from SN-BR-08 remained unchanged. The HAP speciation for emissions from the gasoline storage tank was revised which resulted in lower hourly and annual HAP emission limits.

- Albemarle returned to service two 4,000 gallon existing storage tanks (SN-AD-41). Permitted emission limits are based on maximum pump rate and the worst-case ADMA product. Permitted VOC emissions increased by 2.28 tpy.

- NC-21 process was expanded through various equipment additions/upgrades (e.g., piping, additional instrumentation, meters, and controls) and process changes (e.g., increasing reboiler capacity, and changing service of existing equipment). The permitted VOC, Benzene, and Ethylene Dichloride emissions increased by 1.88 tpy, 1.88 tpy, and 0.10 tpy, respectively.

Permit No. 762-AOP-R13 was issued on July 17, 2008. The modification incorporated all applicable requirements of 40 CFR Part 63, Subpart FFFF – *National Emission Standards for Hazardous Air Pollutants Miscellaneous Organic Chemical Manufacturing and Miscellaneous Coating Manufacturing*. The short term emission limits under the MON required testing scenarios were revised. Due to the modification permitted HCl emissions decreased by 1.1 tpy.

Permit No. 762-AOP-R14 was issued on March 19, 2009. The permit was modified to increase the production at the NC-24 unit to 2,800,000 gallons of NC-24 product through a combination of installing new equipment (i.e., heat exchangers, drums, expansion pots, pumps, compressors, and associated piping) and addressing process efficiency (i.e., raw material supply interruptions, reactor heat removal rates, washed reaction crude drying capacity, etc.). Permitted VOC and HCl emissions increased by 10.7 tpy and 0.10 tpy, respectively.

Permit No. 762-AOP-R15 was issued on August 25, 2009. Albemarle requested permission to install central vacuum systems at NC-12 (SN-DB-22) and NC-15 (SN-15-19) to collect off-spec products. Permitted PM/PM_{10} increased by 0.4 tpy.

Permit No. 762-AOP-R16 was issued on August 25, 2009. Albemarle modified the NC-23 production unit in order to produce Methyl Bromide. Albemarle also requested the NC-14 Methyl Bromide production scenario be removed. The increase in emissions due to the modification is 21.01 tpy VOC, 0.10 tpy sulfuric acid, 0.02 tpy ethylene glycol, 9.83 tpy methanol, and 8.25 tpy methyl bromide.

Permit No. 762-AOP-R17 was issued on October 13, 2011. The Title V permit was renewed with modifications.

Permit No. 762-AOP-R18 was issued on March 22, 2012 to modify NC-21 to allow the two reactors to operate simultaneously and in series. The HCl absorption system was modified for both batch and continuous operation. Those modifications allowed the annual production rate to increase to 5,475 batches. At the NC-23 unit an orifice in the circulation line of the tank that is routed to the scrubber (SN-23-03) was replaced. The production at the NC-24 unit was increased to 9,452 metric tons and included installation of two tanks and a loadout. Permitted VOC emissions increased by 15.5 tpy.

Permit No. 762-AOP-R19 was issued on July 13, 2012. A bromine storage tank, substrate storage, substrate dissolution, and recycle solvent purification equipment, and a hydrazine hydrate storage tote were installed and accompanied by process and piping changes at NC-22. The hydrazine hydrate storage was designated SN-TB-45. Production was increased to 3,137 batches per year. Operating scenarios were replaced with limits based on the worst case emission rates and conditions that cover all three former scenarios. A bromine recovery unit (SN-33-01 and SN-33-02) was also installed to recover bromine from the processes at the facility. The emission increase associated with these modifications were 6.5 tpy PM_{10}, 0.4 tpy SO_2, 26.93 tpy VOC, 7.3 tpy CO, 38.1 tpy NO_X, 4.97 tpy Br_2, and less than 0.01 tpy hydrazine

Permit No. 762-AOP-R20 was issued on October 11, 2012. The NC-12 and NC-22 production units were modified and emission estimates at those units were revised. Overall, permitted emissions increased by 4.14 tpy VOC, 0.44 tpy HCl, 0.30 tpy Br_2, and 0.63 tpy HBr.

Permit No. 762-AOP-R21 was issued on December 23, 2013. Additional feed streams were permitted for the bromine recovery unit (SN-33-01), the throughput limit for the DPE Byproduct/Heavy Organics Storage was increased. A truck loading point (SN-15-20) and an emergency generator was added to the permit. The requirements of Subpart ZZZZ, Subpart IIII, and Subpart JJJJ for the stationary engines at the facility were incorporated. Overall, permitted emissions increased by less than 0.50 tpy HAPs and decreased by 0.30 tpy PM/PM_{10}, 0.73 tpy SO_2, 10.7 tpy VOC, 16.32 tpy CO, and 9.93 tpy NO_X.

Permit No. 762-AOP-R22 was issued on July 30, 2014. The cooling water usage limit at the bromine recovery unit (SN-33-01) was increased, an 82 hp SI Emergency engine (SN-MS-08-08) was permitted, and the NC-22 production unit was modified to allow re-dissolving and re-work of off-spec product. Overall permitted emissions increased by 0.39 tpy PM/PM_{10}, 0.09 tpy SO_2, and 0.02 NO_X and decreased by 0.81 tpy VOC.

Permit No. 762-AOP-R23 was issued on March 27, 2015. A 10,000 gallon anhydrous hydrogen bromide tank was installed and the existing anhydrous hydrogen bromide storage tank was returned to dedicated non-sales storage service. Overall, permitted emissions increased by 6.96 tpy of hydrogen bromide.

Permit No. 762-AOP-R24 was issued on April 8, 2014. Albemarle was authorized to produce new products at the Clear Completion Fluid (CCF) production area and replaced/upgraded the bag filters at the raw material baghouse (SN-CB-18. Overall, permitted emissions increased by 0.28 tpy HAP and 0.04 tpy HBr.

Permit No. 762-AOP-R25 was issued on October 17, 2016. Albemarle submitted an application to renew the Title V permit with modifications. The permit modifications included incorporating applicable Boiler MACT requirements, revising the insignificant activities table due to sources (SN-AD-16 and SN-16-30) affected by the Boiler MACT, revising emission limits due to additional stack test data and/or fuel composition (AD-05, AD-35, 15-12, DM-02, and 33-01), revising stack testing schedules for certain sources, updating process descriptions, and correcting administrative and technical errors (pollutants inadvertently excluded from previous permits). Overall, permitted emissions increased by 4.9 tpy PM, 5.0 tpy PM10, 2.3 tpy SO2, 2.5 tpy VOC, and decreased by 12.2 tpy CO, and 3.2 tpy NOx.

The applicable Boiler MACT requirements were incorporated with this permit renewal. Refer to Plantwide Condition #23. Albemarle identified the sources listed in the following table for Boiler MACT applicability.

Source No.	Boiler MACT Subcategory	Heat Input Capacity (MMBtu/hr)
SN-AD-6	63.7499(1) Units designed to burn gas 1 fuels	3.55
SN-15-14A	63.7499(1) Units designed to burn gas 1 fuels	2.15
SN-15-14B	63.7499(1) Units designed to burn gas 1 fuels	2.15
SN-16-20	63.7499(1) Units designed to burn gas 1 fuels	4.93
SN-16-30	63.7499(1) Units designed to burn gas 1 fuels	1.2
SN-BH-01	63.7499(1) Units designed to burn gas 1 fuels	340
SN-BH-02	63.7499(1) Units designed to burn gas 1 fuels	340

Permit No. 762-AOP-R26 was issued on October 30, 2017. Albemarle submitted a minor mod application to:

- Increase Clear Completion Fluids (CCF) $ZnBr_2$ production rates which resulted in additional methanol emissions from the CCF Reactor (SN-CB-23).
- Furthermore, the facility proposed to bypass the control device (SN-CB-16) after the reactor vapor temperature reaches 245 ^oF. Emissions will be routed to scrubber SN-CB-16 at all temperatures below 245 ^oF; once a temperature of 245 ^oF has been achieved the emissions will bypass the scrubber (SN-CB-16) and be vented by an automated valve to the atmosphere via the CCF Reactor Vent (SN-CB-23). The number of batches under this scenario is limited to 185 batches per year.
- Removed the Alternate Operating Scenario (Current Specific Conditions #28 through #35) from the permit.
- Remove R-21 Vent Scrubber (South) (SN-CB-02) from the permit. All references to this control equipment were removed from the specific conditions.
- The Br_2+HBr total allowable emissions were corrected to 3.72 lb/hr and 16.32 tpy to reflect changes made in permit 0762-AOP-R25.

The proposed modification resulted in an overall emission decrease of: -22.8 tpy VOC, -1.1 tpy Ammonia, -0.88 tpy Bromide, -0.24 tpy Hydrogen Bromide, -0.55 tpy Methanol, -9.18 tpy Methyl Bromide, and -16.53 tpy Total HAP.

Permit No. 0762-AOP-R27 was issued October 25, 2019. This modification was to:

1. Make several improvements throughout the S8010 production plants that improved cycle times and improved operational efficiency. Project changes included the following types of changes: increase in size of transfer lines, upgrades to the bromine recovery processes, upgrades to heat transfer blower motors, upgrade instrumentation, increased size of the NC-15 Bromine stripper vent line, and increased the size of the NC-15 caustic scrubber

(SN-15-02). The S8010 expansion project resulted in emissions increases at SN-DB-20, SN-15-12, and SN-15-13.

2. Reduced permitted emission rates at SN-MS-03 (French Drain Sump Bubble). The revised emission rate was based on sampling conducted at the French Drain Sumps. Sampling indicated that no bromine emissions will occur at the SN-MS-03; however Albemarle requested a small amount of bromine as a permit limit for the sake of conservatism.
3. Installed a new 56 hp diesel-fired backup electrical generator (SN-MS-08-09). SN-MS-08-09 is subject to the applicable requirements of 40 CFR 60, Subpart IIII and 40 CFR 63, Subpart ZZZZ.
4. Included pH Adjustment Bag Dumping in the Insignificant Activity list as a category A-13 activity.
5. Updated the general provisions to the current language used by the department.

Permitted emissions increased by 0.1 tpy PM/PM_{10}, 0.5 tpy SO_2, 5.6 tpy VOC, 0.9 tpy CO, 1.4 tpy NO_x 0.01 tpy Benzene, 1.01 tpy Br_2+HBr, 0.01 tpy Total HAP and decreased by 11.39 tpy Br_2.

Permit No. 0762-AOP-R28 was issued March 31, 2020. This application was submitted to replace the existing SN-16-20 Heat Exchange Heater (4.9 MMBtu/hr) in the NC-17 Unit with a 4.4 MMBtu/hr heater. Permitted emission rates increased/decreased by -0.2 tpy SO_2, -0.4 tpy VOC, 0.8 tpy CO and -0.2 tpy NO_x. CO emission increases were attributed to using AP-42 emission factors; previous CO calculations were based on vendor specifications.

SECTION IV: SPECIFIC CONDITIONS

Bromine (Br_2) Production

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

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

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

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

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

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

Specific Conditions

1. The permittee shall not exceed the emission rates set forth in the following table: [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

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	3.9	16.7
BR-08	Recycle HCl Storage Tank	VOC	0.3	1.3
BR-14	Br_2 Fugitive Emissions	VOC	0.5	2.2

2. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
BR-01	#1 Bromine Tower Vent Scrubber C-3042	Br_2 Total HAP Cl_2	0.26 N/A N/A	1.14 0.26 0.26
BR-04	#2 Bromine Tower Vent Scrubber C-3043	Br_2 Total HAP Cl_2	0.14 N/A N/A	0.61 0.13 0.13
BR-08	Recycle HCl Storage Tank	Total HAP Benzene HCl	N/A 0.28 N/A	1.52 1.21 0.31
BR-09	Recycle HBr Storage Tank, Vent Scrubber C-3036	Br_2 HBr	0.02 0.02	0.09 0.09
BR-12	Bromine Area Scrubber C-3049	Br_2 Total HAP Cl_2	0.30 N/A N/A	1.31 0.44 0.44
BR-14	Br_2 Fugitive Emissions	Br_2 Total HAP Cl_2	1.39 N/A N/A	6.09 0.18 0.18
BR-15	Caustic Drum	Br_2+Cl_2 Total HAP	1.60 N/A	0.10 0.10

3. The following sources shall not exceed 5% opacity: SN-BR-01, SN-BR-04, SN-BR-09, and SN-BR-12. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

4. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

5. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

6. The permittee shall test the following sources using the specified test methods. The permittee shall conduct testing in 2017 and before the end of each fifth calendar year thereafter. Testing shall be conducted within 10% of maximum source throughput capacity. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

Source	Pollutants	Test Method
BR-01	VOC	25A or 18
	Bromine (Br_2), Chlorine (Cl_2)	26A

Source	Pollutants	Test Method
BR-04	VOC	25A or 18
	Bromine (Br_2), Chlorine (Cl_2)	26A
BR-12	Bromine (Br_2), Chlorine (Cl_2)	26A

7. RESERVED

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

9. The permittee shall record, every three hours, the pump discharge valve position and pump run light at SN-BR-12. The pump discharge valve position at the most recent satisfactory test event shall be recorded and established as a sufficient parameter for demonstration of continuous compliance until the next test is performed. Proposed parametric set points and allowable operating ranges shall be submitted with the test report. The pump discharge valve position/pump light records shall be maintained on-site and made available to Department personnel upon request. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

10. The permittee shall measure and record the caustic concentration of the scrubber media used for SN-BR-12 at least once per 12-hour shift. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records corresponding to the most recent approved satisfactory test event shall be kept on-site and made available to Department personnel upon request. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Sulfur Production

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 are burned in the tail gas incinerator. The tail gas incinerator is designed for a minimum exhaust temperature of 1200°F.

Alternate Operating Scenarios

There are two alternate operating scenarios for SN-SL-01: (1) emergency flaring of "sour" brinefield gas and (2) emergency flaring of "sweet" gas. There is also one alternate operating scenario for SN-SR-01 that covers the situation when the incinerator operating temperature falls below 1,200°F. Specific Conditions # 17 through #20 set forth the requirements for these alternate operating scenarios.

Specific Conditions

11. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq*. and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
SL-01	Gas Sweetening Process Flare	PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.1	0.1
		CO	0.1	0.1
		NO_X	0.1	0.1
SL-02	Sulfinol Storage Tank	VOC	0.2	0.6
SR-01	Tail Gas Incinerator	PM_{10}	0.1	0.4
		SO_2	727.0	3,184.0
		VOC	0.1	0.4
		CO	0.3	1.1
		NO_X	0.6	2.6
SR-02	Sulfur Area Fugitives	SO_2	0.2	0.7
		VOC	0.7	2.0
SR-03	Molten Sulfur Pit and Loadout	SO_2	0.5	1.8

12. The permittee shall not exceed the non-criteria emission rates set forth in the following table: [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
SL-01	Gas Sweetening Process Flare	PM	0.1	0.1
		Total HAP	N/A	0.01
SR-01	Tail Gas Incinerator	PM	0.1	0.4
		Total HAP	N/A	0.01
SR-02	Sulfur Area Fugitives	H_2S	0.30	1.31
		Total HAP	N/A	0.55
		Methanol	0.38	0.55
SR-03	Molten Sulfur Pit and Loadout	H_2S	0.22	0.96

13. The following sources shall not exceed 5% opacity: SN-SL-01 and SN-SR-01. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

14. 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. [Reg. 26.701 and 40 C.F.R. § 70.6(a)(3)(iii)(B)]

15. 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°F during those periods when sulfur-bearing gases

are being incinerated. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

16. The permittee shall test SN-SR-01 for lb/hr emissions of SO_2, using EPA Reference Method 6C. The testing shall be performed in 2020, and before the end of each fifth calendar year thereafter. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

17. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
SL-01	Emergency Flaring of Brinefield Gas	PM_{10} SO_2 VOC CO NO_X	3.7 12066.0* 3.7 13.4 31.4	0.1 36.0 0.1 0.1 0.1	Actual emissions shall be calculated and recorded for each event.
SL-01	Emergency Flaring of Sweet Gas	PM_{10} SO_2 VOC CO NO_X	2.2 5.6 2.2 7.8 18.4	0.2 0.3 0.2 0.4 0.9	Not to exceed 96 hours per year
SR-01	Tail Gas Pilot Flame Deviation (<1200°F)	SO_2	242.6	2.9	Not to exceed 24 hours per year

*** One-hour maximum emission rate. There are different limits for 3-hour and 24-hour averaging periods. See Specific Condition #18.**

18. The permittee shall maintain records which document compliance with the operating limits of the above listed scenarios. To demonstrate compliance with the limits given for emergency flaring of brinefield gas, the records must show that emissions were less than 12,066 pounds for any event lasting one hour or less, 8,246 lb/hr average for any three hour period, and 7, 142 lb/hr average for any 24-hour period. The records shall be updated as performed, kept on-site, and made available to Department personnel upon request. If SO_2 emissions exceed these limits, the emissions must be reported in accordance with §19.601 or §19.602, as applicable. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

19. During times of equipment malfunction or power failure, the permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
SL-01	Emergency Flaring of Brinefield Gas	PM Total HAP	3.7 N/A	0.1 0.01	Actual emissions shall be calculated and recorded for each event.

Source	Scenario	Emission Limits			Operating Limits
		Pollutant	lb/hr	ton/yr	
SL-01	Emergency Flaring of Sweet Gas	PM Total HAP	2.2 N/A	0.2 0.01	Not to exceed 96 hours per year
SR-01	Tail Gas Pilot Flame Deviation (<1200°F)	H_2S	257.4	3.1	Not to exceed 24 hours per year Not to exceed 10 hours in any 24 hour period

20. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Clear Completion Fluids

Metal Bromide Process Description

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 permitted to manufacture those compounds listed here and other HAP metal compounds that have a TLV greater than or equal to 0.1 milligrams per cubic meter. Vapors generated during the reaction are controlled by one scrubber (SN-CB-16). Particulate emissions from raw material handling are controlled by two baghouses (SN-CB-01, SN-CB-18).

Alternate Operating Scenario

During this alternate scenario the facility bypasses the control device (SN-CB-16) after the reactor vapor temperature reaches 245 ^{o}F. Emissions will be routed to the scrubber SN-CB-16 at all temperatures below 245 ^{o}F; once a temperature of 245 ^{o}F has been achieved the emissions will bypass the scrubber (SN-CB-16) and be vented by an automated valve to the atmosphere via the CCF Reactor Vent (SN-CB-23). The number of batches under this scenario will be limited to 185 batches per year.

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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq*. and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
CB-01	Raw Material Silo	PM_{10}	0.1	0.5
CB-04	Methanol Storage Tank	VOC	26.0	0.4
CB-16	R-21 Vent Scrubber (North)	VOC	0.3	1.2
CB-17	CCF Fugitive Emissions	VOC	1.2	5.1
CB-18	Raw Material Baghouse	PM_{10}	0.1	0.5
CB-23	Reactor Vent	VOC	5.0	0.6

22. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
CB-01	Raw Material Silo	PM	0.1	0.5
CB-04	Methanol Storage Tank	Total HAP Methanol	N/A 26.00	0.40 0.40

SN-#	Description	Pollutant	lb/hr	tpy
CB-16	R-21 Vent Scrubber (North)	Ammonia	1.00	1.10
		Br_2	0.10	0.44
		HBr	0.08	0.02
		Total HAP	N/A	1.19
		Hydrazine	N/A	0.01
		Methanol	0.07	0.30
		Methyl Bromide	0.20	0.88
CB-17	CCF Fugitive Emissions	Br_2+HBr	0.37	1.63
		Total HAP	N/A	3.88
		Hydrazine	N/A	0.02
		Methanol	0.88	3.86
CB-18	Raw Material Baghouse	PM	0.1	0.5
		Total HAP	N/A	0.26
CB-21	Rundown Tanks T-4142/4143	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-22a	Truck Loading #1	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-22b	Truck Loading #2	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01
CB-23	Reactor Vent	Total HAP	N/A	0.56
		Hydrazine	N/A	0.01
		Methanol	4.98	0.55

* The HAP emission limits for CB-18 apply only to the metal compounds which have a TLV equal to or greater than 0.1 milligrams per cubic meter.

23. The following sources shall not exceed 5% opacity: SN-CB-01, SN-CB-16, and SN-CB-18. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311

24. The permittee shall conduct stack testing for bromine (Br_2) at SN-CB-16. The testing shall be performed in 2017, and before the end of each fifth calendar year thereafter, using EPA Reference Method 26A. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

25. The permittee shall perform a visual inspection of the pumps driving the scrubber media at 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

26. The permittee shall use fresh caustic with every zinc bromide batch at scrubber SN-CB-16. For sodium bromide, and all other metal bromides, the pH shall be tested once per batch, and caustic changeouts performed as needed. Each pH test and caustic changeout shall be logged as performed. Both pH and changeout records corresponding to the most recent satisfactory test event shall be kept on-site and made available to Department

personnel upon request. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

27. The permittee shall calculate methyl bromide and methanol emissions from 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

27a. The permittee shall demonstrate compliance with SN-CB-04 emission rates by not exceeding a throughput of 1,000,000 gallons of methanol or other less volatile VOC per twelve consecutive months at this tank. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

27b. The permittee shall maintain monthly records demonstrating compliance with Specific Condition #27a. Records shall be updated by the 15th day following the month to which the records pertain, made available to Department personnel upon request, and otherwise in accordance with General Provision 7. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

Alternate Operating Scenario Conditions

28. The emission limits in conditions #21 and #22 are still in affect during the alternate operating scenario.

29. The permittee shall be limited to 185 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

30. The permittee shall use fresh caustic with each alternate scenario batch at 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

31. The permittee shall operate an automated system that will prevent venting, during the alternate scenario, from the SN-CB-23 reactor until a set point temperature of 245 degrees F is reached. Set point venting temperatures shall be recorded during each alternate operating scenario. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

32. The permittee shall perform a visual inspection of the pumps driving the scrubber media at 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4- 304 and 8-4-311]

35a. SN-CB-04 is an affected source and is subject to requirements in 40 CFR 63, Subpart EEEE – *National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)*. Applicable requirements include, but are not limited to the following:

a. The permittee shall submit the following information in either the Notification of Compliance Status, according to the schedule specified in Table 12 of Subpart EEEE or in the first Compliance report, according to the schedule specified in §63.2386(b), whichever occurs first. [Reg.19.304 and 40 C.F.R. §63.2343(b)(1)(i)]

i. Company name and address.

ii. Statement by a responsible official, including the official's name, title, and signature, certifying that, based on information and belief formed after reasonable inquiry, the statements and information in the report are true, accurate, and complete.

iii. Date of report and beginning and ending dates of the reporting period.

iv. A listing of all transfer racks (except those racks at which only unloading of organic liquids occurs) and of tanks greater than or equal to 18.9 cubic meters (5,000 gallons) that are part of the affected source but are not subject to any of the emission limitations, operating limits, or work practice standards of this subpart.

b. If the permittee submits the first Compliance report before the Notification of Compliance Status, the Notification of Compliance Status must contain the information specified in §63.2386(d)(3) and (4) if any of the changes identified in §63.2343 (d) have occurred since the filing of the first Compliance report. If none of the changes identified in that section have occurred since the filing of the first Compliance report, the permittee does not need to report the information specified in §63.2386(c)(10)(i) when you submit your Notification of Compliance Status. [Reg.19.304 and 40 C.F.R. § 63.2343(b)(1)(ii)(A)]

c. If the permittee submits the Notification of Compliance Status before the first Compliance report, the first Compliance report must contain the information specified in §63.2386(d)(3) and (4) if any of the changes specified in §63.2343 (d) have occurred since the filing of the Notification of Compliance Status. [Reg.19.304 and 40 C.F.R. § 63.2343(b)(1)(ii)(B)]

d. If the permittee has already submitted a Notification of Compliance Status or a first Compliance report under §63.2386(c), the permittee does not need to submit a separate Notification of Compliance Status or first Compliance report for each

storage tank that meets the conditions identified §63.2343 (b) (i.e., a single Notification of Compliance Status or first Compliance report should be submitted). [Reg.19.304 and 40 C.F.R. § 63.2343(b)(I)(iii)]

e. The permittee must submit a subsequent Compliance report according to the schedule in §63.2386 (b) whenever any of the events in §63.2343 (d) occur, as applicable. [Reg.19.304 and 40 C.F.R. § 63.2343(b)(2)(i)]

f. Subsequent Compliance reports must contain the information in §63.2386(c)(1), (2), (3) and, as applicable, in §63.2386(d)(3) and (4). If the permittee has already submitted a subsequent Compliance report under §63.2386(d), the permittee does not need to submit a separate subsequent Compliance report for each storage tank that meets the conditions identified in §63.2343 (b) (i.e., a single subsequent Compliance report should be submitted). [Reg.19.304 and 40 C.F.R §63.2343(b)(2)(ii)]

g. For each storage tank that meets the conditions identified in §63.2343 (b), the permittee must keep documentation, including a record of the annual average true vapor pressure of the total Table I organic HAP in the stored organic liquid, that verifies the storage tank is not required to be controlled under Subpart EEEE. The documentation must be kept up-to-date and must be in a form suitable and readily available for expeditious inspection and review according to §63.10(b)(1), including records stored in electronic form in a separate location. [Reg.19.304 and 40 C.F.R. §63.2343(b)(3)]

Additional Conditions When Producing Metal Bromides (Sodium and Zinc Bromides)

36. The permittee shall not use the Clear Completion Fluid (CCF) production area to produce any metal compound having a threshold limit value less than 0.1 milligrams per cubic meter. The permittee shall only produce the following metal bromide products: zinc bromide, sodium bromide, and any of the metal compounds with a threshold limit value equal to or greater than 0.1 milligrams per cubic meter. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

37. The permittee shall maintain records of each product produced within the CCF production area. These records shall identify the product of each batch. For each batch where the metal compound is not zinc, or sodium bromides the permittee shall maintain the following records: The American Conference of Governmental Industrial Hygienists (ACGIH) Time Weighted Average Threshold Limit Value (TWA-TLV) including units, the date, time initiated and duration of batch, and the amount product produced. These records shall be kept on site and made available upon request to Department personnel. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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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 are converted to an alkyl bromide by reaction with hydrogen bromide produced on-site. The alkyl bromides thus produced are reacted with a primary and/or secondary amine in the presence of sodium hydroxide to produce the desired product alkyl amine. The choice of the starting amine(s) and alkyl bromide(s) determines the structure of the product, which is a secondary or tertiary alkyl amine. The product amine is thus "tailored" to the needs of the user. Product amines are, by nature of the production process, statistical distributions of alkyl amines, depending on the initial raw materials.

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

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

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

Under the 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). 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 scenario is the tank's vent, SN-AD-37. The 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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq*. and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
AD-01	Olefins Storage Tank #1: T-1501	VOC	0.2	0.8
AD-02	Olefins Storage Tank #2: T-1503	VOC	0.2	0.8
AD-03	Alkyl Amines Storage Tank: T-1502	VOC	0.3	1.2
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03).	VOC	0.3	1.4
AD-07	Alkyl Amine Rundown Tank: T-1534A	VOC	0.1	0.3
AD-08	Alkyl Amines Rundown Tank: T-1534B	VOC	0.1	0.3
AD-09	Alkyl Amines Rundown Tank: T-1534C	VOC	0.1	0.3
AD-10	Alkyl Amines Storage Tank: T-1537	VOC	0.3	1.2
AD-11	Alkyl Amines Storage Tank: T-1535	VOC	0.3	1.2
AD-12	Alkyl Amines Storage Tank: T-1536	VOC	0.3	1.2
AD-13	Alkyl Amines Storage Tank: T-1538	VOC	0.3	1.2
AD-14	Alkyl Amines Storage Tank: T-1539	VOC	0.3	1.2
AD-15	Alkyl Amines Storage Tank: T-1540	VOC	0.3	1.2
AD-16	Dowtherm Furnace 3.55 MMBtu/hr Natural Gas-Fired	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 0.1 0.3 0.4	0.2 0.1 0.1 1.4 1.6
AD-17	Alkyl Amines Blend Tank: D2427-A	VOC	0.3	1.2
AD-18	Sodium Bromide Brine for Recycle: T-1409	VOC	0.3	1.2
AD-20	Olefins Storage Tank: T-1405A	VOC	0.2	0.8
AD-21	Olefins Storage Tank: T-1405B	VOC	3.5	15.1
AD-23	Alkyl Amines Storage Tanks: T-1408 A, B	VOC	0.1	0.2
AD-24	Product Storage: Alkyl Amines: T-1542	VOC	0.3	1.2
AD-25	Product Storage: Alkyl Amines: T-1543	VOC	0.3	1.2
AD-26	ADMA Flare *Alkyl Amines Scenario Emergency Flaring Events*	PM_{10} SO_2 VOC CO NO_X	0.2 0.1 0.7 0.1 0.4	0.1 0.2 0.2 0.2 0.2
AD-26	ADMA Flare *Alkyl Amines Scenario Non-Emergency Flaring Events*	PM_{10} SO_2 VOC CO NO_x	0.8 0.1 48.5 18.9 3.5	0.1 0.1 0.6 0.3 0.1
AD-27	Recycle Brine Storage Tank: T-1407	VOC	0.3	1.2

SN-#	Description	Pollutant	lb/hr	tpy
AD-28	Stripped Recycle Brine Storage Tank: T-1541	VOC	0.1	0.4
AD-29	Stripped Recycle Brine Tank: T-1544	VOC	0.1	0.4
AD-32	Direct Natural Gas-Fired Heater 4.62 MMBtu/hr	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 0.1 0.4 0.5	0.2 0.1 0.2 1.7 2.0
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM_{10} SO_2 VOC CO NO_x	0.3 0.2 1.3 0.1 0.7	1.0 0.7 5.4 0.3 3.1
AD-36	Fugitive Emissions, Including Product Loading	VOC	4.5	17.6
AD-37	ADMA Condensate Collection Tank	VOC	0.1	0.2
AD-39	ADMA Brine Load Out***	VOC*	0.1	0.4
AD-40	Mixed ADMA Final Product Storage Tank, T-9965	VOC	0.3	1.2
AD-41	Mixed ADMA Final Product Storage Tanks, T-1408A and T-1408B	VOC	0.6	2.3
DE-01	ADMA Brine Storage Tank**	VOC*	0.5	2.1
TB-11	ADMA Brine Storage Tank**	VOC*	0.1	0.4

* ADMA brine or any non-HAP material with a vapor pressure less than or equal to 0.0120 psia may be stored and loaded out.

** ADMA brine service is not the primary operating scenario for these sources. The primary operating scenario for DE-01 and TB-11 are DECTP Production and MeBr Primary Production Scenario, respectively.

*** AD-39 is the emissions from the loadout of both DE-01 and TB-11 in ADMA brine service.

57. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
AD-05	Acid Vent Scrubber: C-1531 (CD-AD-05, also formerly SB-03)	Br_2+HBr Total HAP HCl	0.05 N/A N/A	0.22 0.50 0.50
AD-16	Dowtherm Furnace 3.55 MMBtu/hr Natural Gas-Fired	PM Total HAP	0.1 N/A	0.4 0.03
AD-26	ADMA Flare *Alkyl Amines Scenario Emergency Flaring Events*	PM Br_2 Total HAP	0.2 0.02 N/A	0.1 0.01 0.01
AD-26	ADMA Flare *Alkyl Amines Scenario Non-Emergency Flaring Events*	PM Total HAP	0.8 N/A	0.1 0.01

SN-#	Description	Pollutant	lb/hr	tpy
AD-32	Direct Natural Gas-Fired Heater 4.62 MMBtu/hr	PM	0.1	0.2
		Total HAP	N/A	0.01
AD-35	Alkyl Amines Area Odor Control Vent Gas Oxidizer (VGO)	PM	0.3	1.0
		Br_2	0.03	0.14
		Total HAP	N/A	0.01
AD-36	Fugitive Emissions, Including Product Loading	Br_2	0.30	1.31
		HBr	1.41	6.16
		Total HAP	N/A	0.16
		Hydrazine	N/A	0.01

58. The following sources shall not exceed 5% opacity: SN-AD-05, SN-AD-16, SN-AD-26, and SN-AD-35. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

59. The permittee shall document the time SN-DE-01 and SN-TB-11 are in ADMA brine service and calculate the emissions from each tank and loadout (SN-AD-39). The permittee shall include in the documentation the time and date for the beginning and end, the vapor pressure of the material, and VOC emitted for each period of ADMA brine service. These records shall be kept on-site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

60. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

61. Operation of the Emergency Flare (SN-AD-26) for emergency use shall not exceed 30 minutes, in the aggregate, during any 24-hour period. See Specific Condition #62 for operation of the flare during non-emergency events. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

62. The permittee shall maintain records of each venting event to SN-AD-26, both emergency and non-emergency. Acceptable non-emergency events are cleaning and maintenance of equipment where emissions of such activities are routed to the flare. These records shall contain the date, time, reason, duration of each event, and total duration per rolling twelve month period. The permittee shall calculate the emissions for each event in order to demonstrate compliance with the limits in Specific Conditions #56 and #57. These records shall be updated following each event, kept onsite, and made available to Department personnel upon request. Any emergency use exceeding the requirement set forth in the previous condition shall be an upset condition, in accordance with General Provision 8 of this permit. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

63. The permittee shall test SN-AD-05 for VOC in 2021 and before the end of each fifth calendar year thereafter. The testing shall be performed in accordance with EPA Reference Method 18 or 25A. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

64. The permittee shall measure and record the flow rate of the scrubber media at SN-AD-05 every four hours. These records shall be kept on-site and made available to Department personnel upon request. The flow value measured at the most recent satisfactory test

event shall be established as minimum for purposes of continuous compliance until the next test is performed. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

65. The permittee shall measure and record the caustic concentration of the scrubber media used for SN-AD-05 once per twelve-hour shift. Each caustic changeout shall be logged as performed. Both caustic strength and changeout records shall be kept on-site and made available to Department personnel upon request. The caustic concentration and changeout schedule corresponding to the most recent satisfactory test event shall be established as minimum for purposes of continuous compliance until the next test is performed. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

66. The permittee shall test SN-AD-35 for the following compounds in 2021 and before the end of each fifth calendar year thereafter. Applicable test methods are listed in the right column of the table. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

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

67. 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. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

68. The permittee shall test SN-AD-05 and SN-AD-35 for the following compounds in calendar year 2017 and 2021 and then before the end of each fifth calendar year. Applicable test methods are listed in the right column of the table. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Pollutant	EPA Reference Method
SN-AD-05	HBr	26A
SN-AD-35	Br_2	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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	VOC	1.2	5.3
AB-16	Alkyl Bromide Fugitive Emissions	VOC	7.2	31.5
AB-18	Alkyl Bromide Waste Water	VOC	1.5	6.3

70. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
AB-15	Emission Control: Carbon Bed Adsorbers (CB-304 and CB-05)	Total HAP Methylene Chloride	N/A N/A	1.10 1.10
AB-16	Alkyl Bromide Fugitive Emissions	HBr Total HAP HCl Methylene Chloride	0.02 N/A N/A N/A	0.08 1.75 0.48 1.27
AB-18	Alkyl Bromide Waste Water	Total HAP Methylene Chloride	N/A N/A	1.49 1.49

71. 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. [Reg.19.304 and 40 C.F.R. § 63.104(a)(1)]

72. 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. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

73. 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). [Reg.19.304 and 40 C.F.R. §63.105]

74. 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 §63.115(d) (1)(ii). [Reg.19.304 and 40 C.F.R. § 63.115(d)(1)(i)]

75. The following records shall be maintained: [Reg.19.304 and 40 C.F.R. § 63, Subpart G]

    a. TRE calculations and all backup information [Reg.19.304 and 40 C.F.R. § 63.117(b)].

    b. Records of process changes and TRE recalculations [Reg.19.304 and 40 C.F.R. § 63.118(c)(1)&(2)].

    c. Records of $MeCl_2$ storage vessel dimensions and capacity [Reg.19.304 and 40 C.F.R. § 63.123(a)].

76. 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). [Reg.19.304 and 40 C.F.R. § 63, Subpart G]

77. 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. [Reg.19.304 and 40 C.F.R. § 63, Subpart H]

78. The permittee shall follow the recordkeeping and reporting procedures for equipment leaks as outlined in paragraphs 63.181 and 63.182. [Reg.19.304 and 40 C.F.R. § 63, Subpart H]

79. RESERVED

80. 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. [Reg.19.705, Ark. Code

Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

81. Records of all carbon regeneration and replacement shall be maintained, updated as performed, and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

NC-12 Flame Retardant Process

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

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

The NC-12 production unit has an alternate operating scenario to produce NC-15 product. The scrubber (SN-DB-19) follows the product dryer filter (SN-DB-04). When producing NC-15 product, the emissions from the product dryer will be routed through SN-DB-04 to SN-DB-19. For all other permitted operating scenarios, the emissions may vent directly from SN-DB-04 or be routed, although not required, to SN-DB-19 for additional control.

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

Specific Conditions

82. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
DB-01	Vent Scrubber	VOC	0.8	3.5
DB-02	Raw Material Storage Tank	VOC	0.1	0.5
DB-04	Product Dryer Filter 2.00 MMBtu/hr	PM_{10} SO_2 VOC CO NO_x	1.8 0.2 1.0 3.6 1.6	7.9 0.7 4.2 15.8 7.0
DB-05	Product Vent Filter Silo Baghouse	PM_{10}	0.3	1.3
DB-06	Product Vent Filter Silo Baghouse	PM_{10}	0.3	1.3
DB-07	Raw Material Storage Tank	VOC	0.1	0.5
DB-08	Product Vent Filter	PM_{10}	1.1	4.8
DB-16	NC-12 Fugitive Emissions	VOC	1.5	5.8
DB-18	Receiving Baghouse	PM_{10}	0.3	1.4
DB-19	Product Dryer Scrubber	PM_{10} SO_2 VOC CO NO_x	1.0** 0.2** 1.0** 3.6** 1.6**	4.3** 0.7** 4.2** 15.8** 7.0**
DB-20	DPE Storage Tank, D-2515 *During NC-15 Production Alt. Op Scenario*	VOC	0.9	4.0
DB-22	NC-12 Central Vacuum System	PM_{10}	0.1	0.2

* SN-DB-04 is permitted to route emissions to SN-DB-19 for all NC-12 operating scenarios. However, operation of SN-DB-19 is only required for NC-15 production.

** When using the NC-12 unit to produce NC-15 product the gases from DB-04 are passed to DB-19 for Br_2 + Hbr control and secondary benefit additional control for PM/PM10. The emission limits noted are included in the emission limits for DB-04.

83. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
DB-01	Vent Scrubber	Br_2+HBr Total HAP HCl	0.44 N/A N/A	1.93 0.44 0.44
DB-04	Product Dryer Filter 2.00 MMBtu/hr	PM Br_2+HBr Total HAP	1.8 1.67 N/A	7.9 7.32 0.02
DB-05	Product Vent Filter Silo Baghouse	PM	0.3	1.3
DB-06	Product Vent Filter Silo Baghouse	PM	0.3	1.3
DB-07	Raw Material Storage Tank	Total HAP HCl	N/A N/A	0.50 0.5
DB-08	Product Vent Filter	PM	1.1	4.8
DB-16	NC-12 Fugitive Emissions	Br_2 HBr	1.07 1.39	4.30 6.08
DB-17	Back-up Water Scrubber	Br_2+HBr	0.10	0.44
DB-18	Receiving Baghouse	PM	0.3	1.4
DB-19	Product Dryer Scrubber	PM Br_2+HBr	1.0 1.00	4.3 4.38
DB-22	NC-12 Central Vacuum System	PM	0.1	0.2

* SN-DB-04 is permitted to route emissions to SN-DB-19 for all NC-12 operating scenarios. However, operation of SN-DB-19 is only required for NC-15 production.

84. The following sources shall not exceed 5% opacity: SN-DB-01, SN-DB-04, SN-DB-05, SN-DB-06, SN-DB-08, SN-DB-17, SN-DB-18, SN-DB-19, and SN-DB-22. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

85. The permittee shall demonstrate compliance with the HCl limits for SN-DB-07 by maintaining records of the concentration of water in each transfer of DPO and calculating on a monthly basis a twelve month rolling total of HCl generated. These calculations shall be completed by the 15th of the following month, shall be kept on-site, and shall be made available to Department personnel upon request. The permittee may at their discretion conduct the sampling or rely upon other records such as bills of lading that show the concentration of water in the DPO received. [Reg.19.304 and 40 C.F.R. §63.2465(b)]

86. The permittee shall test the following sources for the listed compounds in calendar year 2017 for SN-DB-01, SN-DB-04, and SN-DB-19 and before the end of each fifth calendar

year thereafter. Test methods are listed in the following table. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Compound	EPA Reference Method	Test Criteria / Operating Scenario
SN-DB-01	Br_2	26A	NC-12 or NC-15 Production
SN-DB-04	Br_2	26A	NC-12 Production
SN-DB-19	Br_2	26A	NC-12 or NC-15 Production

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. 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. The permittee shall also perform visual inspection of the pumps driving the scrubber media at SN-DB-19 at least once per day for days when SN-DB-19 is in operation, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on-site and made available to Department personnel upon request. The visual inspection method shall be confirmed by the most recent satisfactory stack test for purposes of continuous compliance until the next test is performed. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

88. 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. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

89. The permittee shall perform monthly calculations for worst-case lb/hr and ton/month emissions of Br_2 and HBr at SN-DB-04 and SN-DB-19. These calculations shall be based upon most recent available test data. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

90. The permittee shall be limited to drying 150 tanks of diphenyl oxide (DPO, stored at SN-DB-07) per rolling 12-month period. Records shall be maintained to demonstrate compliance with this limit. The records shall be updated weekly, maintained on-site, and made available to Department personnel upon request. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-14 Flame Retardant Production

Multiple alternate operating scenarios exist for the NC-14 process. The following table lists these additional operating scenarios. Compliance with permitted emission rates in the NC-14 process area shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements. This unit no longer produces MeBr.

Alternate Operating Scenario	Reference Page
NC-22 Production	84
95ND141/Stabrom 909 Production*	103

* Specific Condition #105 applies to this production scenario.

Specific Conditions

91. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition shall be demonstrated by the ADMA product being stored having 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. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
TB-01	ADMA Storage Tank	VOC	0.3	1.2

92. RESERVED

93. RESERVED

94. RESERVED

95. RESERVED

96. RESERVED

97. RESERVED

98. RESERVED

99. RESERVED

100. RESERVED

101. RESERVED

102. RESERVED

103. RESERVED

104. RESERVED

105. The following sources shall not exceed 5% opacity: SN-TB-04, SN-TB-08, SN-TB-14. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

106. RESERVED

107. RESERVED

108. RESERVED
109. RESERVED
110. RESERVED
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135. RESERVED
136. RESERVED
137. RESERVED

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. Tank, T-9962, which vents at SN-15-18, is used to store byproduct diphenyl ethane and heavy organics.

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

Specific Conditions

138. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq*. and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
15-12	NC-15 Area Scrubber	PM_{10} SO_2 VOC CO NO_x	3.1 0.1 2.2 0.4 0.4	13.6 0.5 9.7 1.5 1.7
15-13	Raw Material Weigh Tanks D-9965, D-9966	VOC	0.8	3.5
15-14A	Natural Gas Process Heater 2.15 MMBtu/hr	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 0.1 0.2 0.3	0.1 0.1 0.1 0.8 1.0
15-14B	Natural Gas Process Heater 2.15 MMBtu/hr	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 0.1 0.2 0.3	0.1 0.1 0.1 0.8 1.0
15-15	Fugitive Emissions	VOC	1.0	4.4
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM_{10}	1.2	5.3
15-17	Rail Car Vent	VOC	0.7	3.1
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	1.1	0.4

SN-#	Description	Pollutant	lb/hr	tpy
15-19	NC-15 Central Vacuum System	PM_{10}	0.1	0.2
15-20	DPE Byproduct/Heavy Organics Truck Loading	VOC	6.9	0.4

139. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
15-02	Process Scrubber	Br_2	0.10	0.44
		HBr	0.10	0.44
15-12	NC-15 Area Scrubber	PM	3.1	13.6
		Br_2+HBr	1.32	5.79
		Total HAP	N/A	0.02
15-14A	Natural Gas Process Heater 1.0 MMBtu/hr	PM	0.1	0.1
		Total HAP	N/A	0.02
15-14B	Natural Gas Process Heater 1.0 MMBtu/hr	PM	0.1	0.1
		Total HAP	N/A	0.02
15-15	Fugitive Emissions	Br_2	1.13	4.95
		HBr	0.18	0.75
		Total HAP	N/A	0.09
		HCl	N/A	0.09
15-16	Pollution Control: Dust Scrubber J-99601 CD-15-16	PM	1.2	5.3
15-19	NC-15 Central Vacuum System	PM	0.1	0.2

140. The following sources shall not exceed 5% opacity: SN-15-02, SN-15-12, SN-15-16, and SN-15-19. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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

142. The permittee shall conduct stack testing for the following compounds in calendar year 2018, and before the end of each fifth calendar year thereafter. Test methods are listed in the right-hand column of the table. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

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. The permittee shall conduct stack testing for bromine at SN-15-12 in calendar year 2018, and before the end of each fifth calendar year thereafter. The testing shall be conducted using EPA Reference Method 26A. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Source	Compound	EPA Reference Method
SN-15-12	Br_2	26A

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

144. RESERVED

145. The permittee shall maintain weekly production records of DPE product generated in the NC-21 production unit. A factor of 0.250 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 140,000 lbs/week. The records (including byproduct calculation) shall be kept on-site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

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

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

145a. The permittee shall perform a visual inspection to confirm pump activity of the pumps driving the scrubber media at SN-15-02 and SN-15-12 every three hours, to ensure that sufficient flow is maintained. Inspection results shall be recorded in a log. These records shall be kept on-site and made available to Department personnel upon request. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

145b. The permittee shall measure and record the caustic concentration of the scrubber media used at least once per twelve-hour shift at SN-15-02. The caustic shall be replaced when the concentration falls below 5% strength. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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.

Tetrabromophthalic Anhydride (TBPA)

TBPA is produced in a batch reaction process by brominating phthalic anhydride 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-16-19 and SN-16-29). Vapors generated are controlled by scrubbers (SN-16-01, SN-16-02, SN-16-13, and SN-16-24). Molten phthalic anhydride is stored in the Molten PA Storage Tank (SN-16-31).

Ethylene-bis-tetrabromophthalimide (EBTBP)

EBTBP and its higher grade equivalent are produced by reacting tetrabromophthalic anhydride with ethylene diamine in the presence of an acid. This reaction forms a solid complex, which is separated from the liquid, washed, and then dried. Emissions generated by the EBTBP process are controlled by scrubbers (SN-16-05 and SN-16-06), by baghouses (SN-16-07, SN-16-08, SN-16-09, and SN-16-12), 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 and SN-16-22).

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

Specific Conditions

146. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq*. and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
16-01	TBPA Production: Packed Scrubber	PM_{10} SO_2	0.1 0.5	0.5 2.2
16-02	TBPA Production: Off Gas Scrubber	SO_2 VOC	0.4 0.1	1.8 0.5
16-05	EBTBP Production: Packed Scrubber	VOC	0.1	0.5
16-06	EBTBP Production: Converter Scrubber	PM_{10} VOC	0.4 0.1	1.8 0.5
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM_{10}	0.3	1.4
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM_{10}	0.3	1.4

SN-#	Description	Pollutant	lb/hr	tpy
16-10	Product Transfer and Storage Fabric Filter	PM_{10} SO_2	0.5 0.1	2.2 0.5
16-12	TBPA Weigh Hopper Filter	PM_{10}	0.1	0.5
16-13	TBPA Production: Vacuum Pump	SO_2	0.1	0.5
16-14	Ethylene Diamine Storage Tank	VOC	0.1	0.1
16-15	Propionic Acid Storage Tank	VOC	0.1	0.1
16-16	TBPA Neutralization Tank	SO_2	0.1	0.5
16-17	Ethylene Glycol Tank	VOC	0.1	0.1
16-18	Vent Gas Oxidizer 6.47 MMBtu/hr	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 0.7 0.9 0.7	0.3 0.4 2.9 3.8 2.8
16-19	Charge Hopper Vent	PM_{10} SO_2	0.3 0.1	1.4 0.5
16-20	Heat Exchange Heater 4.4 MMBTU/hr	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 0.1 0.4 0.5	0.2 0.1 0.2 1.7 2.0
16-21	Product Storage Hopper	PM_{10} VOC	0.2 0.4	0.9 1.8
16-22	By-Product Powder Packaging	PM_{10} VOC	0.1 0.1	0.1 0.1
16-23	NC-16 Operation: Fugitive Emissions	SO_2 VOC	0.9 6.4	3.9 27.8
16-24	Raw Material Unloading, Brinks (Limited Hours of Operation)	SO_2	1.8	1.6
16-28	TBPA Neutralization Tank	SO_2	0.1	0.5
16-29	Packaging Vent	PM_{10} SO_2	0.3 0.1	1.4 0.5
16-30	Indirect Fired Heater 1.2 MMBtu/hr	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 0.1 0.1 0.2	0.1 0.1 0.1 0.5 0.6
16-31	Molten Phthalic Anhydride Storage Tank	VOC	3.9	0.8
16-33	Molten Sulfur Tank T-9365	SO_2	0.2	0.9

147. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
16-01	TBPA Production: Packed Scrubber	PM Total HAP	0.1 N/A	0.5 0.44
16-02	TBPA Production: Off Gas Scrubber	Br_2	0.10	0.44
16-06	EBTBP Production: Converter Scrubber	PM	0.4	1.8
16-07	EBTBP Production: In-Process Storage Silo Vent Filter	PM	0.3	1.4
16-08	EBTBP Production: Product Transfer and Storage Fabric Filter	PM	0.3	1.4
16-10	Product Transfer and Storage Fabric Filter	PM	0.5	2.2
16-12	TBPA Weigh Hopper Filter	PM	0.1	0.5
16-17	Ethylene Glycol Tank	Total HAP	N/A	0.09
16-18	Vent Gas Oxidizer 6.47 MMBtu/hr	PM Total HAP	0.1 N/A	0.3 2.28
16-19	Charge Hopper Vent	PM	0.3	1.4
16-20	Heat Exchange Heater 4.4 MMBtu/hr	PM Total HAP	0.1 N/A	0.2 0.04
16-21	Product Storage Hopper	PM Total HAP	0.2 N/A	0.9 1.23
16-22	By-Product Powder Packaging	PM Total HAP	0.1 N/A	0.1 0.04
16-23	NC-16 Operation: Fugitive Emissions	Br_2 H_2SO_4 Total HAP	0.62 0.05 N/A	2.72 0.22 3.38
16-29	Packaging Vent	PM	0.3	1.4
16-30	Indirect Fired Heater 1.2 MMBtu/hr	PM Total HAP	0.1 N/A	0.1 0.01
16-31	Molten Phthalic Anhydride Storage Tank	Total HAP	N/A	0.80
16-33	Molten Sulfur Tank T-9365	H_2S	0.10	0.43

148. The following sources shall not exceed 5% opacity: SN-16-01, SN-16-02, SN-16-06 through SN-16-08, SN-16-10, SN-16-12, SN-16-18 through SN-16-21, SN-16-22, SN-16-29, and 16-30. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

149. 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. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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

150. The permittee shall replace the carbon canisters at SN-16-14, SN-16-15, and SN-16-22 at least once per year. A log of replacement dates (or notation on the drum) shall be maintained on-site and made available to Department personnel upon request. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

151. The permittee shall measure and record the pH of the scrubber media used for SN-16-01, SN-16-02, SN-16-05, and SN-16-06 every three hours. The caustic pH records shall be kept on-site and made available to Department personnel upon request. The caustic pH corresponding to the most recent satisfactory test event shall be established as the minimum for purposes of continuous compliance until the next test is performed. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

152. RESERVED

153. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

154. Only one of the sources SN-16-19 and SN-16-29 shall be operated at any given time. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

155. The combustion zone temperature of the Vent Gas Oxidizer, SN-16-18, shall be maintained at a minimum of 1000 ºF. 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. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

156. The permittee shall maintain readily accessible records of the dimensions and capacity of the phthalic anhydride storage vessel, as required by §63.123(a). [Reg.19.304 and 40 C.F.R. § 63, Subpart G]

157. All equipment in phthalic anhydride 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). [Reg.19.304 and 40 C.F.R. § 63, Subpart H]

158. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

159. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

160. The permittee shall conduct stack testing for SO_2 at SN-16-01 in 2002, at SN-16-02 in 2003, and SN-16-24 in the first calendar year it operates more than 25% per Plantwide Condition #18. A proposed test method shall be submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. The method must receive Department approval prior to the testing event. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

161. The permittee shall conduct stack testing for Br_2 at SN-16-02 in calendar year 2017and before the end of each fifth calendar year 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. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

162. RESERVED

163. RESERVED

164. RESERVED

164a. The permittee shall not exceed a throughput of 18.25 million pounds per twelve consecutive months at PA Tank (T-9340) (SN-16-31). [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

164b. The permittee shall maintain monthly records demonstrating compliance with Specific Condition #164a. Records shall be updated by the 15th day following the month to which the records pertain, made available to Department personnel upon request, and submitted in accordance with General Provision 7. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

Boilers

There are four boilers at the Albemarle South facility. BH-01 and BH-02 have 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. BH-03 and BH-04 are temporary boilers of capacity up to 100 MMBtu/hr. 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 four 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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq*. and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
BH-01	#1 Boiler 340 MMBtu/hr	PM_{10}	2.6	-
		SO_2	-	-
		VOC	1.9	-
		CO	13.6	-
		NO_x	47.6	-
BH-02	#2 Boiler 340 MMBtu/hr	PM_{10}	2.6	-
		SO_2	-	-
		VOC	1.9	-
		CO	13.6	-
		NO_x	47.6	-
BH-03	Rental Boiler #1 ≤100 MMBtu/hr	PM_{10}	0.8	-
		SO_2	-	-
		VOC	0.6	-
		CO	3.7	-
		NO_x	3.7	-
BH-04	Rental Boiler #2 ≤100 MMBtu/hr	PM_{10}	0.8	-
		SO_2	-	-
		VOC	0.6	-
		CO	3.7	-
		NO_x	3.7	-
BH-01 BH-02 BH-03 BH-04	Combined Boiler Emissions	PM_{10}	-	22.7
		SO_2	5.6	24.6
		VOC	-	16.4
		CO	-	119.2
		NO_x	-	417.0

166. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
BH-01	#1 Boiler 340 MMBtu/hr	PM Total HAP	3.4 N/A	- -
BH-02	#2 Boiler 340 MMBtu/hr	PM Total HAP	3.4 N/A	- -
BH-03	Rental Boiler #1 ≤100 MMBtu/hr	PM Total HAP	0.8 N/A	- -
BH-04	Rental Boiler #2 ≤100 MMBtu/hr	PM Total HAP	0.8 N/A	- -
BH-01 BH-02 BH-03 BH-04	Combined Boiler Emissions	PM Total HAP	- N/A	29.8 3.82

167. The following sources shall not exceed 5% opacity: SN-BH-01, SN-BH-02, SN-BH-03 and SN-BH-04. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

168. 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. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

169. The permittee shall monitor and record the H_2S concentration and the combined gas flow to the boilers at least once every six hours. The measured concentration shall be used to determine the mass emission rate of SO_2 from the boilers assuming a 1:1 molar ratio of sulfur conversion at the boilers. A rolling 30-day average H_2S concentration may be used to calculate the lb/hr emissions for compliance demonstration with the 5.60 lb/hr emission limit of Specific Condition #165. A rolling 12-month total shall be used to calculate tpy for compliance demonstration with the combined 24.53 ton/yr value of Specific Condition #165. A shorter averaging period may be used in lieu of the rolling 30-day average (e.g., if all three-hour rolling averages as currently calculated are below the emission limit, a rolling 30-day average is not required).

    All records shall be updated by the 15th day following the month to which the records pertain. Records shall be kept on-site, made available to Department personnel, and otherwise kept in accordance with General Provision #7. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

170. The permittee shall perform stack testing on SN-BH-01 and SN-BH-02 in 2020 and before the end of each fifth calendar year 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. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

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

170a. Any rental boiler brought on site must have a maximum heat input capacity of 100 MMBtu/hr or less and be natural gas fired. [Regulation 19, §19.901; 40 C.F.R. Part 52, Subpart E; A.C.A. §8-4-203 as referenced by A.C.A. §8-4-304 and §8-4-311; and 40 C.F.R. Part 70.6]

170b. For any units brought on-site that are constructed or modified after June 9, 1989, the permittee shall comply with all applicable provisions of 40 C.F.R. Part 60, Subpart A - General Provisions and Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Applicable provisions of Subpart Dc include, but are not limited to, the following: [Regulation 19, §19.304; and 40 C.F.R. 60, Subpart Dc]

a. The owner or operator shall submit notification of the date of construction or reconstruction, anticipated startup, and actual startup. This notification shall include the design heat input capacity of the boiler and identification of fuels (natural gas only) to be combusted in the affected facility. [Regulation 19, §19.304 and 40 C.F.R. §60.48c(a)]
b. Records of the amounts of fuel combusted each day must be kept for each one of SN-BH-03 and SN-BH-04. These records shall be kept on site for two years following the date of such records. [Regulation 19, §19.304 and 40 C.F.R. §60.48c(g) and (i)]

170c. Any boiler installed under sources BH-03 and BH-04 must meet the requirements of a Temporary Boiler as defined in 40 C.F.R. §63.7570. Records verifying the temporary status of BH-03 and BH-04 shall be kept onsite and made available to Department personnel upon request. [Reg.19.705, §19.304, 40 C.F.R. §60.48c(g) and (i), and 40 C.F.R §63.7570]

a. *Temporary boiler* means any gaseous or liquid fuel boiler or process heater that is designed to, and is capable of, being carried or moved from one location to another by means of, for example, wheels, skids, carrying handles, dollies, trailers, or platforms. A boiler or process heater is not a temporary boiler or process heater if any one of the following conditions exists:
    i. The equipment is attached to a foundation
    ii. The boiler or process heater or a replacement remains at a location within the facility and performs the same or similar function for more than 12 consecutive months, unless the regulatory agency approves an extension. An extension may be granted by the regulating agency upon petition by

the owner or operator of a unit specifying the basis for such a request. Any temporary boiler or process heater that replaces a temporary boiler or process heater at a location and performs the same or similar function will be included in calculating the consecutive time period.

iii. The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least 2 years, and operates at that facility for at least 3 months each year.

iv. The equipment is moved from one location to another within the facility but continues to perform the same or similar function and serve the same electricity, process heat, steam, and/or hot water system in an attempt to circumvent the residence time requirements of this definition.

170d. The permittee shall not exceed the following specific emission factor limits for any boiler installed under sources BH-03 and BH-04 [Reg. 19.501 and 40 C.F.R. § 52 Subpart E]

Pollutant	Emission Factor (lb/MMscf)
CO	37.0
NO_x	37.0

170e. The permittee shall maintain records demonstrating compliance with Specific Condition #170d. These records shall be kept onsite and made available to department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

NC-21 Flame Retardant Process

Benzene, ethylene dichloride, 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. DPE Heavies (SN-15-18 and SN-15-20) loading and storage are permitted under the NC-15 Unit.

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

Specific Conditions

171. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
21-01	Emission Control: Vent Gas Incinerator (FL-3671) (CD-21-01) 5.02 MMBtu/hr	PM_{10} SO_2 VOC CO NO_x	0.1 0.1 1.8 5.0 0.5	0.5 0.1 5.3 21.9 2.2
21-02	NC-21 Fugitive Emissions	VOC	4.0	17.2
21-03	Wastewater Effluent	VOC	0.1	0.1
15-18	DPE Byproduct/Heavy Organics Storage Tank (serving NC-21)	VOC	See NC-15	See NC-15
15-20	DPE Byproduct/Heavy Organics Truck Loading	VOC	See NC-15	See NC-15

172. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
21-01	Emission Control: Vent Gas Incinerator (FL-3671) (CD-21-01) 5.02 MMBtu/hr	PM Total HAP Benzene HCl	0.1 N/A 1.71 N/A	0.5 6.88 5.24 1.54

SN-#	Description	Pollutant	lb/hr	tpy
21-02	NC-21 Fugitive Emissions	Total HAP	N/A	9.10
		Benzene	1.37	6.02
		HCl	N/A	0.83
		Methanol	0.34	1.50
21-03	Wastewater Effluent	Total HAP	N/A	0.01
		Benzene	0.01	0.01

173. SN-21-01 shall not exceed 5% opacity. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

174. The permittee is subject to all applicable provisions of the National Emission Standard for Organic Hazardous Air Pollutants for Equipment Leaks. [Reg.19.304 and 40 C.F.R. § 63, Subpart H]

175. 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. As allowed in the MON MACT, the permittee has chosen to comply with the applicable requirements under §63.2535 (k). [Reg.19.304 and 40 C.F.R. § 63, Subpart FFFF]

176. 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. [Reg.19.304 and 40 C.F.R. § 61 Subpart FF]

177. 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. A formal RATA is not required since the monitoring system is not a CEM. [Reg.18.1003 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

178. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

179. 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. [Reg.19.304 and 40 C.F.R. § 61, Subpart V, 61.242-11(c)]

180. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-22 Production

Bromine and polystyrene are reacted in an organic solvent, in the presence of a catalyst, to form brominated polystyrene. Bromine vapors from raw material storage are abated by the caustic scrubber (SN-TB-14). The brominated polystyrene product is recovered by vaporization of the solvent and then the product is processed to its final configuration and packaged. Process water from the product recovery area is collected in the hold-up drum (SN-TB-43). Fugitive dusts in the packaging area are collected in the dust collector baghouse (SN-TB-08).

The co-product HBr produced from the reaction is absorbed in water and recycled at the South Plant Before being recycled, aqueous HBr co-product is stored in a tank (HBr solution storage, SN-TB-42). Any HBr vapor not absorbed in the water is routed to a caustic scrubber. The vent stream from this caustic scrubber is routed to a solvent absorption/recovery unit (SN-TB-41) along with other vent streams from the process and storage areas. The primary function of the solvent absorption/recovery unit is to recover the organic solvent used in the process. The above operating scheme is applicable for all scenarios.

Off-spec NC-22 product can be mixed with NC-22 solvent from the NC-22 process and re-introduced to the NC-22 process downstream of the reactor. First, the solvent from the NC-22 is loaded into vapor balanced trailers which transport the solvent to the loading area nearest R-9332.

Off-spec NC-22 solids to be reworked are pneumatically fed from the bulk bag unloader to hopper H-9351 which is above reactor R-9332. The conveying air is routed through a dust collector (SF-9351). A nitrogen pad is used on the line from H-9351 to R-9332. An agitator is used to mix the system until the off-spec NC-22 product has dissolved. R-9332 is then vented to two carbon drums in series to minimize emissions. The solvent/BCM dissolved mixture is then transferred back to the trailer to be transported back to the NC-22 plant for reprocessing. At the NC-22 process, the solvent is pressured out of the trailer using nitrogen and is pumped into D-9530, the crude NC-22 product storage drum. The trailer is then vented down to the HP-3010 carbon bad.

Specific Conditions

181. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
TB-04	Product Baghouse	PM_{10} VOC	0.9 0.3	4.0 1.0
TB-05	Pneumatic Vacuum Convey System	PM_{10}	0.5	2.0
TB-08	Dust Collector Baghouse	PM_{10}	0.3	1.4
TB-29	NC-22 Fugitive Emissions	VOC	1.9	7.2
TB-41	Carbon Bed Solvent Recovery Units	VOC	15.8	18.4

SN-#	Description	Pollutant	lb/hr	tpy
TB-42	HBr Solution Storage	VOC	0.1	0.2
TB-43	Centrate Hold Up Drum	VOC	Routed to TB-41	
TB-44	Central Vacuum System	PM_{10}	0.2	0.5
TB-47	Re-work Reactor (Carbon Adsorption)	VOC	50.5	0.4
TB-48	Re-work Hopper (Dust Collector, 99.9% efficient)	PM_{10}	0.2	0.2
TB-49	Bulk Bag Unloader	PM_{10}	0.3	0.1

181a. RESERVED

181b. RESERVED

181c. RESERVED

182. The permittee shall not exceed the non-criteria emission rates set forth in the following table during production under Scenario A. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
TB-04	Product Baghouse	PM	0.9	4.0
TB-05	Pneumatic Vacuum Convey System	PM	0.5	2.0
TB-08	Dust Collector Baghouse	PM	0.3	1.4
TB-14	Bromine Scrubber	Br_2	0.10	0.44
TB-29	NC-22 Fugitive Emissions	Br_2 HBr Total HAP HCl Methylene Chloride	0.22 0.36 N/A N/A N/A	0.94 1.54 0.68 0.24 0.10
TB-41	Carbon Bed Solvent Recovery Units	Br_2 HBr Total HAP HCl Methylene Chloride	0.01 0.05 N/A 0.01 N/A	0.01 0.08 0.21 0.01 0.20
TB-42	HBr Solution Storage	Br_2 HBr Total HAP HCl	0.01 0.18 N/A N/A	0.05 0.79 0.05 0.05
TB-44	Central Vacuum System	PM	0.2	0.5
TB-45	Hydrazine Hydrate Tote	Total HAP Hydrazine	N/A N/A	0.01 0.01
TB-47	Re-work Reactor (Carbon Adsorption)	Total HAP Methylene Chloride	N/A N/A	0.10 0.10

SN-#	Description	Pollutant	lb/hr	tpy
TB-48	Re-work Hopper (Dust Collector, 99.9% efficient)	PM	0.2	0.2
TB-49	Bulk Bag Unloader	PM	0.3	0.1

182a. RESERVED

182b. RESERVED

182c. RESERVED

183. The permittee shall maintain a carbon regeneration system at SN-TB-41 capable of completing a minimum of three regeneration for each bed for every 24-hour of bed/source operation. This minimum regeneration rate shall be sustained at all times during operation of the NC-22 process. The regeneration system shall be checked no less than once per week, to ensure that the regeneration rate is being met. Records of each inspection shall be maintained, kept on-site, and made available to Department personnel upon request. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

183a. RESERVED

183b. RESERVED

184. The permittee shall not produce more than 3,137 batches at NC-22 per rolling 12-month period. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

184b. The permittee shall not process more than 660 tons of solid product rework at SN-TB-4 7 per rolling 12-month period. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

185. The permittee shall maintain records of each batch produced. These records shall be kept on-site and made available to Department personnel upon request. Each individual month's batch total and each month's twelve (12) month rolling total shall be updated by the 15th of the month following the month to which the records pertain. A report including each individual month batch total as well as a 12-month rolling total shall be submitted to the Department in accordance with General Provision #7. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

185b. The permittee shall maintain records of each batch of solid product reworked at SN-TB-47. Each individual month's batch total and each month's twelve (12) month rolling total shall be updated by the 15th of the month following the month to which the records pertain. A report including each individual month batch total as well as a 12-month rolling total shall be submitted to the Department in accordance with General Provision #7. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

186. The permittee shall perform a visual inspection of the pumps driving the scrubber media at SN-TB-14 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-23 Production

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

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

Ethanol is recovered from the ethyl bromide and stored in tanks. The vapors are controlled by a recovery system, consisting of condensers, absorbers, and separators. TBBPA is a solid product. Dust generated by the handling and packaging of TBBPA is controlled by fabric filters. Unreacted solvent ethanol is reclaimed and returned to the process origin as a raw material. Brines containing high concentrations of bromides are generated and recycled to produce bromine (raw material). A byproduct stream consisting of TBBPA, underbrominated TBBPA, isomers, and degradation products is also produced. Caustic is added to the process recycle stream to prevent corrosion.

The silo emission bubble (SN-23-06, SN-23-07, and SN-23-08) includes source numbers assigned to three silo processes. Each silo vents to two identical fabric filter baghouses. This permit allows the facility to operate any of three silos at any given time. Fresh production can only be received by one silo at any given time.

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

The NC-23 production unit has an alternate operating scenario involved in the production of methyl bromide (MeBr). Specific Conditions #281 through #313 are the provisions for the NC-23 MeBr production scenario.

Specific Conditions

187. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitive Emissions	VOC	1.2	5.0
23-02	Raw Material Unloading Baghouse	PM_{10} VOC	0.1 3.8*	0.5 16.6*
23-03	Raw Material Scrubber	VOC	0.4	1.6
23-04	By-product Loading	VOC	0.5	2.0
23-05	Vent Absorber	VOC	2.9	12.7
23-06 23-07 23-08	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse (emission bubble)	PM_{10} VOC	0.3 3.8*	1.4 16.6*
23-09	Product Packaging Baghouse	PM_{10} VOC	0.1 3.8*	0.5 16.6*

SN-#	Description	Pollutant	lb/hr	tpy
23-10	Product Packaging Dust Collection	PM_{10} VOC	0.1 3.8*	0.5 16.6*
23-11A	Product Loading Baghouse	PM_{10} VOC	0.1 3.8*	0.5 16.6*
23-11B	Product Loading (Railcar)			
23-12A	Product Loading Baghouse	PM_{10} VOC	0.1 3.8*	0.5 16.6*
23-12B	Product Loading (Truck)			
23-13	Floor Vacuum Baghouse	PM_{10} VOC	0.1 3.8*	0.5 16.6*

* Total emission limit for VOC emitted from NC-23 production unit baghouses.

188. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitive Emissions	Br_2 HBr Total HAP	0.22 0.11 N/A	0.97 0.49 0.13
23-02	Raw Material Unloading Baghouse	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*
23-03	Raw Material Scrubber	HBr Total HAP	0.35 N/A	1.50 0.88
23-05	Vent Absorber	Total HAP	N/A	1.46
23-06 23-07 23-08	Receiving Silo Baghouse Blending Silo Baghouse Discharging Silo Baghouse	PM HBr Total HAP	0.6 0.23* N/A	2.7 0.97* 1.32*
23-09	Product Packaging Baghouse	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*
23-10	Product Packaging Dust Collection	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*
23-11A	Product Loading Baghouse	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*
23-11B	Product Loading (Railcar)			
23-12A	Product Loading Baghouse	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*
23-12B	Product Loading (Truck)			
23-13	Floor Vacuum Baghouse	PM HBr Total HAP	0.2 0.23* N/A	0.9 0.97* 1.32*

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

* Total emission limit for HBr, acetaldehyde, chloroethane emitted from NC-23 production unit baghouses.

189. 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). [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

190. 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. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

191. The permittee shall operate a continuous flow monitor alarm at SN-23-03 (Raw Material Scrubber). A record of the minimum flow set point value for the scrubber shall be maintained. The permittee shall also keep a log of all alarm incidents and subsequent corrective action. These records shall be maintained on-site and made available to Department personnel upon request. The flow rate history and alarm monitoring shall be confirmed by the most recent satisfactory test for purposes of continuous compliance until the next test is performed. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

192. The permittee shall operate a continuous flow monitor alarm at SN-23-05 (Vent Absorber (scrubber). A record of the minimum flow set point value for the scrubber shall be maintained. The permittee shall also keep a log of all alarm incidents and subsequent corrective action. These records shall be maintained on-site and made available to Department personnel upon request. The flow rate history and alarm monitoring shall be confirmed by the most recent satisfactory test for purposes of continuous compliance until the next test is performed. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

193. The permittee shall be limited to 96 total fills per day for the drums venting at SN-23-04. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

194. The permittee shall maintain daily records of drum fills at SN-23-04 in order to demonstrate compliance with the previous condition. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

195. The permittee shall conduct stack testing for VOC at SN-23-03, SN-23-05, and either SN-23-06, SN-23-07, or SN-23-08 (whichever process silo is in receiving mode) in 2020 and before the end of each fifth calendar year thereafter. Testing shall be conducted using EPA Reference Method 18, and shall be coordinated in advance with the Compliance Inspector Supervisor. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

196. The permittee shall conduct stack testing for HBr at source SN-23-06, SN-23-07, or SN-23-08 (whichever process silo is in receiving mode) in 2020 and before the end of each fifth calendar year thereafter. Testing shall be conducted using EPA Reference Method 26A, and shall be coordinated in advance with the Compliance Inspector Supervisor.

[Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

196a. RESERVED

196b. RESERVED

196c. The permittee shall limit the NC-23 primary reactor throughput of ABRM1 to 1.752 million pounds per consecutive 12-month rolling period. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

196d. The permittee shall keep monthly records of the amount of ABRM1 added to the reactor along with a twelve month rolling total. All records shall be updated by the 15th day following the month to which the records pertain. Records shall be kept on-site, made available to Department personnel, and otherwise kept in accordance with General Provision 7. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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. 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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
BT-01	Feed Brine Oil Separator/Surge Tank (V-3011)	VOC	0.1	0.1
BT-11	Neutralization Tank (T-3110)	VOC	0.1	0.1
BT-12	Tail Brine Line Vent	VOC	0.1	0.1
BT-13	Tail Brine Tank (T-3101)	VOC	0.1	0.1
BT-16	Brinefield Oil/Water Separator (T-7001)	VOC	30.0	1.8
BT-17	Brinefield Oil Storage Tank (T-7002)	VOC	16.4	1.7
BT-21	Five Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122, Y-3123, Y-3124)	PM_{10} VOC	4.2 3.4	18.1 14.8
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	VOC	0.1	0.1
BT-23	Line Vent	VOC	0.1	0.1
BT-24	Line Vent	VOC	0.1	0.1
BT-25	DRT Tail Brine Line Vent	VOC	0.1	0.1
BT-26	DRT Tail Brine Line Vent	VOC	0.1	0.1
BT-27	Tail Brine Line Vent	VOC	0.1	0.1
BT-28	Tail Brine Line Vent	VOC	0.1	0.1

198. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
BT-01	Feed Brine Oil Separator/Surge Tank (V-3011)	H_2S	0.14	0.61
BT-11	Neutralization Tank (T-3110)	Ammonia H_2S Total HAP Cl_2 or Halogens	0.20 0.01 N/A N/A	0.90 0.05 0.13 0.13
BT-12	Tail Brine Line Vent	Ammonia Cl_2 or Halogens	0.01 N/A	0.05 0.05
BT-13	Tail Brine Tank (T-3101)	Ammonia H_2S Total HAP Cl_2 or Halogens	0.02 0.01 N/A N/A	0.09 0.05 0.05 0.05
BT-16	Brinefield Oil/Water Separator (T-7001)	H_2S	0.01	0.05
BT-17	Brinefield Oil Storage Tank (T-7002)	H_2S	0.01	0.05
BT-21	Five Tail Brine Cooling Towers (Y-3120, Y-3121, Y-3122, Y-3123, Y-3124)	PM Ammonia Br_2 HBr Total HAP Cl_2 HCl	4.2 10.23 0.62 0.93 N/A N/A N/A	18.1 44.7 2.72 4.07 1.36 2.04 1.36
BT-22	Brine Management, Fugitive Emissions Included in Ground Brine Ponds	H_2S Ammonia Total HAP Cl_2 or Halogens	0.02 0.02 N/A N/A	0.09 0.09 0.09 0.09
BT-23	Line Vent	Ammonia Total HAP Cl_2 or Halogens	0.01 N/A N/A	0.05 0.05 0.05
BT-24	Line Vent	Ammonia Total HAP Cl_2 or Halogens	0.01 N/A N/A	0.05 0.05 0.05
BT-25	DRT Tail Brine Line Vent	Ammonia Total HAP Cl_2 or Halogens	0.01 N/A N/A	0.05 0.05 0.05
BT-26	DRT Tail Brine Line Vent	Ammonia Total HAP Cl_2 or Halogens	0.01 N/A N/A	0.05 0.05 0.05
BT-27	Tail Brine Line Vent	Ammonia Total HAP Cl_2 or Halogens	0.01 N/A N/A	0.05 0.05 0.05

SN-#	Description	Pollutant	lb/hr	tpy
BT-28	Tail Brine Line Vent	Ammonia	0.01	0.05
		Total HAP	N/A	0.05
		Cl_2 or Halogens	N/A	0.05

199. The following sources shall not exceed 5% opacity: SN-BT-11, SN-BT-12, SN-BT-13, and SN-BT-21. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

200. The rate of feed brine to be processed at SN-BT-01 shall be limited to 10,200 gallons of brine per minute. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

201. 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. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

202. 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. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

203. 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. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

204. The permittee shall keep readily accessible records on-site which demonstrate compliance with annual throughput limits at SN-BT-16 and SN-BT-17. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

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 be 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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
DM-01	Ethylene Glycol Tank	VOC	0.1	0.2
DM-02	Thermal Oxidizer 1.12 MMBtu/hr	PM_{10} SO_2 VOC CO NO_X	0.5 6.0 0.1 0.1 0.4	2.3 26.3 0.5 0.5 1.4
DM-07	Fugitive Emissions	VOC	4.1	18.0

206. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
DM-01	Ethylene Glycol Tank	Total HAP	N/A	0.11
DM-02	Thermal Oxidizer 1.12 MMBtu/hr	PM Total HAP	0.5 N/A	2.3 0.01
DM-03	Hydrogen Peroxide Tank I	H_2O_2	N/A	3.55
DM-06	Hydrogen Peroxide Tank II	H_2O_2	N/A	3.55
DM-07	Fugitive Emissions	H_2O_2 Total HAP	0.10 N/A	0.44 0.88

207. SN-DM-02 shall not exceed 5% opacity. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

208. The combustion zone temperature of the Thermal Oxidizer (SN-DM-02) shall be maintained at a minimum of 1200 °F. A temperature monitoring device operated in accordance with the manufacturer's specifications and recommendations for use shall be

the compliance mechanism for this condition. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

209. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

210. The permittee shall conduct stack testing on SN-DM-02 for the following compounds, using the test methods indicated. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

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

The testing shall be conducted in 2020 and before the end of each fifth calendar year thereafter, except for SO_2 testing, which shall be performed in 2016 and before the end of each second calendar year thereafter. All particulate measured shall be assumed to be PM_{10}.

Maintenance and Support Facilities

Extraneous Water System

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

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

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

Specific Conditions

211. The permittee shall not exceed the emission rates set forth in the following table. In order to demonstrate compliance with the emission limits, 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. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-01	Extraneous Water System	VOC	6.0	26.3

212. The permittee shall not exceed the emission rates set forth in the following table. In order to demonstrate compliance with the emission limits, 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. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-01	Extraneous Water System	Total HAP	N/A	12.33
		Methanol	0.98	4.28
		Methyl Bromide	0.10	0.41
		Methylene Chloride	N/A	1.48

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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-02	Drying Bed	VOC	0.1	0.5

214. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

215. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

French Drain Sumps

Albemarle Corporation operates a system of sumps at the 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 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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-03	French Drain Sump Bubble	VOC	0.3	1.4

217. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-03	French Drain Sump Bubble	Br_2 Total HAP Benzene	0.1 N/A 0.01	0.44 0.12 0.01

218. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

Plantwide Refrigerant Fugitive Emissions

VOC and Non-VOC/Non-HAP refrigerants may be used in the various heat exchange processes at Albemarle. Refrigerant may be emitted from fittings, seals, and other refrigeration system components. The permitted hourly emission rate shown here is a conservative assumption that 50% of the total annual charge (9.62 tons) of refrigerant emissions estimates occur in a single month. Compliance is demonstrated based on work practices, mass balances, and recordkeeping according to Plantwide Condition #12.

219. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-12	Plantwide Fugitive Refrigerant Emissions	VOC	14.2	9.7

220. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-12	Plantwide Fugitive Refrigerant Emissions	Non-VOC/Non-HAP Refrigerant	N/A	9.62

221. RESERVED

222. RESERVED

223. RESERVED

Carpenter's Shop

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

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

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

Specific Conditions

224. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-05	Carpenter's Shop Fugitives	VOC	0.7	2.2

225. 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. [.19.304 and 40 C.F.R. § 63.800]

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 minimis. Sulfur disposal will result in emissions of VOC and SO_2.

Specific Conditions

226. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-06	South Landfill	SO_2 VOC	0.5 7.0	0.2 2.4

227. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-06	South Landfill	Total HAP	N/A	1.70

228. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

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. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

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

230. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-07	Gasoline Storage Tank	Total HAP Benzene	N/A 0.25	0.06 0.01

231. The gasoline storage tank shall be limited to 200,000 gallons throughput per rolling 12 months. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

232. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

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 minimis 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 drains 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 minimis under Group A Number 13.

95ND141/Stabrom 909 Production at NC-14

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

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

During these production processes Br_2, BrCl, and Cl_2 may be vented from the reactors to the reactive caustic scrubber (SN-TB-14). Particulate emissions are not expected but quantified for the inorganic acid weighing vessel (SN-TB-40). Oxygen, nitrogen, and water vapor vent from the product storage due to loading and unloading of the product solution and due to breathing losses from daily temperature fluctuations.

Specific Conditions

233. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr*	tpy*
TB-14	Caustic Scrubber	Br_2	0.10	0.44
		BrCl	N/A	0.44
		Total HAP	N/A	0.44
		Cl_2	N/A	0.44
TB-29	Fugitive Emissions	Br_2	0.10	0.44
		BrCl	N/A	0.44
		Total HAP	N/A	0.44
		Cl_2	N/A	0.44

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

234. The permittee shall conduct initial stack testing for SN-TB-14 within 1500 operating hours following permit issuance of operation of the 95ND141/Stabrom 909 Production Scenario. This testing was last performed in 2016. The permittee shall conduct subsequent testing before the end of each fifth calendar year thereafter. The permittee shall use Method 26A to verify compliance with the Br_2, BrCl, and Cl_2 emission rates set forth in Specific Condition #233. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Alternate Control Device for SN-BR-12

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

Specific Conditions

235. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
SN-BR-15	Caustic Drum	Br_2	1.60	0.10
		Total HAP	N/A	0.10
		Cl_2	N/A	0.10

236. SN-BR-15 shall not exceed 5% opacity. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

237. The permittee shall take immediate corrective action when visible emissions are detectable from SN-BR-15 and shall not operate the source until it is capable of meeting opacity requirements. Records shall be kept of any upset conditions at SN-BR-15 and submitted in accordance with Plantwide Condition 10. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

238. The permittee shall not operate SN-BR-15 more than 120 hours per twelve consecutive months and shall only operate the source during scheduled plant shutdowns or emergency situations where the Bromine Area Scrubber, SN-BR-12, is out of service. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

239. The permittee shall keep records demonstrating compliance with Specific Condition #238. Records shall be updated monthly by the fifteenth day following the month to which the records pertain. The records shall include a twelve month rolling total. Records shall be made available to Department personnel upon request, and otherwise submitted in accordance with General Provision #7. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Generator Usage

The facility has a number of engines used during emergencies to provide electricity and to pump water.

Specific Conditions

240. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-01	Fire Pump #1 CI Emergency Engine 208 hp	PM_{10}	0.5	0.2
		SO_2	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO_X	6.5	1.7
MS-08-02	Fire Pump #2 CI Emergency Engine 208 hp	PM_{10}	0.5	0.2
		SO_2	0.5	0.2
		VOC	0.6	0.2
		CO	1.4	0.4
		NO_X	6.5	1.7
MS-08-03	#1 Water Well (Potable Water Backup) CI Emergency Engine 235 hp	PM_{10}	0.6	0.2
		SO_2	0.5	0.2
		VOC	0.6	0.2
		CO	1.6	0.4
		NO_X	7.3	1.9
MS-08-04	#4 Outfall Backup SI Emergency Engine 13.4 hp	PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.4	0.1
		CO	0.7	0.2
		NO_X	0.8	0.2
MS-08-05	Phone/Admin Backup #1 SI Emergency Engine 26.8 hp	PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.7	0.2
		CO	1.4	0.4
		NO_X	1.6	0.4
MS-08-06	Security Backup SI Emergency Engine 50.0 hp	PM_{10}	0.1	0.1
		SO_2	0.1	0.1
		VOC	0.8	0.2
		CO	1.6	0.4
		NO_X	1.9	0.5
MS-08-07	Fire Pump #3 CI Emergency Engine 375 hp	PM_{10}	0.9	0.3
		SO_2	0.8	0.2
		VOC	1.0	0.3
		CO	2.6	0.7
		NO_X	11.7	3.0

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-08	Phone/Admin Backup #2 SI Emergency Engine 82 hp	PM_{10} SO_2 VOC CO NO_X	0.1 0.1 1.9 2.8 1.9	0.1 0.1 0.1 0.2 0.1
MS-08-09	Bromine Caustic Scrubber Pump CI Emergency Engine 56 hp	PM_{10} SO_2 VOC CO NO_X	0.2 0.2 0.2 0.4 1.8	0.1 0.1 0.1 0.1 0.5

241. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-01	Fire Pump #1 CI Emergency Engine 208 hp	PM Total HAP Benzene	0.5 N/A 0.01	0.2 0.01 0.01
MS-08-02	Fire Pump #2 CI Emergency Engine 208 hp	PM Total HAP Benzene	0.5 N/A 0.01	0.2 0.01 0.01
MS-08-03	#1 Water Well (Potable Water Backup) CI Emergency Engine 235 hp	PM Total HAP Benzene	0.6 N/A 0.01	0.2 0.01 0.01
MS-08-04	#4 Outfall Backup SI Emergency Engine 13.4 hp	PM Total HAP Benzene Methanol Methylene Chloride	0.1 N/A 0.01 0.01 N/A	0.1 0.01 0.01 0.01 0.01
MS-08-05	Phone/Admin Backup #1 SI Emergency Engine 26.8 hp	PM Total HAP Benzene Methanol Methylene Chloride	0.1 N/A 0.01 0.01 N/A	0.1 0.01 0.01 0.01 0.01
MS-08-06	Security Backup SI Emergency Engine 50.0 hp	PM Total HAP Benzene Methanol Methylene Chloride	0.1 N/A 0.01 0.01 N/A	0.1 0.01 0.01 0.01 0.01
MS-08-07	Fire Pump #3 CI Emergency Engine 375 hp	PM Total HAP Benzene	0.9 N/A 0.01	0.3 0.01 0.01

SN-#	Description	Pollutant	lb/hr	tpy
MS-08-08	Phone/Admin Backup #2 SI Emergency Engine (LPG) 82 hp	PM Total HAP Benzene Methanol Methylene Chloride	0.1 N/A 0.01 0.01 N/A	0.1 0.01 0.01 0.01 0.01
MS-08-09	Bromine Caustic Scrubber Pump CI Emergency Engine 56 hp	PM Total HAP Benzene	0.2 N/A 0.01	0.1 0.01 0.01

General Generator and Fire Pump Usage Conditions

242. The permittee shall keep onsite an updated log book or other well organized format that includes all reciprocating internal combustion engines located at the facility. The log shall contain information that identifies source number, source description, serial number, date of purchase and installation, manufacturer, model, model year, manufacturer's rated output (hp), manufacturer's emissions data, emissions certification number if complying by NSPS IIII or JJJJ, emergency or non-emergency use designation, and whether or not NSPS IIII or JJJJ or NESHAP ZZZZ applies. Copies of manufacturer's specifications, manufacturer's emission data, and emission certifications shall be kept as an appendix to the log book. For engines not subject to NSPS IIII or JJJJ, the manufacturer's emission data and emissions certification may omitted provided that the permittee demonstrates reasonable attempts have been made obtain that information and it is found that such information no longer exists or never existed. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

243. The permittee shall not exceed 20% opacity from any diesel fired engine or 5% opacity from engines firing any other fuel. Compliance shall be demonstrated by the use of diesel, gasoline, natural gas, or liquefied petroleum gas. [Reg.19.503 and 40 C.F.R. § 52 Subpart E]

244. The permittee shall only operate those stationary engines identified in Specific Condition #240. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

245. The permittee shall conduct inspections and perform maintenance as recommend by the manufacturer of the engine and keep a record of these activities. These records shall be updated by the 15th of the month following the month to which the records pertain, kept onsite, and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

NESHAP ZZZZ Conditions for Existing Stationary Emergency Engines ≤500 HP

246. SN-MS-08-01 through SN-MS-08-06 are subject to and shall comply with all applicable provisions of 40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. These requirements include, but are not limited to the following: [Reg.19.304 and 40 C.F.R. § 63, Subpart ZZZZ]

a. The permittee shall minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes. [Reg.19.304 and 40 C.F.R. §63.6603]

b. The permittee shall change oil and filter every 500 hours of operation or annually, whichever comes first. The permittee may extend the oil change requirement through utilizing an oil analysis program described by §63.6625 (j). [Reg.19.304 and 40 C.F.R. § 63.6603]

c. The permittee shall inspect the air cleaner every 1,000 hours of operation or annually, whichever comes first, and replace as necessary. [Reg.19.304 and 40 C.F.R. § 63.6603]

d. The permittee shall inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary. [Reg.19.304 and 40 C.F.R. § 63.6603]

e. The permittee shall operate and maintain the stationary RICE and after-treatment control device (if any) according to the manufacturer's emission-related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions: [Reg.19.304 and 40 [REG.19.304 AND 40 C.F.R. 63.6625 (e)]

f. The permittee shall install a non-resettable hour meter if one is not already installed. [Reg.19.304 and 40 C.F.R. § 63.6625 (f)]

g. The permittee must operate the emergency stationary RICE according to the requirements in Specific Conditions ##246.g.i through #246.g.iii. In order for the engine to be considered an emergency stationary RICE, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in Specific Conditions ##246.g.i through #246.g.iii, is prohibited. If the permittee does not operate the engine according to the requirements in Specific Conditions ##246.g.i through #246.g.iii, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. [Reg.19.304 and 40 C.F.R. § 63.6640 (f)]

   i. There is no time limit on the use of emergency stationary RICE in emergency situations. [Reg.19.304 and 40 C.F.R. § 63.6640 (f)(1)]

   ii. The permittee may operate the emergency stationary RICE for any combination of the purposes specified in Specific Conditions #246.g.ii.1 through #246.g.ii.3 for a maximum of 100 hours per calendar year. [Reg.19.304 and 40 C.F.R. § 63.6640 (f)(2)]

      1. Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or

equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year. [Reg.19.304 and 40 C.F.R. § 63.6640 (f)(2)(i)]

2. Emergency stationary RICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see § 63.14), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. [Reg.19.304 and 40 C.F.R. § 63.6640 (f)(2)(ii)]

3. Emergency stationary RICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [Reg.19.304 and 40 C.F.R. § 63.6640 (f)(2)(iii)]

iii. Emergency stationary RICE may be operated for up to 50 hours per calendar year in non-emergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in Specific Condition #246.g.ii of this section. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

h. The permittee shall keep the records described as follows: [Reg.19.304 and 40 C.F.R. § 63.6655 (a)]

i. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in § 63.10(b)(2)(xiv). [Reg.19.304 and 40 C.F.R. § 63.6655 (a)(1)]

ii. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment. [Reg.19.304 and 40 [REG.19.304 AND 40 C.F.R. 63.6655 (a)(2)]

iii. Records of all required maintenance performed on the air pollution control and monitoring equipment. [Reg.19.304 and 40 [REG.19.304 AND 40 C.F.R. 63.6655 (a)(4)]

iv. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation. [Reg.19.304 and 40 C.F.R. § 63.6655 (a)(5)]

v. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in Specific Condition #246.g.ii.2 or #246.g.ii.3, the permittee must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes. [Reg.19.304 and 40 C.F.R. § 63.6655 (f)]

NSPS IIII Conditions for Pre-2008 Model Year Fire Pumps

247. SN-MS-08-07 and SN-MS-08-09 are subject to and shall comply with all applicable provisions of 40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. Compliance with Subpart ZZZZ is demonstrated through compliance with 40 CFR Part 60, Subpart IIII – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. These requirements include, but are not limited to the following: [Reg.19.304 and 40 C.F.R. § 60, Subpart IIII]

a. The permittee must operate the emergency stationary ICE according to the requirements of this condition. In order for the engine to be considered an emergency stationary ICE under 40 CFR Part 60, Subpart IIII, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in the following conditions, is prohibited. If the engine is not operated according to the requirements in these conditions, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)]

i. There is no time limit on the use of emergency stationary ICE in emergency situations. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(1)]

ii. The permittee may operate the emergency stationary ICE for any combination of the purposes specified in the following conditions for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by Specific Condition #247.a.iii. counts as part of the 100 hours per calendar year allowed by this condition. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(2)]

1. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(2)(i)]

2. Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(2)(ii)]

3. Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(2)(iii)]

iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in nonemergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in Specific Condition #247.a.ii. Except as provided in paragraph #247a.iii.1, the 50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(3)]

1. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(3)(i)]

1. The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(3)(i)(A)]

2. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(3)(i)(B)]

3. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(3)(i)(C)]

4. The power is provided only to the facility itself or to support the local transmission and distribution system. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(3)(i)(D)]

5. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [Reg.19.304 and 40 C.F.R. § 60.4211 (f)(3)(i)(E)]

b. The permittee shall not discharge to the atmosphere any gases from SN-MS-08-07 that contain the following pollutants in excess of the specified limits. Compliance with this condition shall be demonstrated by maintaining manufacturer's documentation of the engine's certification to meet the standard below. [Reg.19.304 and 40 C.F.R. § 60.4205 (c)]

Pollutant	Emission Standard g/KW-hr (g/HP-hr)
NMHC + NO_X	10.5 (7.8)
CO	3.5 (2.6)
PM	0.54 (0.40)

c. The permittee shall not discharge to the atmosphere any gases from SN-MS-08-09 that contain the following pollutants in excess of the specified limits. Compliance with this condition shall be demonstrated by maintaining manufacturer's documentation of the engine's certification to meet the standard below. [Reg.19.304 and 40 C.F.R. § 60.4205 (b)]

Pollutant	Emission Standard g/KW-hr (g/HP-hr)
NMHC + NO_X	4.7 (3.5)
CO	5.0 (3.7)
PM	0.4 (0.30)

d. The permittee must operate and maintain SN-MS-08-07 and SN-MS-08-09 to achieve the emission standards over the entire life of the engine. [Reg.19.304 and 40 C.F.R. § 60.4206]

e. The permittee shall only combust diesel fuel with a maximum sulfur content of 15 ppm (0.0015%) by weight and either a minimum cetane index of 40 or a maximum aromatic content of 35% by volume. [Reg.19.304 and 40 C.F.R. § 60.4207 (b)]

f. The permittee shall install a non-resettable hour meter prior to start-up of SN-MS-08-07 and SN-MS-08-09. [Reg.19.304 and 40 C.F.R. § 60.4209 (a)]

g. The permittee shall operate and maintain the stationary IC internal combustion engine and any control devices according to the manufacturer's written instructions or procedures developed by the permittee that are approved by the engine manufacturer. In addition, the permittee may only change those settings that are permitted by the manufacturer. [Reg.19.304 and 40 C.F.R. § 60.4211 (a)]

NSPS JJJJ Conditions for New Stationary LPG Rich Burn Emergency Engines >25 HP

248. SN-MS-08-08 is subject to and shall comply with all applicable provisions of 40 CFR Part 63, Subpart ZZZZ – *National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines*. Compliance with Subpart ZZZZ is demonstrated through compliance with 40 CFR Part 60, Subpart JJJJ – *Standards of Performance for Stationary Compression Ignition Internal Combustion Engines*. These requirements include, but are not limited to the following: [Reg.19.304 and 40 C.F.R. § 60, Subpart JJJJ]

a. The permittee must operate the emergency stationary ICE according to the requirements of this condition. In order for the engine to be considered an emergency stationary ICE under 40 CFR Part 60, Subpart JJJJ, any operation other than emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations for 50 hours per year, as described in the following conditions, is prohibited. If the engine is not operated according to the requirements in these conditions, the engine will not be considered an emergency engine and must meet all requirements for non-emergency engines. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)]

i. There is no time limit on the use of emergency stationary ICE in emergency situations. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(1)]

ii. The permittee may operate the emergency stationary ICE for any combination of the purposes specified in the following conditions for a maximum of 100 hours per calendar year. Any operation for non-emergency situations as allowed by Specific Condition #248.a.iii. counts as part of the 100 hours per calendar year allowed by this condition. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(2)]

1. Emergency stationary ICE may be operated for maintenance checks and readiness testing, provided that the tests are

recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine. The owner or operator may petition the Administrator for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency ICE beyond 100 hours per calendar year. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(2)(i)]

2. Emergency stationary ICE may be operated for emergency demand response for periods in which the Reliability Coordinator under the North American Electric Reliability Corporation (NERC) Reliability Standard EOP-002-3, Capacity and Energy Emergencies (incorporated by reference, see §60.17), or other authorized entity as determined by the Reliability Coordinator, has declared an Energy Emergency Alert Level 2 as defined in the NERC Reliability Standard EOP-002-3. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(2)(ii)]

3. Emergency stationary ICE may be operated for periods where there is a deviation of voltage or frequency of 5 percent or greater below standard voltage or frequency. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(2)(iii)]

iii. Emergency stationary ICE may be operated for up to 50 hours per calendar year in nonemergency situations. The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in Specific Condition #248.a.ii. Except as provided in paragraph #248a.iii.1, the50 hours per calendar year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(3)]

1. The 50 hours per year for non-emergency situations can be used to supply power as part of a financial arrangement with another entity if all of the following conditions are met: [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(3)(i)]

    1. The engine is dispatched by the local balancing authority or local transmission and distribution system operator; [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(3)(i)(A)]

    2. The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential

voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(3)(i)(B)]

3. The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(3)(i)(C)]

4. The power is provided only to the facility itself or to support the local transmission and distribution system. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(3)(i)(D)]

5. The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator. [Reg.19.304 and 40 C.F.R. § 60.4243 (d)(3)(i)(E)]

b. The permittee shall not discharge to the atmosphere any gases from SN-MS-08-08 that contain the following pollutants in excess of the specified limits. Compliance with this condition shall be demonstrated by maintaining manufacturer's documentation of the engine's certification to meet the standards below. [Reg.19.304 and 40 C.F.R. § 60.4205 (c)]

Pollutant	Emission Standard g/KW-hr
HC + NO_X	13.4
CO	519

c. The permittee must operate and maintain SN-MS-08-08 to achieve the emission standards over the entire life of the engine. [Reg.19.304 and 40 C.F.R. § 60.4234]

d. The permittee shall install a non-resettable hour meter prior to start-up of SN-MS-08-08. [Reg.19.304 and 40 C.F.R. § 60.4237 (c)]

e. The permittee shall operate and maintain the stationary SI internal combustion engine and any control devices according to the manufacturer's written instructions and must keep records conducted maintenance to demonstrate compliance. In addition, the permittee may only change those settings that are permitted by the manufacturer. [Reg.19.304 and 40 C.F.R. § 60.4243 (a)]

f. The permittee must keep records of the information as follows: [Reg.19.304 and 40 C.F.R. § 60.4245 (a)]

i. All notifications submitted to comply with 40 CFR Part 60, Subpart JJJJ and all documentation supporting any notification. [Reg.19.304 and 40 C.F.R. § 60.4245 (a)(1)]

ii. Maintenance conducted on the engine. [Reg.19.304 and 40 C.F.R. § 60.4245 (a)(2)]

iii. If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 90, 1048, 1054, and 1060, as applicable. [Reg.19.304 and 40 C.F.R. § 60.4245 (a)(3)]

iv. If the stationary SI internal combustion engine is not a certified engine or is a certified engine operating in a non-certified manner and subject to §60.4243(a)(2), documentation that the engine meets the emission standards. [Reg.19.304 and 40 C.F.R. § 60.4245 (a)(4)]

g. The permittee must keep records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The owner or operator must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. [Reg.19.304 and 40 C.F.R. § 60.4245 (b)]

249. The permittee shall report that portion of emissions in excess of 100 hours of operation in accordance with Regulation §19.602. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

250. RESERVED

251. RESERVED

252. RESERVED

253. RESERVED

254. RESERVED

255. RESERVED

256. RESERVED

257. RESERVED

HCl Loading Operation Scenarios

Albemarle has two options for handling the displaced vapors from the loading of the HCl co-product into tanker trucks. The controlled loading operation ultimately results in the displaced vapors to be routed to the Vent Gas Incinerator (SN-21-01) for the NC-21 flame retardant process.

The second option, an uncontrolled HCl loading operation, involves benzene being recovered and recycled from the co-product HCl stream through the use of a distillation column. After being purified, the benzene concentration in the co-product HCl stream will be 30 ppmw or less. The co-product stream can either be routed to intermediate storage or be loaded out via tank truck. Benzene recovered in the distillation column is condensed and combined with other recovered benzene streams for reuse in the NC-21 process unit. The displaced vapors from the trucks are emitted to the atmosphere.

Albemarle has the option of installing the distillation column or not. Specific Conditions #258 through #261 only apply if the distillation column is operated (second option).

Specific Conditions

258. The permittee shall not exceed the emission rates set forth in the following table. Compliance with this condition shall be demonstrated through compliance with Specific Conditions #260 and #261. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
21-04	HCl Loading Operation (Option #2)	VOC	2.2	1.0

259. The permittee shall not exceed the non-criteria emission rates set forth in the following table. Compliance with this condition shall be demonstrated through compliance with Specific Conditions #260 and #261. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
21-04	HCl Loading Operation (Option #2)	Total HAP Benzene HCl	N/A 2.16 N/A	1.29 0.95 0.34

260. The facility shall use a method approved by the Department to test the HCl co-product stream to demonstrate benzene concentration does not exceed 30 ppmw. The permittee shall conduct subsequent testing on an interval not to exceed 60 months from the previous test. Within 30 days after testing, a copy of the testing information shall be sent to the address below.

Arkansas Department of Environmental Quality
Air Division
Attn.: Air Enforcement
Post Office Box 8913
Little Rock, AR 72219

[Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

261. The permittee shall calculate benzene and HCl emissions from the HCl Loading operations once per year. Pound per hour emissions shall be based upon worst-case conditions, and ton per year emissions upon a 12-month period. A copy of the calculations shall be kept on-site and made available to Department personnel upon request. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

262. The permittee shall route all displaced gas from HCl loading operations to SN-21-01 if the concentration of benzene in the co-product stream is greater than 30 ppmw or if the distillation column at SN-24-01 is not installed. As of July 27, 2004, this distillation column has not been installed. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-24 Production

The NC-24 process produces two isomers of a desired alkyl bromide product by reacting the base hydrocarbon olefin with HBr. The HBr comes from South Plant facilities. The olefin is stored under pressure with emissions routed to a flare (SN-AD-26). The reaction takes place in a continuously operated reactor where the reactants are added and the crude product is withdrawn simultaneously. As a continuous reactor under pressure, the reactor has no normal vent during the reaction process.

The crude product contains a mixture of HBr and the two alkyl bromide isomers. The organic product is washed with water in the Wash Column (SN-24-01) to remove the residual HBr. HBr is preferentially absorbed into the aqueous phase forming an aqueous acid stream. The organic product retained in the wash water acid is recovered in the Acid Stripper by routing the stripper overheads back to the Wash Column. The organic product is dewatered in the Organic Dryer, and residual organic or acid in the dryer over heads are recovered in the Wash Column. The stripped acid will be stored in the Wash Water Tank (SN-CB-10) before being used elsewhere at the South Plant. The dewatered crude product will be sent downstream for further processing.

After being dewatered, the crude product is fed to two distillation columns in series. The back-end processes operate with two Refrigerated Vent Condensers (SN-TB-25) used to recover product and raw material. The two columns are designed to separate the two alkyl bromide isomers into two distinct product streams and one organic waste stream. One of the isomers is blended with a small amount of 1,2-epoxybutane, and both isomers are stored before being loaded for sale. The organic waste is drummed and will be shipped off-site for processing. Emissions from all of the product purification, storage, and loading operation will be routed to the Refrigerated Vent Condensers (SN-TB-25).

NC-24 Production Alternate Scenario –Periods of No Reaction

When the reactor loses the reaction, the raw material vapors (propylene and hydrogen bromide) may build up and must be vented before re-initiating the reaction. The vapors are vented to the Wash Column (SN-24-01), which absorbs the hydrogen bromide just as in the primary operating scenario. Propylene will pass through the wash column unaffected.

The process will be controlled such that the flaring (SN-AD-26) and depressurization of the reactor will not occur at the same time. The pressure control valve on the NC-24 reactor is designed to allow no more than 48.5 lb/hr of VOC which is the same rate VOC would otherwise be routed to the flare in the primary operating scenario.

Specific Conditions

263. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
24-01	Wash Column (Primary Operating Scenario)	VOC	48.5	21.4
24-01	Wash Column (Alternate Scenario)	VOC	48.5	0.6
24-02	NC-24 Fugitives	VOC	1.2	5.1

SN-#	Description	Pollutant	lb/hr	tpy
AD-26	ADMA Flare*	PM_{10}	0.8	0.1
		SO_2	0.1	0.1
		VOC	48.5	0.6
		CO	18.9	0.3
		NO_X	3.5	0.1
TB-25	Refrigerated Vent Condensers	VOC	47.7	5.8

* SN-AD-26 is not operated as an emergency control device in this scenario. Therefore, the operation of this source does not need to be reported as an upset condition as is required under the Alkyl Amines Process (Specific Conditions #61 and #62)

264. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
24-01	Wash Column*** (Primary Operation Scenario)	Acetone	N/A	0.10
		HBr	0.10	0.50
		Total HAP	N/A	0.60
		HCl	N/A	0.50
24-01	Wash Column*** (Alternate Scenario)	Acetone	N/A	0.10
		HBr	0.10	0.50
		Total HAP	N/A	0.50
		HCl	N/A	0.50
24-02	NC-24 Fugitives	Acetone	N/A	0.10
		HBr	0.1	0.40
		Total HAP	N/A	0.90
		HCl	N/A	0.20
AD-26*	Emergency Flare**	PM	0.8	0.1
		Total HAP	N/A	0.01
TB-25*	Refrigerated Vent Condensers	Acetone	N/A	0.10
		HBr	0.10	0.10
		Total HAP	N/A	0.20
		HCl	N/A	0.10

* This source is used in other production/operating scenarios. The emission limits listed above are only applicable to NC-24 production.

** SN-AD-26 is not operated as an emergency control device in this scenario. Therefore, the operation of this source does not need to be reported as an upset condition as is required under the Alkyl Amines Process (Specific Conditions #61 and #62)

*** The limits are the total emissions between the two operating scenario.

265. The permittee shall demonstrate compliance with the hourly emission limits for SN-24-01 by maintaining a daily average chilled water flow of 2,200 lb/hr or greater and a daily average chilled water temperature of 65 °F or less. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

266. The permittee shall demonstrate compliance with the hourly emission limits for SN-TB-25 by maintaining a daily average glycol coolant temperature less than or equal to 40 °F while receiving vapors from the process. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

267. The permittee shall maintain daily records which demonstrate compliance with the minimum flow rate of water and maximum temperatures specified in Specific Conditions #265 and #266. These records shall be kept onsite and be made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

268. The permittee shall not produce more than 9,452 metric tons (10,418.9 tons) per year of NC-24 product. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

269. The permittee shall not use more than 50,000 gallons per year of 1,2-Epoxybutane products. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

270. The permittee shall maintain monthly records demonstrating compliance with Specific Conditions #268 and #269. Records shall be updated by the 15th day following the month to which the records pertain, made available to Department personnel upon request, and otherwise in accordance with General Provision 7. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

271. The permittee shall maintain records of each raw material venting event to SN-AD-26. These records shall contain the date, time, duration of each event, and total duration per rolling twelve month period. If the total duration exceeds 24 hours in any twelve (12) month period, then the permittee shall calculate the emissions for each event in order to demonstrate compliance with the limits in Specific Conditions #263 and #264. These records shall be updated following each event, kept onsite and made available to Department personnel upon request. Specific Conditions #61 and #62 of the ADMA section of this permit do not apply during the NC-24 alternate operating scenario. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

272. The permittee shall maintain records of each raw material venting event to SN-24-01. These records shall contain the date, time, duration of each event, and total duration per rolling twelve month period. The permittee shall calculate the VOC, HBr, and HCl emissions for each event in order to demonstrate compliance with the limits in Specific Conditions #263 and #264 when operating under the alternate operating scenario. These records shall be updated following each event, kept onsite and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

Vent Gas Incinerator (SN-21-01) and Vent Gas Oxidizer (SN-16-18) Testing Scenario

During the alternate testing scenario, all normal process operations at the NC-16 or NC-21 process units will be shutdown except for the vent gas oxidizer (SN-16-18) or vent gas oxidizer (SN-21-01), which will be fed a known mass feed rate in a synthetic vent stream in order to simulate worst-case inlet pollutant loading.

Specific Conditions

273. The permittee shall not exceed the emission rates set forth in the following table. These emission limits are applicable only for the purpose of conducting performance tests to determine if the control devices can comply with the emission standards in 40 CFR Part 63, Subpart FFFF while operating at worse case conditions. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/day
21-01	Vent Gas Incinerator	VOC Benzene	41.1 41.1
16-18	Vent Gas Oxidizer	VOC HAP	27.4 24.0

274. The permittee shall perform all testing under this scenario identified as the worst case operating conditions and test methods according to the site specific test plan that has been approved by the EPA. Testing under this condition shall not exceed 72 hours and requires prior approval from ADEQ. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

275. The permittee shall submit to ADEQ Air Division Enforcement a notice at least 15 days in advance of this testing. This notice shall be signed by the plant manager and shall contain the following: [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

a. Identification of the source to be tested;

b. A detailed description of the test conditions;

c. Anticipated duration of the test;

d. Sampling frequency;

e. Total amount of hazardous air pollutant to be feed to the tested source;

f. A copy of the site specific test plan, and if applicable, any related correspondence to or from EPA regarding the site-specific test plan;

g. The anticipated date of the test; and

h. An affidavit signed by the plant manager to immediately cease feeding hazardous air pollutants to either of the sources if the limit in Specific #273 will be exceeded before the anticipated duration of the test.

276. The permittee shall within 30 days of completing the performance test submit a complete test report and calculations that demonstrate emissions did not exceed the limits in Specific Condition #273. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

NC-15 Area Scrubber (SN-15-12) Testing Scenario

During the alternate testing scenario, the SN-15-12 will be tested while using fresh water instead of a caustic solution in the final spray step.

Specific Conditions

277. The permittee shall not exceed the emission rate set forth in the following table. This emission limit is applicable only for the purpose of testing the scenario when the media in the final spray step is fresh water rather than caustic solution. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/day
15-12	NC-15 Area Scrubber	Br_2 HBr	26.16 26.16

278. The permittee shall conduct stack testing for bromine at SN-15-12 during the scenario identified in Specific Condition #277. The testing shall be conducted using EPA Reference Method 26A. Testing under this condition require prior approval from ADEQ. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

279. The permittee shall submit to ADEQ Air Division Enforcement a notice at least 15 day in advance of this testing. This notice shall be signed by the plant manager and shall contain the following: [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

    a. Identification of the source to be tested

    b. A detailed description of the test conditions

    c. Anticipated duration of the test

    d. Sampling frequency

    e. An affidavit signed by the plant manager to immediately return to spraying caustic solution instead of fresh water if the limit in Specific #277 will be exceeded before the anticipated duration of the test or through the combination of the test and normal operation in any consecutive 24 hour period.

280. The permittee shall within 30 days of completing the performance test submit a complete test report and calculations that demonstrate emissions did not exceed the limits in Specific Condition #277. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Methyl Bromide Production at NC-23

Methyl bromide (MeBr) 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 the methanol is recovered and sent back to be used as feedstock for the reaction.

Under an alternate methanol recovery scenario, methanol introduced in the MeBr recovery system is also routed to the methanol recovery system where the methanol is recovered and recycled for use as feedstock. The water left over from methanol recovery has brine value and; therefore, is piped to the bromine recovery process. Thus, 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 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.

Compliance with permitted emission rates in the NC-23 process area while producing MeBr shall be demonstrated through stack testing, parametric monitoring, and record keeping requirements.

Specific Conditions

281. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitives *(NC-23 MeBr Production Scenario)*	VOC	2.4	10.3
23-03	Raw Material Scrubber *(NC-23 MeBr Production Scenario)*	VOC	27.4	1.7
23-05	Vent Absorber *(NC-23 MeBr Production Scenario)*	VOC	1.6	7.0
23-16	Spent Sulfuric Acid Storage Tank *(NC-23 MeBr Production Scenario)*	VOC	0.1	0.1
23-17	Refrigerant Water Storage Tank *(NC-23 MeBr Production Scenario)*	VOC	0.1	0.1
23-18	Refrigerant Water Storage Tank *(NC-23 MeBr Production Scenario)*	VOC	0.1	0.1
TB-25	Refrigerated Vent Condensers *(NC-23 MeBr Production Scenario)*	VOC	0.5	2.0

282. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
23-01	NC-23 Fugitives *(NC-23 MeBr Production Scenario)*	Total HAP Methanol Methyl Bromide	N/A 0.97 0.97	8.50 4.25 4.25
23-03	Raw Material Scrubber *(NC-23 MeBr Production Scenario)*	Total HAP Methanol	N/A 27.37	1.68 1.68
23-05	Vent Absorber *(NC-23 MeBr Production Scenario)*	Total HAP Methanol Methyl Bromide	N/A 0.40 0.90	5.80 1.80 4.00
23-16	Spent Sulfuric Acid Storage Tank *(NC-23 MeBr Production Scenario)*	H_2SO_4 Total HAP Methanol	0.01 N/A 0.10	0.05 0.10 0.10
23-17	Refrigerant Water Storage Tank *(NC-23 MeBr Production Scenario)*	Total HAP	N/A	0.01
23-18	Refrigerant Water Storage Tank *(NC-23 MeBr Production Scenario)*	Total HAP	N/A	0.01
TB-25	Refrigerated Vent Condensers *(NC-23 MeBr Production Scenario)*	Total HAP Methanol	N/A 0.45	2.00 2.00
TB-30	Fresh Sulfuric Acid Storage Tank *(NC-23 MeBr Production Scenario)*	H_2SO_4	0.01	0.05

283. The following 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. [Reg.19.304 and 40 C.F.R. § 63]

Source Number‡	Name	HON Source Type	HON Group
23-01	NC-14 Fugitive Emissions	Equipment Leaks	NA (Subpart H)
23-03	Methanol Feed Storage Tank	Storage Vessel	Group 1
23-05	Methyl Bromide Recovery Unit	Process Vent	Group 2
N/A	Methyl Bromide Transfer Rack*	Transfer Operation	Group 1
N/A	Methyl Bromide Storage Tank D-8725*	Storage Vessel	Group 2
N/A	Methyl Bromide Storage Tank D-8726*	Storage Vessel	Group 2
N/A	Methyl Bromide Rundown Tank*	Storage Vessel	Group 2
N/A	Methanol Recovery Column Feed Tank (D-22)*	N/A (See below)	N/A
TB-25	Methanol Recovery Column Vent	Process Vent	Group 2
WW-01	Methanol Recovery Column Water Discharge	Wastewater	Group 2

* These sources are routed to SN-23-05.

‡ SN-23-16 emits methanol which is a HON regulated pollutant. The storage tank is not subject to HON requirements because methanol occurs as an impurity. The for the purpose of the HON the definition for

storage vessel excludes vessels storing organic liquids that contain organic hazardous air pollutants only as impurities.

General HON Related Conditions

284. 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. [Reg.19.304 and 40 C.F.R. § 63.102(a)]

285. 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 are incorporated by reference and are 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. [Reg19.304 and 40 C.F.R. § 63.6(e)(3)]

286. The permittee shall submit a Notification of Compliance Status (NCS) within 150 calendar days after initial start-up of the methyl bromide production unit. [Reg19.304 and 40 C.F.R. § 63.152(b)]

287. All required Periodic Reports shall be submitted semi-annually no later than 60 days after the end of each 6-month period. Reports shall be submitted no later than 8 months after the date the NCS is due, and shall cover the 6-month period beginning on the date the NCS is due. Subsequent reports are due every six months after the date that the first report was due as long as the MeBr unit operates in this unit. [Reg19.304 and 40 C.F.R. § 63.152(c)(1)]

MeBr Process Vent Conditions

288. 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. [Reg19.304 and 40 C.F.R. § 63.115(e)]

289. The NCS shall include documentation of all assumptions and procedures used to determine the TRE index value for the methyl bromide recovery unit process vent (SN-23-05). [Reg19.304 and 40 C.F.R. § 63.117(b)]

290. The NCS shall include documentation of all assumptions and procedures used to determine the TRE index value for the methanol recovery column process vent (SN-TB-25). [Reg19.304 and 40 C.F.R. § 63.117(d)]

291. 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. [Reg.19.304 and 40 C.F.R. § 63, Subpart G]

SN-#	Description	Pollutant	lb/hr	tpy
23-05	Vent Absorber *(NC-23 MeBr Production Scenario)*	Total HAP Methanol Methyl Bromide	N/A 0.40 0.90	5.80 1.80 4.00
TB-25	Refrigerated Vent Condensers *(NC-23 MeBr Production Scenario)*	Total HAP Methanol	N/A 0.45	2.00 2.00

MeBr Storage Vessel Conditions

292. Reserved.

293. 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. [Reg19.304 and 40 C.F.R. § 63.123(a)]

294. The water scrubber associated with the methanol storage tank (SN-23-03) shall reduce emissions of total organic HAP by 95 weight percent. Compliance with this condition shall be demonstrated by the design evaluation included in the NCS and by compliance with Specific Condition #295. The methanol storage tank (SN-23-03) shall be vented to the associated water scrubber at all times, except for the 240 hours per year allowable under 40 CFR §63.119(e). [Reg19.304 and 40 C.F.R. § 63.119(e)]

295. The permittee shall monitor the daily average flow to demonstrate compliance with the monitoring plan requirements for storage tanks and maintain records of the results of required monitoring. [Reg19.304 and 40 C.F.R. § 63.120(d)(2)(i)]

Note: A design evaluation showed 500 lb/hr of scrubber water flow will be sufficient to meet the 95% control requirement.

MeBr Transfer Operations

296. The methyl bromide recovery unit (SN-23-05) 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). [Reg19.304 and 40 C.F.R. § 63.126(a)(3)]

297. The methyl bromide recovery unit (SN-23-05) 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 Specific Conditions #298 and #299. [Reg19.304 and 40 C.F.R. § 63.126(b)]

298. 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-23-05) equal to or greater than 5.7. [Reg19.304 and 40 C.F.R. § 63.126(b), §63.127(e)]

299. The permittee shall maintain a temperature in the methyl bromide stripper of the methyl bromide recovery unit (SN-23-05) equal to or greater than 170 ºF at the top of the stripping section at the operating pressure of 25 psia. [Reg19.304 and 40 C.F.R. § 63.126(b), §63.127(e)]

300. The permittee shall comply with all applicable requirements related to methyl bromide transfer operations. [Reg19.304 and 40 C.F.R. § 63.126(f), (g), (h), and (i)]

301. 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. [Reg19.304 and 40 C.F.R. § 63.130(a)]

302. The permittee shall submit Periodic Reports as specified in §63.130(d). [Reg.19.304 and 40 C.F.R. § 63, Subpart G]

303. The permittee shall maintain the DOT tank certification or Method 27 testing records as required by §63.130(e). [Reg.19.304 and 40 C.F.R. § 63, Subpart G]

304. 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). [Reg.19.304 and 40 C.F.R. § 63, Subpart G]

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

305. The permittee shall submit the SN-WW-01 information as required in Table 15 of Subpart G with the NCS. [Reg19.304 and 40 C.F.R. § 63.146(b)(2)]

306. 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. [Reg19.304 and 40 C.F.R. § 63.147(f)]

MeBr Equipment Leaks

307. The permittee shall comply with all applicable sections of §63.160 through §63.182. [Reg.19.304 and 40 C.F.R. § 63, Subpart H]

Ozone Depleting Substance (ODS)

308. 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 of conferred unexpended essential use allowances or exemptions, or in excess of the amount of unexpended critical use allowances, or in excess of the amount of unexpended Article 5 allowances as allocated under §82.9 and §82.11. [Reg.19.304 and 40 C.F.R. § 82, Subpart A, Paragraph 82.4(a) (see Appendix A)]

309. The permittee may not import (except for transhipments or heels), at any time in any control period, (except for controlled substances that are transformed or destroyed) in excess of the amount of unexpended essential use allowances or exemptions, or in excess of unexpended critical use allowances held. [Reg.19.304 and 40 C.F.R. § 82, Subpart A, Paragraph 82.4(c)]

310. Production and consumption allowances may be adjusted by the procedures in paragraphs §82.9, §82.10, §82.11, and §82.12. [Reg.19.304 and 40 C.F.R. § 82, Subpart A]

311. The permittee shall conform with the record keeping and reporting practices for methyl bromide as outlined in Paragraph §82.13. [Reg.19.304 and 40 C.F.R. § 82, Subpart A]

312. All containers in which methyl bromide is stored or transported must be labeled as outlined in Paragraphs 82.106, 82.108, and 82.110. [Reg.19.304 and 40 C.F.R. § 82, Subpart A]

313. 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). [Reg.19.304 and 40 C.F.R. § 82, Subpart A]

Bromine Recovery Unit

The Bromine Recovery Unit (BRU) collects brominated organics and recovers bromine for use in other processes. The BRU is fed via hard-piped transfer lines, tanker trucks, totes and drums. The feed streams are collected in the feed tank, and the vapors from the feed tank are feed to the burner for destruction. The liquid from the feed tank is atomized by co-current steam flow before being converted to bromine, hydrogen bromide, carbon dioxide, and water in the Thermal Oxidizer (TO). At maximum flow, the TO provides a destruction efficiency of 99.9% while operating at 1,750 °F to 2,200 °F. The hot exit-gas stream enters the Quench System (contactor and quench tank). Inside the stream reaches its saturation point and brine sprays condition the stream and absorb most of the HBr. The cooled stream is then feed to the Br_2 scrubber where the remaining bromine is removed by brine. The scrubbed combustion gases exit the scrubber and are emitted to the atmosphere.

314. The permittee shall not exceed the emission rates set forth in the following table. [Reg.19.501 *et seq.* and 40 C.F.R. § 52 Subpart E]

SN-#	Description	Pollutant	lb/hr	tpy
33-01	BRU Scrubber	PM_{10}	1.9	6.5
		SO_2	0.1	0.4
		VOC	5.2	22.5
		CO	1.7	7.3
		NO_X	8.8	38.1
33-02	BRU Fugitives	VOC	1.2	5.2
33-03	Dust Collection Filter (Bulk Bag Feeder System)	PM_{10}	0.1	0.5

315. The permittee shall not exceed the non-criteria emission rates set forth in the following table. [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

SN-#	Description	Pollutant	lb/hr	tpy
33-01	BRU Scrubber	PM	1.9	6.5
		Br_2	1.00	4.40
		HBr	0.10	0.40
		H_2S	1.60	7.00
		Total HAP	N/A	16.72
		Benzene	1.04	4.54
		HCl	0.20	0.88
		Hydrazine	N/A	0.35
		Methylene Chloride	N/A	0.05

SN-#	Description	Pollutant	lb/hr	tpy
33-02	BRU Fugitives	Br_2	0.01	0.03
		HBr	0.02	0.09
		Total HAP	N/A	0.05
		Benzene	0.01	0.01
33-03	Dust Collection Filter (Bulk Bag Feeder System)	PM	0.10	0.50
33-04	Hydrazine Hydrate Tote	Total HAP	N/A	0.01
		Hydrazine	N/A	0.01

316. Visible emissions at SN-33-01 shall not exceed 5% opacity. The permittee shall comply with Plantwide Condition #10 for opacity readings. [Reg.18.501 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

317. The permittee shall not feed more than 1,380 pounds per hour from the BRU feed tank to the thermal oxidizer. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

318. The permittee shall maintain records to demonstrate compliance with Specific Condition #317. The permittee shall calculate the average feed rate to the BRU for each of the eight 3-hour blocks in the operating day. Each of these 3-hour block averages will be compared to the mass feed rate limit in Specific Condition #317. The permittee shall update these records by the fifteenth day of the month following the month to which the records pertain, be made available to Department personnel upon request, and submitted in accordance with General Provision #7. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

319. The permittee shall maintain the thermal oxidizer at a minimum 1,750 °F per hourly rolling average with a minimum residence time of two seconds when combusting material other than natural gas. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

320. The permittee shall continuously measure and record the temperature at the thermal oxidizer at all times that the BRU is receiving or combusting materials other than natural gas. These records shall be kept on-site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

321. The permittee shall maintain a minimum total flow rate of scrubber media of 350 gallons per minute and maintain a minimum total flow rate of scrubber media at the top section of the scrubbing column of 150 gallons per minute at SN-33-01. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

322. The permittee shall measure and record the scrubber media flow rates once combustion of material other than natural gas begins and every four hours thereafter while the BRU is

in bromine recovery. These records shall be kept on-site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

323. The permittee shall not use more than 20 gallons per minute of process water nor shall it contain more than 148 milligrams solids per liter except as provided the following paragraph for evaporative cooling at SN-33-01. The process water shall not contain VOCs or HAPs. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

a. The permittee may increase the quench water rate above the stated 20 gallons per minute provided that the quench water flow rate times the most recent measured TDS concentration falls below the permitted particulate matter emission hourly emission limit in Specific Condition #315 as calculated in the following equation. In the event subsequent testing indicates a higher TDS concentration than previously sampled, the permittee must recalculate emissions according to the equation and adjust the flow downward as necessary to satisfy following equation.

Measured TDS Conc. X Quench Evaporation Rate < 1.90 lb/hr

[Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

b. The permittee shall calculate particulate emissions for each day of operation under Specific Condition #323.a. and maintain a twelve month rolling total for any twelve month period that the quench water flow rate has exceeded 20 gallons per minute on an hourly basis. These records shall be kept onsite and be made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

324. The permittee shall continuously measure and record the flow rate of the evaporative cooling water at all times when the BRU is in bromine recovery. These records shall be kept on-site and made available to Department personnel upon request. [Reg.19.703, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

325. The permittee shall maintain weekly records of the total dissolved solids concentration of the evaporative cooling water. Upon obtaining four consecutive weekly samples which show compliance with the TDS limit above, the permittee may reduce the frequency of sampling to once per month. Upon obtaining three monthly samples which show compliance with the TDS limit above, the permittee may reduce the frequency of sampling to one per quarter on a permanent basis. Any sampling that results in a TDS concentration above the permitted amount shall require the permittee to resume weekly testing. All records of sampling shall be kept on-site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

326. The permittee shall not exceed a flow rate of 10,512,000 gallons of process water used for evaporative cooling at the BRU per consecutive 12-month period. [Reg.19.705, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 70.6]

327. The permittee shall maintain a 12-month rolling total which demonstrate compliance with Specific Condition #326. These records shall be kept on-site, made available to Department personnel, and otherwise kept in accordance with General Provision #7. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

328. The permittee shall test SN-33-01 for the pollutants identified below in accordance with Plantwide Condition #3 in order to demonstrate compliance with the permit limits. This testing must be completed by November 1, 2013. The permittee may request alternate test methods provided that the request is submitted to the Compliance Inspector Supervisor at least 30 days in advance of planned testing. Any alternate method must receive Department approval prior to the testing event. [Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Pollutant	Test Method	Initial Test (Year)	Frequency
VOC	25A	2013	Every Calendar Year
HCl	26A	2013	Every Calendar Year
Br_2	26A	2013	Every 5 Calendar Years

329. The permittee shall identify the processes from which the brominated organic compounds originated. Receipt of offsite material at the BRU is prohibited except as provided in Specific Condition #329.a. The permittee shall keep monthly records of the amount and composition of each stream containing the brominated compounds. These records shall be kept on-site and made available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

    a. The permittee shall only receive offsite material that was produced at facilities owned and operated by Albemarle Corporation. The permittee shall maintain records identifying the originating facility and associated process for each shipment. The same recordkeeping requirements stated in Specific Condition #329 apply to shipments. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

330. The permittee shall not combust hazardous waste in the BRU. [Reg.18.1004 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

331. The permittee shall maintain a fabric filter with a removal efficiency of 99.93% for particulate matter less than3 microns at SN-33-03. The permittee shall inspect the filter monthly to ensure the dust collector is operating properly and replace the filter if

necessary or per manufacturer's recommendation. The permittee will record the results of each inspection by the 15th of the following month and make these records available to Department personnel upon request. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

MON MACT Affected Sources

Miscellaneous Organic Chemical Processing Units (MCPU)

The following MCPUs exist at the facility and are subject to the requirements of 40 CFR Part 63, Subpart FFFF:

MON Affected MCPUs	Page Number
Alkyl Amines (ADMA) Unit	141
DMTDA Unit	142
NC-12 Unit	143
NC-15 Unit	144
NC-16 Unit	144
NC-18 Unit (BT-93W Process Only)	145
NC-21 Unit	148
NC-22 Unit	151
NC-23 Unit	152
NC-24 Unit	153

Generally Applicable Subpart A and MON MACT Requirements

The following section outlines the requirements that are generally applicable since at least one MON-affected process unit exists at this facility. Applicable 40 CFR 63, Subpart A general provisions and the generally applicable provisions of 40 CFR Part 63, Subpart FFFF include but are not limited to the following conditions.

Specific Conditions

1. The permittee will comply with the applicable provisions as specified in Title 40 of the Code of Federal Regulations (CFR), Part §63, Subpart A - *General Provisions.* [Reg.19.304 and 40 C.F.R. § 63, Subpart A]

2. For the MON-affected process units, the permittee must be in compliance with the MON at all times, except during periods startup, shutdown, and malfunction. [Reg19.304 and 40 C.F.R. § 63.2450(a)]

3. The permittee must not exclude monitoring data taken during startup, shutdown, or malfunction. [Reg19.304 and 40 C.F.R. § 63.2450(1)]

4. Opening of a safety device is allowed at any time to avoid unsafe conditions. [Reg19.304 and 40 C.F.R. § 63.2450(p)]

5. The permittee must submit an initial notification not later than 120 calendar days after November 10, 2003. The permittee complied with this requirement on March 5, 2004. [Reg19.304 and 40 C.F.R. § 63.2515(b)]

6. If required to conduct a performance test, the permittee must submit a notification of intent to conduct a performance test at least 60 calendar days before the performance test is scheduled to begin as required in §63.7(b)(l). For any performance test required as part of the initial compliance procedures for batch process vents in Subpart FFFF Table 2 -

Emission Limits and Work Practice Standards for Batch Process Vents, the permittee must submit the test plan required by §63.7(c) and the emission profile with the notification of the performance test. [Reg19.304 and 40 C.F.R. § 63.2515(c)]

7. The permittee must submit a pre-compliance report to request approval for any of the items in §63.2520(c)(1) through (7). Changes in this information must be submitted 60 days before the planned change is to be implemented. [Reg19.304 and 40 C.F.R. § 63.2520(c)]

8. The permittee must submit the notification of compliance status report no later than 150 days after the applicable compliance date specified in §63.2445. The notification of compliance status report must include the information in §63.2520(d)(2)(i) through (ix). [Reg19.304 and 40 C.F.R. § 63.2520(d)(1)]

9. The compliance report must contain the information specified in §63.2520(e)(1) through (10). The initial compliance report may be submitted according to the schedule given in §63.2520(b)(1) through (b)(4). Subsequent compliance reports will be submitted with the annual compliance certification and semiannual monitoring reports as allowed under §63.2520(b)(5). [Reg19.304 and 40 C.F.R. § 63.2520(e)]

10. Except as specified in §63.2520(e)(10)(ii), whenever a process change, or change in any of the information submitted in the notification of compliance status report or a previous compliance report is made, that is not within the scope of an existing operating scenario, the permittee must document the change in the compliance report. The notification must include all of the information in §63.2520(e)(10)(i)(A) through (C). [Reg19.304 and 40 C.F.R. § 63.2520(e)(10)(i)]

11. The permittee must submit a report 60 days before the scheduled implementation date of any of the changes identified below. [Reg19.304 and 40 C.F.R. § 63.2520(e)(10)(ii)]

    a. Any change to the information contained in the pre-compliance report.

    b. Changes in the status of a control device from small to large.

    c. Changes from Group 2 to Group 1 for any emission point except for batch process vents that meet the conditions specified in §63 .2460(b)(6)(i).

12. The permittee must keep a schedule or log of operating scenarios for processes with batch vents from batch operations updated each time a different operating scenario is put into effect. The permittee must keep the records of each operating scenario as specified in §63.2525(b)(1) through (8). [Reg19.304 and 40 C.F.R. § 63.2525(b) and (c)]

13. If the permittee chooses to control any vents to less than the percent reduction requirement, the permittee must retain the information specified in §63.2525(d)(I) and (2) for Group 1 batch process vents in compliance with a percent reduction emission limit in Subpart FFFF Table 2 – *Emission Limits and Work Practice Standards for Batch Process Vents.* [Reg19.304 and 40 C.F.R. § 63.2525(d)]

14. For any of the MON-affected process units, the permittee must record each time a safety device is opened to avoid unsafe conditions in accordance with §63.2450(s). [Reg19.304 and 40 C.F.R. § 63.2525(f)]

15. For any of the MON-affected process units with MON-required CPMS, the permittee must record the results of each CPMS calibration check and the maintenance performed, as specified in §63.2450(k)(1). [Reg19.304 and 40 C.F.R. § 63.2525(g)]

16. In the SSMP required by §63.6(e)(3), the permittee is not required to include Group 2 emission points, unless those emission points are used in an emissions average. The permittee does not use emissions averaging at this time. For equipment leaks, the SSMP requirement is limited to control devices and is optional for other equipment. [Reg19.304 and 40 C.F.R. § 63.2525(j)]

Closed Vent System Requirements for MON-required Control Devices

1. Each closed vent system must be designed and operated to collect the regulated material vapors from the emission point, and to route the collected vapors to a control device. Closed vent systems used for compliance must be operated at all times when emissions are vented to, or collected by, them. Except for equipment needed for safety purposes, the permittee must comply with the provisions of either §63.983(a)(3)(i) or (ii) for each closed vent system that contains bypass lines that could divert a vent stream to the atmosphere. The permittee must keep a record of the information specified in either §63.998(d)(1)(ii)(A) or (B), as applicable, for closed vent system bypass lines. [Reg19.304 and 40 C.F.R. § 63.983(a)(l), (a)(2), and (a)(3)]

2. For closed vent systems collecting regulated material from a regulated source, the permittee must record the identification of all parts of the closed vent system, that are designated as unsafe or difficult to inspect, an explanation of why the equipment is unsafe or difficult to inspect, and the plan for inspecting the equipment required by §63.983(b)(2)(ii) or (iii). [Reg19.304 and 40 C.F.R. § 63.983(b)(2) and §63.998(d)(1)(i)]

3. For all initial leak inspections, the instrument probe must be traversed around all potential leak interfaces as described in Method 21 of 40 CFR part 60, appendix A. Each closed vent system must be inspected according to the procedures specified in §63.983(c)(1)(i) through (vii). [Reg19.304 and 40 C.F.R. § 63.983(c)(l) and (c)(2)]

4. If there are visible, audible, or olfactory indications of leaks at the time of the annual visual inspections required by §63.983(b)(l)(i)(B), the permittee must follow the procedure specified in either §63.983(d)(l)(i) or (ii). [Reg19.304 and 40 C.F.R. § 63.983(d)(l)]

5. Leaks, as indicated by an instrument reading greater than 500 parts per million by volume above background or by visual inspections, must be repaired as soon as practical, except as provided in §63.983(d)(3) which allows delay of repair for the reasons specified therein. Records must be generated as specified in §63.998(d)(l)(iii)(A) through (F) when a leak is detected. Records must be kept according to §63.998(d)(1)(iv) when no leak is detected. [Reg19.304 and 40 C.F.R. § 63.983(d)(2)]

Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring

1. The following sources – SN-AD-05, SN-16-18, and SN-21-01 were specifically identified as subject to the monitoring and recordkeeping requirements listed below. [Reg19.304 and 40 C.F.R. § 63.996(c)(l)]

2. When one CPMS is used as a backup to another, the permittee must report the results from the CPMS used to meet the monitoring requirements. If both such CPMS's are used during a particular reporting period, the permittee must report the results from each CPMS for the time period the instrument was relied upon to demonstrate compliance. [Reg19.304 and 40 C.F.R. § 63.996(b)(2)]

3. All monitoring equipment must be installed, calibrated, maintained, and operated according to manufacturer's specifications or other procedures that provide adequate assurance that the equipment will monitor accurately. [Reg19.304 and 40 C.F.R. § 63.996(c)(l)]

4. The permittee must maintain and operate each CPMS as specified in this section (§63.996(c)(2)), or in a relevant subpart, and in a manner consistent with good air pollution control practices. [Reg19.304 and 40 C.F.R. § 63.996(c)(2)]

    a. The permittee must ensure the immediate repair or replacement of CPMS parts to correct "routine" or otherwise predictable CPMS malfunctions. The necessary parts for routine repairs of the affected equipment must be readily available.

    b. If under the referencing subpart, the permittee has developed a startup, shutdown, and malfunction plan, the plan is followed, and the CPMS is repaired immediately, this action must be recorded as specified in §63.998(c)(l)(ii)(E).

    c. The Administrator's determination of whether acceptable operation and maintenance procedures are being used for the CPMS will be based on information that may include, but is not limited to, review of operation and maintenance procedures, operation and maintenance records as specified in §63.998(c)(l)(i) and (ii), manufacturer's recommendations and specifications, and inspection of the CPMS.

5. If the permittee conducts performance tests for this control device, all CPMSs must be installed, operational, and have verification of data before or after conducting performance tests. Verification of operational status includes completion of the manufacturer's written specifications or recommendations for installation, operation, and calibration of the system or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. [Reg19.304 and 40 C.F.R. § 63.996(c)(3)]

6. All CPMS's must be installed such that representative measurements of parameters are obtained. [Reg19.304 and 40 C.F.R. § 63 .996(c)(4)]

7. The permittee must continually operate all CPMSs when emissions are being routed to the monitored device, except for system breakdowns, repairs, maintenance periods, instrument adjustments, or checks to maintain precision and accuracy, calibration checks, and zero and span adjustments. [Reg19.304 and 40 C.F.R. § 63.996(c)(5)]

8. The permittee must establish a range for monitored parameters that indicates proper operation of the control or recovery device. In order to establish the range, the information required in §63.999(b)(3) must be submitted in the Notification of

Compliance Status or the operating permit application or amendment. [Reg19.304 and 40 C.F.R. § 63.996(c)(6)]

9. The permittee may request approval to use alternatives to the continuous operating parameter monitoring and recordkeeping provisions listed in §63.988(c), §63.990(c), §63.993(c), §63.994(c), §63.998(a)(2) through (4), §63.998(c)(2) and (3), as specified in §63.999(d)(1).

   In addition, the permittee may request approval to monitor a different parameter than those established or to set unique monitoring parameters if directed by §63.994(c)(2) or §63.995(c), as specified in §63.999(d)(2). [Reg19.304 and 40 C.F.R. § 63.996(d)(l) and (d)(2)]

10. If the permittee conducts performance tests for this control device, the permittee must maintain records necessary to determine the conditions of performance tests performed pursuant to §63.988(b). [Reg19.304 and 40 C.F.R. § 63.998(a)(2)(i)]

11. Where Subpart SS requires a continuous record, the permittee must maintain a record of: [Reg19.304 and 40 C.F.R. § 63.998(b)(1) and (b)(2)]

    a. Values measured at least once every 15 minutes or each measured value for systems which measure more frequently than once every 15 minutes or 15-minute block average values or once per minute if measured more frequently.

    b. Where data is collected from an automated continuous parameter monitoring system, the permittee may calculate and retain block hourly average values from each 15-minute block average period or from at least one measured value per minute if measured more frequently than once per minute, and discard all but the most recent three valid hours of continuous (l5-minute or shorter) records, if the hourly averages do not exclude periods of CPMS breakdown or malfunction. An automated CPMS records the measured data and calculates the hourly averages through the use of a computerized data acquisition system.

    c. A record as required by an alternative approved under a referencing subpart.

    d. Monitoring data recorded during periods identified in paragraphs (b)(2)(i) and (ii) of this section must not be included in any average computed to determine compliance with an emission limit in a referencing subpart.

12. The permittee must record daily calculated average values of each parameter for each operating day and retain for 5 years. As an alternative, the permittee may record that all parameter values are within the determined range and retain this record for 5 years, rather than calculating and recording daily averages. As an additional alternative, the permittee may implement the recordkeeping requirements in §63.998(b)(5)(i) or (ii). If the permittee chooses the alternative in §63.998(b)(5), the permittee must retain each record required by §63.998(b)(5)(i) or (ii). [Reg19.304 and 40 C.F.R. § 63.998(b)(3)(i), (b)(3)(ii), (b)(5), §63.998(c)(2)(i), and §63.998(c)(2)(ii)]

13. The permittee must record procedure used for calibrating the CPMSs. [Reg19.304 and 40 C.F.R. § 63.998(c)(1)(i)]

14. For a CPMSs used to comply with Subpart SS, the permittee must record the information specified in §63.998(c)(I)(ii)(A) through (H), as indicated in a referencing subpart. [Reg19.304 and 40 C.F.R. § 63.998(c)(1)(ii)]

15. The permittee must record the results of each calibration check and all maintenance performed on the CPMS as specified in §63.998(c)(I)(ii)(A). [Reg19.304 and 40 C.F.R. § 63.2450(k)(1)]

16. The permittee must maintain up-to-date, readily accessible records of periods of operation when the parameter boundaries are exceeded and the cause of these periods. [Reg19.304 and 40 C.F.R. § 63.998(c)(2)(iii) and (d)(5)]

17. The permittee must record the occurrence and duration of each startup, shutdown, and malfunction (excess emissions) of process or air pollution control equipment. [Reg19.304 and 40 C.F.R. § 63.998(d)(3)(i)]

18. The permittee must record that the procedures in the source's startup, shutdown, and malfunction plan (SSMP) were followed and document actions taken that are not consistent with the plan for each startup, shutdown, and malfunction (excess emissions) occurrence. [Reg19.304 and 40 C.F.R. § 63.998(d)(3)(ii)]

19. The permittee is not allowed any excused excursions as described in 40 CFR 63 Subparts G and SS. [Reg19.304 and 40 C.F.R. § 63.2450(m)(3)]

ADMA Unit

The ADMA process unit produces alkyl amines and uses a caustic scrubber for emission control purposes. In one operating scenario, the scrubber receives a process vent stream from an absorber that is used to make HBr product. The vent stream sent to the scrubber during this scenario contains less than 50 ppmv HAP and is thus exempt. Therefore, the scrubber is not required for compliance with the MON during this scenario.

In the second operating scenario, emissions from the reactor are routed directly to the scrubber and these emissions are greater than 50 ppmv and are greater than 1000 lb/yr HCl/Cl_2. Therefore, the vent is subject to the requirements of Subpart FFFF Table 3 - *Emission Limits for Hydrogen Halide and Halogen HAP Emissions or HAP Metals Emissions from Process Vents* and the scrubber is required to comply with the MON during this operating scenario.

Specific Conditions

1. The permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate, for any process vents within a process emit hydrogen halide and halogen HAP. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2465(b)]

2. If collective uncontrolled hydrogen halide and halogen HAP emissions from the process vents within a process are greater than or equal to 1,000 pounds per year (lb/yr), the permittee must comply with §63.994, except as specified in §63.2465(c)(I) through (3). The permittee must meet each emission limit in Table 3 - *Emission Limits for Hydrogen*

Halide and Halogen HAP Emissions or HAP Metals Emissions from Process Vents that apply and meet each applicable requirement in §63.2465(b) through (d). [Reg19.304 and 40 C.F.R. § 63.2450(e)(3), §63.2465(a), and §63.2465(c)]

3. The permittee must determine if an emission stream is a halogenated vent stream, as defined in §63.2550, by calculating the mass emission rate of halogen atoms in accordance with §63.115(d)(2)(v). Alternatively, the permittee may elect to designate the emission stream as halogenated. [Reg19.304 and 40 C.F.R. § 63.2450(b)]

4. The permittee must meet the requirements of §63.994 and the requirements referenced therein for halogen reduction devices used to reduce hydrogen halide and halogen HAP emissions from halogenated vent streams. [Reg19.304 and 40 C.F.R. § 63.2450(e)(3)]

5. Halogen scrubbers and other halogen reduction devices must be operated at all times when emissions are vented to them. [Reg19.304 and 40 C.F.R. § 63.994(a)(2)]

6. When §63.994(b)(1) requires a performance test, the permittee may elect to conduct a design evaluation in accordance with §63.1257(a)(1). If the permittee chooses to conduct a performance test, the performance test will be conducted according to §63.994(b)(1). [Reg19.304 and 40 C.F.R. § 63 .994(b)(1)]

7. The permittee must install a continuous pH monitoring device on the scrubber effluent. As an alternative to continuously measuring and recording pH as specified in §63.994(c)(1)(i) and §63.998(a)(2)(ii)(D), the permittee may elect to continuously monitor and record the caustic strength of the effluent. For halogen scrubbers used to control only batch process vents, the permittee may elect to monitor and record either the pH or the caustic strength of the scrubber effluent at least once per day. [Reg19.304 and 40 C.F.R. § 63.994(c)(1)(i)]

8. The permittee must locate a continuous liquid flow meter at the scrubber influent and determine gas stream flow using one of the procedures specified in §63.994(c)(1)(ii)(A) through (D). [Reg19.304 and 40 C.F.R. § 63.994(c)(1)(ii)]

9. For the ADMA scrubber (SN-AD-05), the permittee must comply with the Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring given in the general MON requirements section. [Reg19.304 and 40 C.F.R. § 63.996(c)(l)]

DMTDA Unit

The DMTDA process unit produces di-(methyl-thio)-toluene-diamine and dimethyl disulfide. During the dimethyl disulfide production scenario, no HAP is used therefore this operating scenario is not subject to the MON. The DMTDA production scenario is subject to the MON because it uses HAP.

The DMTDA production scenario is subject to the requirements for Group 2 continuous and batch process vents (TRE value> 5.0 for continuous process vents and emissions between 200 and 10,000 lb/yr for batch process vents). The DMTDA production scenario is also subject to the equipment leak provisions and potentially subject to the process condenser requirements. The unit does not use any control devices. The proposed permit conditions are presented below.

Specific Conditions

1. For each continuous process vent, the permittee must either designate the vent as a Group 1 continuous process vent or determine the total resource effectiveness (TRE) index value as specified in §63.115(d), except as specified in §63.2455(b)(1) through (3). [Reg19.304 and 40 C.F.R. § 63.2455(b)]

2. If a process has batch process vents, as defined in §63.2550, the permittee must determine the group status of the batch process vents by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(l) through (7). [Reg19.304 and 40 C.F.R. § 63.2460(b)]

3. The permittee may change from Group 2 to Group 1 in accordance with either §63.2460(b)(6)(i) or (ii) and must comply with the requirements of §63.2460 and submit the test report in the next compliance report. [Reg19.304 and 40 C.F.R. § 63.2460(b)(6)]

4. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2460(c)(1)]

5. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(v)]

6. The permittee must meet the requirements of §63.2480 for equipment leaks. [Reg19.304 and 40 C.F.R. § 63.2480]

7. If the permittee documents in the notification of compliance status report that total uncontrolled organic HAP emissions from the batch process vents in an MCPU will be less than 1,000 lb/yr for the anticipated number of standard batches, then the permittee must keep records of the number of batches operated and calculate a daily rolling annual sum of batches operated no less frequently than monthly.

   If the number of batches operated results in organic HAP emissions that exceed 1,000 lb/yr, the permittee must estimate emissions for the preceding 12 months based on the number of batches operated and the estimated emissions for a standard batch, and the permittee must begin recordkeeping as specified in §63.2525 (e)(4). After one year, the permittee may revert to recording only the number of batches if the number of batches operated during the year results in less than 1,000 lb of organic HAP emissions. [Reg19.304 and 40 C.F.R. § 63.2525(e)(3)]

<u>NC-12 Unit</u>

There are two batch process vents at the NC-12 unit, and emissions from one of the process vents is less than 50 ppm (exempt) and the permittee will limit the other process vent to 1,000 lb/yr

(Group 2). Otherwise, the NC-12 unit is not subject to any other MON requirements. NC-12 production unit has an alternate operating scenario where the NC-15 product is produced. As is the case with the NC-15 production unit, this operating scenario has one exempt process vent with less than 50 ppm and no other MON-affected emissions.

Specific Conditions

1. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2465(b)]

2. The permittee must keep records of the information specified below. [Reg19.304 and 40 C.F.R. § 63.2525(e)(4)]

    a. The day each batch was completed and/or the operating hours per day for continuous operations with hydrogen halide and halogen emissions.

    b. Whether each batch operated was considered a standard batch.

    c. Estimated uncontrolled and controlled emissions for each batch that is considered to be a nonstandard batch.

    d. The daily 365-day rolling summations of emissions, or alternative records that correlate to the emissions (e.g., number of batches), calculated no less frequently than monthly.

NC-15 Unit

There is a single batch process vent with emissions less than 50 ppm and this unit is exempt from the requirements for a batch process. However, since hydrogen chloride (HCl) is emitted the unit is subject to the requirement below.

Specific Conditions

1. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in§63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2465(b)]

NC-16 Unit

The continuous process vents, storage tanks, transfer racks, equipment leaks, wastewater, and heat exchanger equipment, if they exist, are covered under 40 CFR §63, Subpart F, G, and H – *National Emission Standards for Organic Hazardous Air Pollutants* (a.k.a. the HON).

Specific Conditions

1. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP

emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2465(b)]

NC-18 (BT-93W Process Only)

The only affected process at the NC-18 unit is the production of BT-93W. The BT-93W process contains combined emissions streams with both batch vents and continuous process vents. The permittee will comply with the emission limits and work practice standards for Group 1 batch process vents, based on the hierarchy given in §63.2450(c)(2) of the MON. The BT-93W process is also subject to the Subpart SS requirements for its incinerator control device.

Specific Conditions

1. The permittee must determine the applicable requirements based on the hierarchy presented in §63.2450(c)(2)(i) through (vi). For a combined stream, the applicable requirements are specified in the highest-listed paragraph in the hierarchy that applies to any of the individual streams that make up the combined stream. [Reg19.304 and 40 C.F.R. § 63.2450(c)(2)]

2. The permittee will comply with the requirements of Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* and §63.2460 for Group 1 batch process vents, including applicable monitoring, recordkeeping, and reporting. Therefore, per §63.2450(c)(2), compliance with these requirements will demonstrate compliance with the requirements for the following types of emission sources: [Reg19.304 and 40 C.F.R. § 63.2450(c)(2)(i)]

   a. Continuous Process Vents

   b. Transfer Operations

   c. Waste Management Units handling Group 1 Wastewater Streams

   d. Storage Tanks, and

   e. Continuous Process Vents with Final Recovery Devices

3. The permittee must meet each emission limit in Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* that apply and meet each applicable requirement specified in §63.2460(b) and (c). [Reg19.304 and 40 C.F.R. § 63.2460(a)]

4. The permittee must determine the group status of batch process vents, as defined in §63.2550, by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(1) through (7). [Reg19.304 and 40 C.F.R. § 63.2460(b)]

5. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP

emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2460(c)(1)]

6. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(v)]

7. To demonstrate initial compliance with a percent reduction emission limit in Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents*, the permittee must compare the sums of the controlled and uncontrolled emissions for the applicable Group 1 batch process vents within the process, and show that the specified reduction is met. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(i)]

8. When the permittee conducts a performance test or design evaluation for a non-flare control device used to control emissions from batch process vents, the permittee must establish emission profiles and conduct the test under worst-case conditions according to §63.l257(b)(8), instead of under normal operating conditions as specified in §63.7(e)(l). The requirements in §63.997(e)(l)(i) and (iii) also do not apply for performance tests conducted to determine compliance with the emission limits for batch process vents. For references in §63.997(b)(l) to "methods specified in §63.997(e)" include the methods specified in §63.l257(b)(8). [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(ii)]

9. The permittee must conduct a subsequent performance test or compliance demonstration equivalent to an initial compliance demonstration within 180 days of a change in the worst case conditions. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(vi)]

10. The permittee must establish operating limits under the conditions required for the initial compliance demonstration, except the permittee may elect to establish operating limit(s) for conditions other than those under which a performance test was conducted as specified in §63.2460(c)(3)(i) and, if applicable, §63.2460(c)(3)(ii). [Reg19.304 and 40 C.F.R. § 63.2460(c)(3)]

11. If flow to a control device could be intermittent, the permittee must install, calibrate, and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow. Periods of no flow may not be used in daily or block averages, and it may not be used in fulfilling a minimum data availability requirement. [Reg19.304 and 40 C.F.R. § 63.2460(c)(7)]

12. The permittee must meet the requirements of §63.982(c) and the requirements referenced therein, except when complying with §63.2485, if the permittee reduces organic HAP emissions by venting emissions through a closed-vent system to any combination of control devices (except a flare) or recovery devices. The permittee will comply with this requirement by compliance with the Closed Vent System Requirements given in the general MON requirements section. [Reg19.304 and 40 C.F.R. § 63.2450(e)(1)]

13. For the NC-18 incinerator, the permittee must comply with the Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring given in the general MON requirements section. [Reg19.304 and 40 C.F.R. § 63.996(c)(l)]

14. The permittee must comply with the requirements specified in §63.2450(g)(1) through (5) for performance tests. [Reg19.304 and 40 C.F.R. § 63.2450(g)]

15. The permittee may use either §63.2450(i)(1) or (i)(2) to correct for supplemental gas. [Reg19.304 and 40 C.F.R. § 63.2450(i)]

16. The permittee must operate incinerators at all times when emissions are vented to them. [Reg19.304 and 40 C.F.R. § 63.988(a)(2)]

17. The permittee must install a temperature monitoring device in the fire box or ductwork downstream of the fire box. [Reg19.304 and 40 C.F.R. § 63.988(c)(1)]

18. The permittee must maintain records necessary to determine the conditions of performance tests performed pursuant to §63.988(b) must be available upon request. [Reg19.304 and 40 C.F.R. § 63.998(a)(2)(i)]

19. Where the permittee seeks to demonstrate compliance with a percent reduction requirement or a parts per million by volume requirement using a non-flare combustion device the information specified below must be recorded. [Reg19.304 and 40 C.F.R. § 63.998(a)(2)(ii)(B)]

    a. The fire box temperature averaged over full period of performance test.

    b. The percent reduction of organic regulated material, if applicable, or TOC achieved by the incinerator determined as specified in §63.997(e)(2)(iv), as applicable, or the concentration of organic regulated material (parts per million by volume, by compound) determined as specified in §63.997(e)(2)(iii) at the outlet of the incinerator.

20. The permittee must meet each emission limit in Subpart FFFF Table 1 - *Emission Limits and Work Practice Standards for Continuous Process Vents* that applies to continuous process vents and meet each applicable requirement specified in §63 .2455(b) through (c). Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [Reg19.304 and 40 C.F.R. § 63.2455(a)]

21. The permittee must meet each requirement in Subpart FFFF Table 6 - *Requirements for Equipment Leaks* that applies to equipment leaks, except as specified in §63.2480(b) through (d). [Reg19.304 and 40 C.F.R. § 63.2480(a)]

22. The permittee must meet each requirement in Subpart FFFF Table 7 - *Requirements for Wastewater Streams and Liquid Streams in Open Systems Within a MCPU* that applies to wastewater streams and liquid streams in open systems within a MCPU, except as specified in §63.2485(b) through (o). [Reg19.304 and 40 C.F.R. § 63.2485]

23. The permittee must comply with each requirement in Subpart FFFF Table 10 - *Work Practice Standards for Heat Exchange Systems* that apply to heat exchange systems, except as specified in §63.2490(b) and (c). [Reg19.304 and 40 C.F.R. § 63.2490(a)]

NC-21 Unit

The NC-21 unit is similar to the NC-18 unit. Like the NC-18 unit, NC-21 has combined emission streams (i.e., batch vents, continuous vents, and storage tanks), and the permittee will comply with the emission limits and work practice standards for Group 1 batch process vents, based on the hierarchy of the MON. The NC-21 unit is also subject to the Subpart SS requirements for its incinerator control device.

Specific Conditions

1. The permittee must determine the applicable requirements based on the hierarchy presented in §63.2450(c)(2)(i) through (vi). For a combined stream, the applicable requirements are specified in the highest-listed paragraph in the hierarchy that applies to any of the individual streams that make up the combined stream. [Reg19.304 and 40 C.F.R. § 63.2450(c)(2)]

2. The permittee will comply with the requirements of Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* and §63.2460 for Group 1 batch process vents, including applicable monitoring, recordkeeping, and reporting. Therefore, per §63.2450(c)(2), compliance with these requirements will demonstrate compliance with the requirements for the following types of emission sources: [Reg19.304 and 40 C.F.R. § 63.2450(c)(2)(i)]

   a. Continuous Process Vents

   b. Transfer Operations

   c. Waste Management Units handling Group I Wastewater Streams

   d. Storage Tanks

   e. Continuous Process Vents with Final Recovery Devices

3. The permittee must meet each emission limit in Subpart FFFF Table 2 - *Emission Limits and Work Practice Standards for Batch Process Vents* that apply and meet each applicable requirement specified in §63.2460(b) and (c). [Reg19.304 and 40 C.F.R. § 63.2460(a)]

4. The permittee must determine the group status of batch process vents, as defined in §63.2550, by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63 .2460(b)(1) through (7). [Reg19.304 and 40 C.F.R. § 63.2460(b)]

5. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2460(c)(1)]

6. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(v)]

7. To demonstrate initial compliance with a percent reduction emission limit in Subpart FFFF Table 2 – *Emission Limits and Work Practice Standards for Batch Process Vents*, the permittee must compare the sums of the controlled and uncontrolled emissions for the applicable Group 1 batch process vents within the process, and show that the specified reduction is met. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(i)]

8. When the permittee conducts a performance test or design evaluation for a non-flare control device used to control emissions from batch process vents, the permittee must establish emission profiles and conduct the test under worst-case conditions according to §63.1257(b)(8), instead of under normal operating conditions as specified in §63.7(e)(1). The requirements in §63.997(e)(I)(i) and (iii) also do not apply for performance tests conducted to determine compliance with the emission limits for batch process vents. For references in §63.997(b)(1) to "methods specified in §63.997(e)" include the methods specified in §63.1257(b)(8). [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(ii)]

9. The permittee must conduct a subsequent performance test or compliance demonstration equivalent to an initial compliance demonstration within 180 days of a change in the worst case conditions. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(vi)]

10. The permittee must establish operating limits under the conditions required for the initial compliance demonstration, except the permittee may elect to establish operating limit(s) for conditions other than those under which a performance test was conducted as specified in §63.2460(c)(3)(i) and, if applicable, §63.2460(c)(3)(ii). [Reg19.304 and 40 C.F.R. § 63.2460(c)(3)]

11. If flow to a control device could be intermittent, the permittee must install, calibrate, and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow. Periods of no flow may not be used in daily or block averages, and it may not be used in fulfilling a minimum data availability requirement. [Reg19.304 and 40 C.F.R. § 63.2460(c)(7)]

12. The permittee must meet the requirements of §63.982(c) and the requirements referenced therein, except when complying with §63.2485, if the permittee reduces organic HAP emissions by venting emissions through a closed-vent system to any combination of control devices (except a flare) or recovery devices. The permittee will comply with this requirement by compliance with the Closed Vent System Requirements given in the general MON requirements section. [Reg19.304 and 40 C.F.R. § 63.2450(e)(1)]

13. For the NC-2l incinerator, the permittee must comply with the Monitoring and Recordkeeping Requirements for Control Devices with Continuous Monitoring given in the general MON requirements section. [Reg19.304 and 40 C.F.R. § 63.996(c)(l)]

14. The permittee must comply with the requirements specified in §63.2450(g)(1) through (5) for performance tests. [Reg19.304 and 40 C.F.R. § 63.2450(g)]

15. The permittee may use either §63.2450(i)(1) or (i)(2) to correct for supplemental gas. [Reg19.304 and 40 C.F.R. § 63.2450(i)]

16. The permittee must operate incinerators at all times when emissions are vented to them. [Reg19.304 and 40 C.F.R. § 63.988(a)(2)]

17. The permittee must install a temperature monitoring device in the fire box or ductwork downstream of the fire box. [Reg19.304 and 40 C.F.R. § 63.988(c)(1)]

18. The permittee must maintain records necessary to determine the conditions of performance tests performed pursuant to §63.988(b) and must be available upon request. [Reg19.304 and 40 C.F.R. § 63.998(a)(2)(i)]

19. Where the permittee seeks to demonstrate compliance with a percent reduction requirement or a parts per million by volume requirement using a nonflare combustion device the information specified below must be recorded. [Reg19.304 and 40 C.F.R. § 63.998(a)(2)(ii)(B)]

    a. The fire box temperature averaged over full period of performance test.

    b. The percent reduction of organic regulated material, if applicable, or TOC achieved by the incinerator determined as specified in §63.997(e)(2)(iv), as applicable, or the concentration of organic regulated material (parts per million by volume, by compound) determined as specified in §63.997(e)(2)(iii) at the outlet of the incinerator.

20. The permittee must meet each emission limit in Subpart FFFF Table 1 - *Emission Limits and Work Practice Standards for Continuous Process Vents* that applies to continuous process vents and meet each applicable requirement specified in §63.2455(b) through (c). Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [Reg19.304 and 40 C.F.R. § 63.2455(a)]

21. If, in the future, a scrubber is used at the NC-21 unit to comply with the requirements of Subpart FFFF Table 3 - *Emission Limits for Hydrogen Halide and Halogen HAP Emissions or HAP Metals Emissions from Process Vents,* then the permittee must comply with the MON requirements specifically applicable to hydrogen halide halogen HAP scrubbers given in proposed Conditions 2 through 9 in the ADMA section. [Reg19.304 and 40 C.F.R. § 63.2450(e)(3), §63.2465(a), and §63.2465(c)]

22. The permittee must meet each emission limit in Subpart FFFF Table 4 - *Emission Limits for Storage Tanks* that applies to storage tanks and meet each applicable requirement specified in §63.2470(b) through (e). Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [Reg19.304 and 40 C.F.R. § 63.2470(a)]

23. For each surge control vessel or bottoms receiver that meets the capacity and vapor pressure thresholds for a Group 1 storage tank, the permittee must meet emission limits

and work practice standards specified in Subpart FFFF Table 4 - *Emission Limits for Storage Tanks*. Per §63.2450(c)(2), compliance with these requirements will be demonstrated per compliance with the requirements for batch process vents. [Reg19.304 and 40 C.F.R. § 63.2450(r)]

24. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2465(b)]

25. The permittee must meet each requirement in Subpart FFFF Table 6 - *Requirements for Equipment Leaks* that applies to equipment leaks, except as specified in §63.2480(b) through (d). [Reg19.304 and 40 C.F.R. § 63.2480(a)]

26. The permittee must meet each requirement in Subpart FFFF Table 7 - *Requirements for Wastewater Streams and Liquid Streams in Open Systems Within an MCPU* that applies to wastewater streams and liquid streams in open systems within an MCPU, except as specified in §63.2485(b) through (o). [Reg19.304 and 40 C.F.R. § 63.2485]

27. The permittee must comply with each requirement in Subpart FFFF Table 10 - *Work Practice Standards for Heat Exchange Systems* that apply to heat exchange systems, except as specified in §63.2490(b) and (c). [Reg19.304 and 40 C.F.R. § 63.2490(a)]

NC-22 Unit

The NC-22 unit has four batch process vents with emissions less than 50 ppm and this unit is exempt from the requirements for a batch process. However, since hydrogen chloride (HCL) is emitted the unit is subject to the requirement below.

Specific Conditions

1. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2465(b)]

2. Due to the presence of methylene chloride, the NC-22 is potentially subject to the MON for organic HAP emissions. All batch process vents, continuous process vents, storage vessels, wastewater streams, and transfer operations qualify as Group 2. Therefore, only recordkeeping and reporting requirements apply. The DMTDA unit has similar MON MACT applicability. Therefore, the NC-22 complies with the Specific Conditions1 through 7 listed in the DMTDA MON MACT specific requirements. Specific Condition 6 is not applicable since no components in the NC-22 process contact materials with an organic HAP concentration greater than 5%. As applicable, the NC-22 unit also complies with Specific Conditions 1 through 16 in the list of Generally Applicable Subpart A and MON MACT requirements.

NC-23 Unit

The NC-23 unit contains either exempt continuous process vents or continuous process vents with a TRE greater than 5.0. Therefore, no MON control requirements apply. The batch process vents at this unit are Group 2. The storage tanks contain phenol which has a vapor pressure less than 1.0 psia. Therefore the storage tanks are Group 2.

Specific Conditions

1. For each continuous process vent, the permittee must either designate the vent as a Group 1 continuous process vent or determine the total resource effectiveness (TRE) index value as specified in §63.115(d), except as specified in §63.2455(b)(1) through (3). [Reg19.304 and 40 C.F.R. § 63.2455(b)]

2. If a process has batch process vents, as defined in §63.2550, the permittee must determine the group status of the batch process vents by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(1) through (7). [Reg19.304 and 40 C.F.R. § 63.2460(b)]

3. The permittee may change from Group 2 to Group I in accordance with either §63.2460(b)(6)(i) or (ii) and must comply with the requirements of §63.2460 and submit the test report in the next compliance report. [Reg19.304 and 40 C.F.R. § 63 .2460(b)(6)]

4. Process condensers, as defined in §63.2550(i), are not considered to be control devices for batch process vents. The permittee must determine whether a condenser is a control device for a batch process vent or a process condenser from which the uncontrolled HAP emissions are evaluated as part of the initial compliance demonstration for each MCPU and report the results with supporting rationale in the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2460(c)(1)]

5. If a process condenser is used for any boiling operations, the permittee must demonstrate that it is properly operated according to the procedures specified in §63.1257(d)(2)(i)(C)(4)(ii) and (d)(3)(iii)(B), and the demonstration must occur only during the boiling operation. The reference in §63.1257(d)(3)(iii)(B) to the alternative standard in §63.1254(c) means §63.2505. As an alternative to measuring the exhaust gas temperature, as required by §63.1257(d)(3)(iii)(B), the permittee may elect to measure the liquid temperature in the receiver. [Reg19.304 and 40 C.F.R. § 63.2460(c)(2)(v)]

6. The permittee must meet the requirements of §63.2480 for equipment leaks. [Reg19.304 and 40 C.F.R. § 63.2480]

7. The permittee must meet each requirement in Subpart FFFF Table 7 - *Requirements for Wastewater Streams and Liquid Streams in Open Systems Within an MCPU* that applies to wastewater streams and liquid streams in open systems within an MCPU, except as specified in §63.2485(b) through (o). [Reg19.304 and 40 C.F.R. § 63.2485]

8. If the permittee documents in the notification of compliance status report that total uncontrolled organic HAP emissions from the batch process vents in an MCPU will be less than 1,000 lb/yr for the anticipated number of standard batches, then the permittee must keep records of the number of batches operated and calculate a daily rolling annual

sum of batches operated no less frequently than monthly. If the number of batches operated results in organic HAP emissions that exceed 1,000 lb/yr, the permittee must estimate emissions for the preceding 12 months based on the number of batches operated and the estimated emissions for a standard batch, and the permittee must begin recordkeeping as specified in §63.2525(e)(4). After 1 year, the permittee may revert to recording only the number of batches if the number of batches operated during the year results in less than 1,000 lb of organic HAP emissions. [Reg19.304 and 40 C.F.R. § 63.2525(e)(3)]

NC-24 Unit

The NC-24 unit has two continuous process vent with emissions less than 50 ppm and batch process vents with less than 200 lb/yr of HAP. Therefore, the NC-24 unit is exempt from the requirements for a batch process. However, since hydrogen chloride (HCl) is emitted the unit is subject to the requirement below.

Specific Conditions

1. If a process has batch process vents, as defined in §63.2550, the permittee must determine the group status of the batch process vents by determining and summing the uncontrolled organic HAP emissions from each of the batch process vents within the process using the procedures specified in §63.1257(d)(2)(i) and (ii), except as specified in §63.2460(b)(l) through (7). [Reg19.304 and 40 C.F.R. § 63.2460(b)]

2. If any process vents within a process emit hydrogen halide and halogen HAP, the permittee must determine and sum the uncontrolled hydrogen halide and halogen HAP emissions from each of the process vents within the process using the procedures specified in §63.1257(d)(2)(i) and/or (ii), as appropriate. When §63.1257(d)(2)(ii)(E) requires documentation to be submitted in the pre-compliance report, it means the notification of compliance status report. [Reg19.304 and 40 C.F.R. § 63.2465(b)]

SECTION V: COMPLIANCE PLAN AND SCHEDULE

Albemarle Corporation—South Plant 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. The permittee shall notify the Director in writing within thirty (30) days after commencing construction, completing construction, first placing the equipment and/or facility in operation, and reaching the equipment and/or facility target production rate. [Reg.19.704, 40 C.F.R. § 52 Subpart E, and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

2. If the permittee fails to start construction within eighteen months or suspends construction for eighteen months or more, the Director may cancel all or part of this permit. [Reg.19.410(B) and 40 C.F.R. § 52 Subpart E]

3. The permittee must test any equipment scheduled for testing, unless otherwise stated in the Specific Conditions of this permit or by any federally regulated requirements, within the following time frames: (1) new equipment or newly modified equipment within sixty (60) days of achieving the maximum production rate, but no later than 180 days after initial start up of the permitted source or (2) operating equipment according to the time frames set forth by the Department or within 180 days of permit issuance if no date is specified. The permittee must notify the Department of the scheduled date of compliance testing at least fifteen (15) business days in advance of such test. The permittee shall submit the compliance test results to the Department within thirty (30) calendar days after completing the testing. [Reg.19.702 and/or Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

4. The permittee must provide:

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

    [Reg.19.702 and/or Reg.18.1002 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

5. The permittee must operate the equipment, control apparatus and emission monitoring equipment within the design limitations. The permittee shall maintain the equipment in good condition at all times. [Reg.19.303 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

6. This permit subsumes and incorporates all previously issued air permits for this facility. [Reg. 26 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

7. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

8. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

9. Any annual records or annual emission calculations required by this permit shall be based upon a 12-month rolling total. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

10. 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 exceedance.
c. the cause of any observed exceedance of opacity limits, corrective action taken, and results of the reassessment.
d. The name of the person conducting the observation/reading.

[Reg.19.705 and 40 C.F.R. § 52 Subpart E]

11. 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

12. Where no more stringent federal regulation applies, the permittee will be found in compliance with fugitive emissions limits in this permit when equipment in the affected unit is operated and maintained consistent with good industry practices, where no more stringent federal regulation applies (e.g., NSPS or MACT), and if the permittee calculates all fugitive emissions for each process area once 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. [Reg.19.705 and 40 C.F.R. § 52 Subpart E]

13. 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. [Reg.19.304 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

14. The permittee shall fully comply with all applicable requirements of the National Emission Standard for Asbestos. [Reg.19.304 and 40 C.F.R. § 61, Subpart M]

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

16. The permittee shall comply with all emission rates in the permit, and show compliance through the required testing, operating parameters monitoring, or any other associated permit requirements.

    In the event the initial stack test for any constituent at any new or modified source demonstrates that unanticipated emissions are present or exceed the applicable emission limitations, the permittee shall not be considered to be in violation of the permit limits, provided that:

    a. the permittee files an excess emission report which complies with the applicable requirements of Regulation 18 and/or Regulation 19;
    b. the permitted emission rates were established based on the published emission factors or industry-specific test data;
    c. the excess emissions do not exceed any threshold established in Regulation 18, or Regulation 19 for a de minimis change, the permittee submits an application for a minor modification of its permit within sixty (60) days of the filing of the excess emissions report; and
    d. the permittee pays permit fees based upon the modified emission rates from the date of initial operation of the new or modified source.

    [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

17. The permittee shall comply with all non-criteria emission rates in the permit and show compliance through the required testing, operating parameters monitoring, or any other associated permit requirements.

    Certain emission rates listed in this permit were developed using estimates or published emission factors. For emission limits based on published emission factors or industry specific test data, a change in emission factors that affects the estimated emission rates shall not be considered a violation of the permit limits.

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

    [Reg.18.801 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

18. 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. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

19. 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 cannot be achieved, the permittee shall thenceforth be limited to 10 percent above the actual tested throughput. [Reg.19.702 and 40 C.F.R. § 52 Subpart E]

20. Where applicable, the permittee must prepare and implement a Startup, Shutdown, and Malfunction Plan (SSM). If the Department requests a review of the SSM, the permittee will make the SSM available for review. The permittee must keep a copy of the SSM at the source's location and retain all previous versions of the SSM plan for five years. [Reg.19.304 and 40 C.F.R. § 63.6(e)(3)]

21. The permittee shall document that all reciprocating internal combustion engines (RICE) are less than 500 brake horsepower or are exempt from 40 CFR Part 63, Subpart ZZZZ per §63.6590(b)(3) or are subject only to the initial notification requirement per §63.6590(b)(1). The permittee shall not begin construction, installation, and/or operation of a RICE subject to any standards or requirements beyond the initial notification requirement under 40 CFR Part 63, Subpart ZZZZ without first submitting and obtaining approval from ADEQ for a permit modification that addresses applicable requirements and compliance. [Reg.19.304 and 40 C.F.R. § 63, Subpart ZZZZ]

22. RESERVED

NESHAP DDDDD

23. The sources identified in the table below are affected sources subject to the requirements of 40 C.F.R. 63, Subpart DDDDD – *National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters*. For the purpose of the subpart these boiler are designated as an existing unit that belongs to the units designed to burn gas 1 fuels subcategory. The permittee shall comply with the subpart no later than January 31, 2016, except as provided in § 63.6(i). The applicable requirements include, but are not limited to the following: [Reg.19.304 and 40 C.F.R. § 63, Subpart DDDDD]

Source No.	Boiler MACT Subcategory	Heat Input Capacity (MMBtu/hr)
SN-AD-16	63.7499 (l) Units designed to burn gas 1 fuels	3.55
SN-15-14A	63.7499 (l) Units designed to burn gas 1 fuels	1.0
SN-15-148	63.7499 (l) Units designed to burn gas 1 fuels	1.0
SN-16-20	63.7499 (l) Units designed to burn gas 1 fuels	4.4
SN-16-30	63.7499 (l) Units designed to burn gas 1 fuels	1.2

SN-BH-01	63.7499 (l) Units designed to burn gas 1 fuels	340
SN-BH-02	63.7499 (l) Units designed to burn gas 1 fuels	340

Emission Limits, Operating Limits, Work Practice Standards and Monitoring Requirements

a. Boilers and process heaters in the units designed to burn gas 1 fuels subcategory are not subject to the emission limits in Tables 1 and 2 or 11 through 13 or the operating limits in Table 4 to Subpart DDDDD. [Reg.19.304 and 40 C.F.R. § 63.7500 (e)]

b. The permittee shall complete an initial tune-up by following the procedures described in § 63.7510 (c) no later than January 31, 2016. [Reg.19.304 and 40 C.F.R. § 63.7510 (e)]

c. The permittee shall conduct a tune-up of the boiler or process heater annually (SN-BH-01 or SN-BH-02) or every five years (SN-AD-16, SN-15-14A, SN-15-148, SN-16-20, SN-16-30) in order to demonstrate continuous compliance. Each tune up shall include: [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)]

i. As applicable, inspect the burner, and clean or replace any components of the burner as necessary (you may perform the burner inspection any time prior to the tune-up or delay the burner inspection until the next scheduled unit shutdown). [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(i)]

ii. Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available; [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(ii)]

iii. Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly (you may delay the inspection until the next scheduled unit shutdown). Units that produce electricity for sale may delay the inspection until the first outage, not to exceed 36 months from the previous inspection; [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(iii)]

iv. Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any NOX requirement to which the unit is subject; [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(iv)]

v. Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the

adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer; and [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(v)]

vi. Maintain on-site and submit, if requested by the Administrator, a report containing the information as follows: [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(vi)]

A. The concentrations of CO in the effluent stream in parts per million by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler or process heater; [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(vi)(A)]

B. A description of any corrective actions taken as a part of the tune-up; and [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(vi)(B)]

C. The type and amount of fuel used over the 12 months prior to the tune-up, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel used by each unit. [Reg.19.304 and 40 C.F.R. § 63.7540 (a)(10)(vi)(C)]

d. The permittee must complete the one-time energy assessment specified in Table 3 to this subpart no later than January 31, 2016. [Reg.19.304 and 40 C.F.R. § 63.7510 (e)]

Notifications

e. The permittee submit to the Administrator all of the notifications in §§63.7(b) and (c), 63.8(e), (f)(4) and (6), and 63.9(b) through (h) that apply to you by the dates specified. [Reg.19.304 and 40 C.F.R. § 63.7545 (a)]

f. If you are not required to conduct an initial compliance demonstration as specified in §63.7530(a), the Notification of Compliance Status must only contain the information specified in paragraphs (e)(1) and (8) of this section and must be submitted within 60 days of January 31, 2016. [Reg.19.304 and 40 C.F.R. § 63.7545 (e)]

g. In addition to the information required in §63.9(h)(2), your notification of compliance status must include the following certification(s) of compliance, as applicable, and signed by a responsible official: [Reg.19.304 and 40 C.F.R. § 63.7545 (e)(8)]

i. "This facility completed the required initial tune-up for all of the boilers and process heaters covered by 40 CFR part 63 subpart DDDDD at this site according to the procedures in §63.7540(a)(10)(i) through (vi)." [Reg.19.304 and 40 C.F.R. § 63.7545 (e)(8)(i)]

ii. "This facility has had an energy assessment performed according to §63.7530(e)." [Reg.19.304 and 40 C.F.R. § 63.7545 (e)(8)(ii)]

Reporting

h. The permittee shall submit annual compliance reports in accordance with § 63.7550 and Table 9 to Subpart DDDDD. The permittee shall submit a compliance report with the information in 63.7550 (c)(5)(i) through (iii), (xiv), and (xvii). [Reg.19.304 and 40 C.F.R. § 63.7550(a)]

Table 9 to Subpart DDDDD of Part 63—Reporting Requirements	
You must submit a …	The report must contain …
1. Compliance report	a. Information required in §63.7550(c)(1) through (5); and
	b. If there are no deviations from any emission limitation (emission limit and operating limit) that applies to you and there are no deviations from the requirements for work practice standards for periods of startup and shutdown in Table 3 to this subpart that apply to you, a statement that there were no deviations from the emission limitations and work practice standards during the reporting period. If there were no periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), a statement that there were no periods during which the CMSs were out-of-control during the reporting period; and
	c. If you have a deviation from any emission limitation (emission limit and operating limit) where you are not using a CMS to comply with that emission limit or operating limit, or a deviation from a work practice standard for periods of startup and shutdown, during the reporting period, the report must contain the information in §63.7550(d); and
	d. If there were periods during which the CMSs, including continuous emissions monitoring system, continuous opacity monitoring system, and operating parameter monitoring systems, were out-of-control as specified in §63.8(c)(7), or otherwise not operating, the report must contain the information in §63.7550(e)

Recordkeeping

i. The permittee shall keep a copy of each notification and report that submitted to comply with Subpart DDDDD, including all documentation supporting any Initial Notification or Notification of Compliance Status or semiannual compliance report that you submitted, according to the requirements in §63.10(b)(2)(xiv). [Reg.19.304 and 40 C.F.R. § 63.7555 (a)(1)]

j. The permittee's records must be in a form suitable and readily available for expeditious review, according to §63.10(b)(1). [Reg.19.304 and 40 C.F.R. § 63.7560(a)]

k. As specified in §63.10(b)(1), the permittee shall keep each record for 5 years following the date of each occurrence, measurement, maintenance, corrective action, report, or record. [Reg.19.304 and 40 C.F.R. § 63.7560(b)]

Title VI Provisions

24. The permittee must comply with the standards for labeling of products using ozone-depleting substances. [40 C.F.R. § 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.

25. The permittee must comply with the standards for recycling and emissions reduction, except as provided for MVACs in Subpart B. [40 C.F.R. § 82 Subpart F]

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.

26. 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 C.F.R. § 82 Subpart A, Production and Consumption Controls.

27. 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 C.F.R. § 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.

28. The permittee can switch from any ozone depleting substance to any alternative listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 C.F.R. § 82 Subpart G.

Permit Shield

29. Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements, as of the date of permit issuance, included in and specifically identified in the following table of this condition. The permit specifically identifies the following as applicable requirements based upon the information submitted by the permittee in an application dated April 8, 2016.

Applicable Regulations

Source No.	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
All sources or units subject to a 40 CFR Part 63 standard	40 CFR Part 63, Subpart A	National Emission Standards for Hazardous Air Pollutants for Source Categories, General Provisions

Source No.	Regulation	Description
AB-15 AB-16 AB-18	40 CFR Part 63, Subpart F	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
AB-15 AB-18	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 AB-16	40 CFR Part 63, Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
TB-11	40 CFR Part 63, Subpart F	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
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		
WW-01	40 CFR Part 63, Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
NC-23 (MeBr Process)	40 CFR Part 82, Subpart A	Protection of Stratospheric Ozone, Production and Consumption Controls
NC-23 (MeBr Process)	40 CFR Part 82, Subpart E	Protection of Stratospheric Ozone, The Labeling of Products Using Ozone-Depleting Substances
NC-16/NC-17	40 CFR Part 63, Subpart F	National Emission Standards for Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry
CMPU		
NC-23 (MeBr Process)		
NC-16/NC-17	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
CMPU		
NC-23 (MeBr Process)		
NC-16/NC-17	40 CFR Part 63, Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
CMPU		
NC-23 (MeBr Process)		
21-01	40 CFR Part 61, Subpart A	National Emission Standards for Hazardous Air Pollutants, General Provisions
21-02		
21-01	40 CFR Part 61, Subpart J	National Emission Standards for Equipment Leaks (Fugitive Emission Sources) of Benzene
21-02		
21-01	40 CFR Part 61, Subpart V	National Emission Standards for Equipment Leaks (Fugitive Emission Sources)
21-02		
21-01	40 CFR Part 61, Subpart Y	National Emission Standards for Benzene Emissions from Benzene Storage Vessels
21-02		
21-03	40 CFR Part 61, Subpart FF	National Emission Standards for Benzene Waste Operations
MS-05	40 CFR Part 63, Subpart JJ	National 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
MCPU's:	40 CFR Part 63, Subpart FFFF	
ADMA		

Source No.	Regulation	Description
DMTDA		National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing and Miscellaneous Coating Manufacturing;
NC-12		
NC-15		
NC-17	40 CFR Part 63, Ssubpartubpart SS	National Emission Standards for Closed Vent Systems, Control Devices, Recovery Devices and Routing to a Fuel Gas System or a Process
NC-18 (BT-93W Process Only)		
NC-21		
NC-22		
NC-23		
NC-24		
CB-04	40 CFR Part 63, Subpart EEEE	National Emission Standards for Hazardous Air Pollutants: Organic Liquids Distribution (Non-Gasoline)
All Ethylene Glycol Storage		
Facility	40 CFR Part 82, Subpart A	Recycling and Emissions Reduction
Process Heaters and Boilers	40 CFR Part 63, Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters
Facility	40 CFR Part 82, Subpart F	Recycling and Emissions Reduction

SECTION VII: INSIGNIFICANT ACTIVITIES

The Department deems the following types of activities or emissions as insignificant on the basis of size, emission rate, production rate, or activity in accordance with Group A of the Insignificant Activities list found in Regulation 18 and Regulation 19 Appendix A. Group B insignificant activities may be listed but are not required to be listed in permits. Insignificant activity emission determinations rely upon the information submitted by the permittee in an application dated April 6, 2016 and February 26, 2019. [Reg.26.304 and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

Description		Category
BR-05	Recovered Groundwater Storage Tank, T-3045	A13
BR-16	C-12 Olefin Storage (up to 10,000 gal total capacity)	A3
SL-03	Sulfinol Storage Sump (S-1901)	A3
SL-04	MDEA Storage Tank (T-5001)	A3
CB-10	Wash Water Tank	A13
CB-20	Formic Acid Storage Bins	A13
DE-05	Pressure Vessel	A13
AD-38	Alcohol Addition System	A13
AB-17	T-703 Ethylene Glycol Storage Tank	A3
TB-08	Polymer Transfer	A13
TB-13	Refrigerant Storage Tank	A3
TB-26	Sulfuric Acid Storage Tank Alternate Use: Ethylene Glycol Storage	A3
TB-27	Refrigerant Storage Tank	A3
TB-36	Water Scrubber Tank	A3
TB-40	Raw Material Weigh Vessel	A13
TB-43	During NC-22 Scenario B and C	A13
TB-44	Heating System Expansion Tank	A13
--	Hot Water Tank 67-65-1	A13
--	Area Safety Relief Knockout Pot D-9505	A13
--	Antifoam Storage Tank, T-95107	A13
--	Hot Water Tank, T-602	A13
--	Pressurized Ethylene Glycol Storage Tank, (D-9972)	A13
16-09	EBTBP Ambient Dust Collector SF9398	A13
--	Ethylene Glycol Tanks, T-93952, T-9393, T-9351, T-9359, T-9392	A3
--	Hot Oil Expansion Tank / Heat Transfer fluid Tank, T-9354	A2
--	Hot Oil Surge Tank, D-3490	A13
BT-02	Purchased Brine Surge Tank, T-3017	A13
BT-03	Brine/Oil Separator OS-3002	A13
BT-04	Feed Brine Pump Suction Header Vent	A13

Description		Category
BT-05	Overflow Line Vent	A13
BT-06	Overflow Line Vent	A13
BT-07	Feed Brine Pump Suction Header Vent	A13
BT-08	Brine/Oil Separator Outlet Line Vent	A13
BT-09	Overflow Line Vent	A13
BT-10	Brine/Oil Separator Outlet Line Vent (OS-3002)	A13
BT-14	Vacuum Pump Vent	A13
BT-15	Overflow Line Vent	A13
BT-18	Brine Underflow Line Vent	A13
BT-19	Brine Underflow Line Vent	A13
BT-20	Brine Underflow Line Vent	A13
BT-30	Brine Management Line Vent	A13
DM-04	Catalyst Loading	A13
DM-05	Stabilizer Hopper	A13
--	Solid Waste Vault No. 2	A13
--	Outfall 002 Bioreactor	A13
--	PSV-1 Sumps	A13
MS-09	Diesel fuel Storage Tanks (up to 10,000 gallons total capacity)	A3
MS-10	Gasoline Storage Tanks (up to 2,000 gallons total capacity)	A13
MS-11	Cooling Towers (Maintenance/Support Facilities)	A13
--	Drinking Water Treatment and Distribution	A13
--	Quality Control Laboratory	A5
--	A-12 Emergency Systems Generators – Phone System and Admin Bldg Backup, Emergency Fire Pumps (2), Potable Water Supply Backup, Material Analyzer Backup, Outfall Flow Monitor Battery Backup	A12
DB-23	DPE Heavies Storage Tank	A3
--	200 gallon Hot Oil Tank (CP-6000-68)	A3
--	pH Adjustment Bag Dumping	A13

SECTION VIII: GENERAL PROVISIONS

1. 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 (Ark. Code Ann. § 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 (Ark. Code Ann. § 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 (Ark. Code Ann. § 8-4-101 *et seq.*) as the origin of and authority for the terms or conditions are enforceable under this Arkansas statute. [40 C.F.R. § 70.6(b)(2)]

2. 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. [40 C.F.R. § 70.6(a)(2) and Reg.26.701(B)]

3. The permittee must submit a complete application for permit renewal at least six (6) months before permit expiration. Permit expiration terminates the permittee's right to operate unless the permittee submitted a complete renewal application at least six (6) months before permit expiration. If the permittee submits a complete application, the existing permit will 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. [Reg.26.406]

4. 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, the permit incorporates both provisions into the permit, and the Director or the Administrator can enforce both provisions. [40 C.F.R. § 70.6(a)(1)(ii) and Reg.26.701(A)(2)]

5. The permittee must maintain the following records of monitoring information as required by this permit.

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

    [40 C.F.R. § 70.6(a)(3)(ii)(A) and Reg.26.701(C)(2)]

6. The permittee must retain the records of all required monitoring data and support information for at least five (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. [40 C.F.R. § 70.6(a)(3)(ii)(B) and Reg.26.701(C)(2)(b)]

7. The permittee must submit reports of all required monitoring every six (6) months. If the permit establishes no other reporting period, the reporting period shall end on the last day of the month six months after the issuance of the initial Title V permit and every six months thereafter. The report is due on the first day of the second month after the end of the reporting period. The first report due after issuance of the initial Title V permit shall contain six months of data and each report thereafter shall contain 12 months of data. The report shall contain data for all monitoring requirements in effect during the reporting period. If a monitoring requirement is not in effect for the entire reporting period, only those months of data in which the monitoring requirement was in effect are required to be reported. The report must clearly identify all instances of deviations from permit requirements. A responsible official as defined in Reg.26.2 must certify all required reports. The permittee will send the reports to the address below:

    Arkansas Department of Environmental Quality
    Office of Air Quality
    ATTN: Compliance Inspector Supervisor
    5301 Northshore Drive
    North Little Rock, AR 72118-5317

    [40 C.F.R. § 70.6(a)(3)(iii)(A) and Reg.26.701(C)(3)(a)]

8. The permittee shall report to the Department all deviations from permit requirements, including those attributable to upset conditions as defined in the permit.

    a. For all upset conditions (as defined in Reg.19.601), the permittee will make an initial report to the Department by the next business day after the discovery of the occurrence. The initial report may be made by telephone and shall include:

        i. The facility name and location;
        ii. The process unit or emission source deviating from the permit limit;
        iii. The permit limit, including the identification of pollutants, from which deviation occurs;
        iv. The date and time the deviation started;
        v. The duration of the deviation;
        vi. The emissions during the deviation;
        vii. The probable cause of such deviations;
        viii. Any corrective actions or preventive measures taken or being taken to prevent such deviations in the future; and

ix. The name of the person submitting the report.

The permittee shall make a full report in writing to the Department within five (5) business days of discovery of the occurrence. The report must include, in addition to the information required by the initial report, a schedule of actions taken or planned to eliminate future occurrences and/or to minimize the amount the permit's limits were exceeded and to reduce the length of time the limits were exceeded. The permittee may submit a full report in writing (by facsimile, overnight courier, or other means) by the next business day after discovery of the occurrence, and the report will serve as both the initial report and full report.

b. For all deviations, the permittee shall report such events in semi-annual reporting and annual certifications required in this permit. This includes all upset conditions reported in 8a above. The semi-annual report must include all the information as required by the initial and full reports required in 8a.

[Reg.19.601, Reg.19.602, Reg.26.701(C)(3)(b), and 40 C.F.R. § 70.6(a)(3)(iii)(B)]

9. If any provision of the permit or the application thereof to any person or circumstance is held invalid, such invalidity will 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. [40 C.F.R. § 70.6(a)(5), Reg.26.701(E), and Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

10. 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, for permit modification; or for denial of a permit renewal application. [40 C.F.R. § 70.6(a)(6)(i) and Reg.26.701(F)(1)]

11. 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 to maintain compliance with the conditions of this permit. [40 C.F.R. § 70.6(a)(6)(ii) and Reg.26.701(F)(2)]

12. The Department may modify, revoke, reopen and reissue the permit or terminate the permit for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 C.F.R. § 70.6(a)(6)(iii) and Reg.26.701(F)(3)]

13. This permit does not convey any property rights of any sort, or any exclusive privilege. [40 C.F.R. § 70.6(a)(6)(iv) and Reg.26.701(F)(4)]

14. The permittee must 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 must also furnish to the Director copies of records required by the permit. For information the permittee claims confidentiality, the Department may require the permittee to furnish such records directly to the Director along with a claim of confidentiality. [40 C.F.R. § 70.6(a)(6)(v) and Reg.26.701(F)(5)]

15. The permittee must pay all permit fees in accordance with the procedures established in Regulation 9. [40 C.F.R. § 70.6(a)(7) and Reg.26.701(G)]

16. No permit revision shall be required, under any approved economic incentives, marketable permits, emissions trading and other similar programs or processes for changes provided for elsewhere in this permit. [40 C.F.R. § 70.6(a)(8) and Reg.26.701(H)]

17. If the permit allows 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 operational scenario. [40 C.F.R. § 70.6(a)(9)(i) and Reg.26.701(I)(1)]

18. The Administrator and citizens may enforce under the Act all terms and conditions in this permit, including any provisions designed to limit a source's potential to emit, unless the Department specifically designates terms and conditions of the permit as being federally unenforceable under the Act or under any of its applicable requirements. [40 C.F.R. § 70.6(b) and Reg.26.702(A) and (B)]

19. Any document (including reports) required by this permit pursuant to 40 C.F.R. § 70 must contain a certification by a responsible official as defined in Reg.26.2. [40 C.F.R. § 70.6(c)(1) and Reg.26.703(A)]

20. The permittee must allow an authorized representative of the Department, upon presentation of credentials, to perform the following: [40 C.F.R. § 70.6(c)(2) and Reg.26.703(B)]

    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 required 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 assuring compliance with this permit or applicable requirements.

21. The permittee shall submit a compliance certification with the terms and conditions contained in the permit, including emission limitations, standards, or work practices. The permittee must submit the compliance certification annually. If the permit establishes no other reporting period, the reporting period shall end on the last day of the anniversary month of the initial Title V permit. The report is due on the first day of the second month after the end of the reporting period. The permittee must also submit the compliance certification to the Administrator as well as to the Department. All compliance certifications required by this permit must include the following: [40 C.F.R. § 70.6(c)(5) and Reg.26.703(E)(3)]

    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. Nothing in this permit will alter or affect the following: [Reg.26.704(C)]

    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. This permit authorizes only those pollutant emitting activities addressed in this permit. [Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311]

24. The permittee may request in writing and at least 15 days in advance of the deadline, an extension to any testing, compliance or other dates in this permit. No such extensions are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion in the following circumstances:

    a. Such an extension does not violate a federal requirement;
    b. The permittee demonstrates the need for the extension; and
    c. The permittee documents that all reasonable measures have been taken to meet the current deadline and documents reasons it cannot be met.

[Reg.18.314(A), Reg.19.416(A), Reg.26.1013(A), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

25. The permittee may request in writing and at least 30 days in advance, temporary emissions and/or testing that would otherwise exceed an emission rate, throughput requirement, or other limit in this permit. No such activities are authorized until the permittee receives written Department approval. Any such emissions shall be included in the facility's total emissions and reported as such. The Department may grant such a request, at its discretion under the following conditions:

    a. Such a request does not violate a federal requirement;
    b. Such a request is temporary in nature;
    c. Such a request will not result in a condition of air pollution;
    d. The request contains such information necessary for the Department to evaluate the request, including but not limited to, quantification of such emissions and the date/time such emission will occur;
    e. Such a request will result in increased emissions less than five tons of any individual criteria pollutant, one ton of any single HAP and 2.5 tons of total HAPs; and
    f. The permittee maintains records of the dates and results of such temporary emissions/testing.

    [Reg.18.314(B), Reg.19.416(B), Reg.26.1013(B), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

26. The permittee may request in writing and at least 30 days in advance, an alternative to the specified monitoring in this permit. No such alternatives are authorized until the permittee receives written Department approval. The Department may grant such a request, at its discretion under the following conditions:

    a. The request does not violate a federal requirement;
    b. The request provides an equivalent or greater degree of actual monitoring to the current requirements; and
    c. Any such request, if approved, is incorporated in the next permit modification application by the permittee.

    [Reg.18.314(C), Reg.19.416(C), Reg.26.1013(C), Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]

Any credible evidence based on sampling, monitoring, and reporting may be used to determine violations of applicable emission limitations. [Reg.18.1001, Reg.19.701, Ark. Code Ann. § 8-4-203 as referenced by Ark. Code Ann. §§ 8-4-304 and 8-4-311, and 40 C.F.R. § 52 Subpart E]