Louisville Metro Air Pollution Control District
701 West Ormsby Avenue, Suite 303
Louisville, Kentucky 40203-3137

Month dd, 2025

Title V Permit O-0028-24-V
Statement of Basis

Source: Bakelite Synthetics
6200 Camp Ground Road
Louisville, KY 40216

Owner: Bakelite Synthetics
1040 Crown Pointe Parkway, Suite 700
Atlanta, GA 30338

Application Date:	March 16, 2018	Administratively Complete:	April 03, 2019
Draft Permit:	May 17, 2025	Proposed Permit:	May 17, 2025
Permit Engineer:	Cameron Barnett		
Plant ID: 0028	SIC: 2821	NAICS:	325211

Introduction:

This permit will be issued pursuant to: (1) Regulation 2.16, (2) Title 40 of the Code of Federal Regulations Part 70, and (3) Title V of the Clean Air Act Amendments of 1990. Its purpose is to identify and consolidate existing District and Federal air requirements and to provide methods of determining continued compliance with these requirements.

This permit is an operating permit renewal. It updates TAC limits and requirements based on the latest EA demo submitted on 08/31/2018. The following stack test results have been updated: U1: Silver Boiler (C6), U2: PF-1 Fume Scrubber (C3), U3: LRU Boiler (C4) and LRU Catalytic Thermal Oxidizer (C7), U4: Specialty Plant Thermal Oxidizer (SP RTO), U7: Catalytic Oxidizer (C5), and U8: Recuperative Thermal Oxidizer (PF-2 RTO). It incorporates bypass vents in U1, U2, U3, U4, U7, U8, and U9.

Jefferson County is classified as an attainment area for lead (Pb), nitrogen dioxide (NO_2), carbon monoxide (CO), particulate matter less than 10 microns (PM_{10}), particulate matter less than 2.5 microns ($PM_{2.5,}$), and sulfur dioxide (SO_2). Jefferson County is classified as a nonattainment area for ozone (O_3).

Permit Application Type:

☐ Initial issuance

Permit Revision
- ☐ Administrative
- ☐ Minor
- ☐ Significant

☒ Permit renewal

Compliance Summary:

☒ Compliance certification signed
☐ Source is out of compliance
☐ Compliance schedule included
☒ Source is operating in compliance

I Source Information

1. Product Description:

The source produces formaldehyde and phenolic resins.

2. Process and Emission Unit Description:

The source reacts monomers using the silver or metal oxide process to produce formaldehyde. The source produces phenolic resins. The source produces steam for plantwide use with natural gas fired boilers.

The source produces formaldehyde by air oxidation of methanol, utilizing a silver catalyst (EU U1) and a metal oxide catalyst (EU U7). The source produces phenol formaldehyde resin powders (EU U2), liquid phenolic formaldehyde resins (EU U3), and small batch specialty phenol, cresol, and formaldehyde resins (EU U4), phenol formaldehyde resins (EU U8). In EU U6, the source recovers the phenol and methanol from the resin production powders emission unit.

Emission Unit	Equipment Description
U1	**Formaldehyde Production – Silver Process** contains reactors, separators, storage vessels, and a rail loading area.
U2	**Resin Production (PF-1) Powders** contains reactors, condensers, storage tanks, and various solids processing equipment including hoppers, flakers, grinders, blenders, screeners, and baggers.
U3	**Liquid Resin Production** contains reactors, condensers, separators, storage tanks, tote loading, and a methanol recovery system using distillation.
U4	**Specialty Resin Production** contains reactors, condensers, storage tanks, and solids processing equipment including flakers, crushers, conveyors, and hoppers.
U6	**Phenol and Methanol Recovery** contains various separation columns to isolate methanol and phenol to reuse in the process.
U7	**Formaldehyde Production – Metal Oxide Process** contains reactors, a distillation column, and storage tanks.
U8	**Resin Production (PF-2)** contains reactors, condensers, storage tanks, and various solids processing equipment including hoppers, flakers, crushers, and baggers.
U9	**Wastewater Treatment Plant** contains various tanks and reaction vessels in order to treat and purify used plant process water to ensure it is safe to be routed to the river.
U10	**Utilities** contains emergency generators, a fire pump, fuel tanks, boilers, and cooling towers.

Emission Unit	Equipment Description
IA1	**Parts Washer** contains two cold solvent metal parts washers.

3. Site Determination:

There are no other facilities that are contiguous or adjacent to this facility.

4. Fugitive Sources:

Fugitive emissions of VOCs from leaks are regulated by 40 CFR 63 Subpart H National Emissions Standards for Organic Hazardous Air Pollutants for Equipment Leaks.

5. Permit Revisions:

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
74-03-TV	08/10/14	09/25/14	Initial	Initial permit issuance
74-03-TV (R1)	NA	10/02/14	Admin.	Change in monitoring and record keeping requirements frequency of TAC emissions from semi-annually to monthly
O-0028-24-V	05/17/25	Xx/xx/xx	Signif. and Renewal	Updated TAC limits and requirements for all emission units to reflect the latest revised EA demonstration submitted on 08/31/2018. Updated the facility name to Bakelite Synthetics. Incorporated construction permits: 1. 54-02-C(R2): updates Monitoring and Record Keeping requirements for Emission Unit 7 2. C-0028-1003-16-V: Removes Packed Bed Scrubber (C26) for Emission Unit 1. 3. C-0028-0035-19-V: Removes RTO as required control device from Wastewater Treatment Plant 4. C-0028-22-0004-V: Construction of one ABC Powder Bagger (E533) Updated stack test results and control efficiencies for the following control devices to reflect the latest stack test:

Permit No.	Public Notice Date	Issue Date	Change Type	Description/Scope
				1. U1: Silver Boiler (C6) 2. U2: PF-1 Fume Scrubber (C3) 3. U3: LRU Boiler (C4) 4. U4: Specialty Plant Thermal Oxidizer (SP RTO) 5. U7: Catalytic Oxidizer (C5) 6. U8: Recuperative Thermal Oxidizer (PF-2 RTO)

6. Construction Permit History:

Permit No.	Effective Date	Description
54-02-C (R2)	02/25/2015	Updates Monitoring and Record Keeping requirements for the Catalytic Oxidizer (C5) in Emission Unit 7
C-0028-1003-16-V	05/25/2016	Removes Packed Bed Scrubber (C26) from Emission Unit 1: Formaldehyde Production - Silver Process
C-0028-19-0035-V	03/31/2020	Removes RTO as required control device from Wastewater Treatment Plant's V-717R (Digester), V-750 (East Equalization Tank), and V-751 (West Equalization Tank) based on inlet stack testing performed on 8/28/19 that indicated uncontrolled de minimis levels of TAC pollutants.
C-0028-22-0004-V	04/09/2022	Construction of one powder bagger, ABC Powder Bagger (E533)

7. Emission Summary

Pollutant	Actual Emissions 2023 Data (tpy)	Potential Controlled Emissions (tpy)	Pollutant that triggered Major Source Status (based on PTE)
CO	34.32	89.94	No
NO_x	22.70	77.14	No
SO_2	0.17	0.84	No
PM_{10}	21.42	67.82	Yes
$PM_{2.5}$	21.39	67.82	Yes
VOC	10.93	8933.38	Yes

Pollutant	Actual Emissions 2023 Data (tpy)	Potential Controlled Emissions (tpy)	Pollutant that triggered Major Source Status (based on PTE)
Total HAPs	6.62	310.97	Yes
Single HAP > 1 tpy			
Formaldehyde	0.73	3.89	Yes
Methanol	3.43	84.80	Yes
Phenol	1.83	208.32	Yes

8. Applicable Requirements

☒ 40 CFR 60 ☒ SIP ☒ 40 CFR 63

☐ 40 CFR 61 ☒ District Origin ☒ Other

9. Referenced Federal Regulations:

Regulation	Title
40 CFR 60 Subpart A	General Provisions
40 CFR 60 Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
40 CFR 60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels (including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced after July 23, 1984
40 CFR 60 Subpart VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006
40 CFR 60 Subpart III	Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes
40 CFR 60 Subpart RRR	Standards of Performance for Volatile Organic Compound Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines
40 CFR 63 Subpart A	General Provisions
40 CFR 63 Subpart F	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry

Regulation	Title
40 CFR 63 Subpart G	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater
40 CFR 63 Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks
40 CFR 63 Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines
40 CFR 63 Subpart CCCCCC	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities
40 CFR 68 Subparts A through H	Chemical Accident Prevention Provisions

10. Non-Applicable Regulations:

Regulation 7.22, Standard of Performance for New Volatile Organic Materials Loading Facilities, applies to loading into tank trucks, trailers, and railroad tank cars. It does not apply to EU U2, EP E101 and E102, Drumming Shed Tote Filling, or to the loading of material into tanks from railcars in EU U3, EP E242.

40 CFR 60 Subpart NNN does not apply to EU U3. The District confirmed in a July 15, 2003, letter that per §60.660(c)(6), process vents that have flow rates below 0.283 scfm are exempt from the requirements. The company calculated the flow rate to be 0.008 scfm.

II Regulatory Analysis

1. Acid Rain Requirements:

Bakelite Synthetics is not subject to the Acid Rain Program.

2. Stratospheric Ozone Protection Requirements:

Title VI of the CAAA regulates ozone depleting substances and requires a phase-out of their use. This rule applies to any facility that manufactures, sells, distributes, or otherwise uses any of the listed chemicals. Bakelite Synthetics does not manufacture, sell, or distribute any of the listed chemicals. The source's use of listed chemicals is that in fire extinguishers, chillers, air conditioners and other HVAC equipment.

3. Prevention of Accidental Releases 112(r):

Bakelite Synthetics does manufacture, process, use, store, or otherwise handle one or more of the regulated substances listed in 40 CFR Part 68, Subpart F, and District

Regulation 5.15, Chemical Accident Prevention Provisions, in a quantity in excess of the corresponding specified threshold amount.

4. 40 CFR Part 64 Applicability Determination:

Bakelite Synthetics is not subject to 40 CFR Part 64 - *Compliance Assurance Monitoring*.

5. Basis of Regulation Applicability

a. Applicable Regulations

Regulation	Title	Basis
2.03	Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements	Establishes requirements for Permits to Construct and Operate
2.16	Title V Operating Permits	Title V source
5.00	Standards for Toxic Air Contaminants and Hazardous Air Pollutants	Establishes definitions of terms used in the Strategic Toxic Air Reduction Program.
5.01	General Provisions	Establishes general provisions for process equipment from which a toxic air contaminant is or may be emitted.
5.02	Adoption and Incorporation by Reference of National Emission Standards for Hazardous Air Pollutants	Federal Emission Standards for Hazardous Air Pollutants Incorporated by Reference
5.20	Methodology for Determining Benchmark Ambient Concentration of a Toxic Air Contaminant	Establishes the methodology for determining the benchmark ambient concentration of a toxic air contaminant.
5.21	Environmental Acceptability for Toxic Air Contaminants	Establishes the criteria for determining the environmental acceptability of emissions of toxic air contaminants.
5.22	Procedures for Determining the Maximum Ambient Concentration of a Toxic Air Contaminant	Establishes the procedures for determining the maximum ambient concentration of a toxic air contaminant.
5.23	Categories of Toxic Air Contaminants	Establishes categories of toxic air contaminants.
6.13	Standard of Performance for Existing Storage Vessels for Volatile Organic Compounds	Establishes the performance standards for existing VOC storage tanks.

Regulation	Title	Basis
6.18	Standards of Performance for Solvent Metal Cleaning Equipment	Applies to cold cleaners.
6.24	Standard of Performance for Existing Sources Using Organic Materials	Applies to equipment constructed before June 13, 1979 and subject to VOC emission standard.
6.40	Standards of Performance for Gasoline Transfer to Motor Vehicles (Stage II Vapor Recovery)	Applies to the refueling of motor vehicles at a gasoline dispensing facility.
7.01	Standards or Performance for New Affected Facilities	General Provisions (for *New Affected Facilities*)
7.02	Adoption and Incorporation by Reference of Federal New Source Performance Standards	Adoption of Federal New Source Performance Standards
7.06	Standards of Performance for New Indirect Heat Exchangers	Applies to each indirect heat exchanger having input capacity of more than one million BTU per hour commenced after September 1, 1976.
7.08	Standards of Performance for New Process Operations	Equipment installed after September 1, 1976 and subject to the PM emission standard.
7.12	Standard of Performance for New Storage Vessels for Volatile Organic Compounds	Storage tanks with a capacity greater than 250 gallons constructed after April 19, 1972
7.15	Standards of Performance for Gasoline Transfer to New Service Station Storage Tanks (Stage I Vapor Recovery)	Applies to the transfer of VOC from transport tanks into storage tanks constructed after June 13, 1979
7.22	Standard of Performance for New Volatile Organic Materials Loading Facilities	Applies to loading facilities which load more than 200 gallons of “volatile organic materials” into tank trunks, trailer, or railroad tank cars in any one day, commencing after June 13, 1979.
7.25	Standard of Performance for New Sources Using Volatile Organic Compounds	Affected facility constructed after June 13, 1979 for VOC.
40 CFR 60 Subpart A	General Provisions	General Provisions

Regulation	Title	Basis
40 CFR 60 Subpart Dc	Standards of Performance for Small-Industrial-Commercial-Institutional Steam Generating Units	Applies to each steam generating unit that commences construction, modification, or reconstruction after June 19, 1984, and that has a heat input capacity from fuels combusted in the steam generating unit of 29 megawatts (MW) (100 MMBtu/hr) or less, but greater than or equal to 2.9 MW (10 MMBtu/hr).
40 CFR 60 Subpart Kb	Standards of Performance for Volatile Organic Liquid Storage Vessels	Applies to storage vessels of volatile organic liquids which have a design capacity of 19,800 gal or greater, construction commenced after July 23, 1984, and a maximum true vapor pressure 15.0 kPa or greater.
40 CFR 60 Subpart VV	Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI) for which Construction, Reconstruction, or Modification Commenced After January 5, 1981, and on or Before November 7, 2006	Applies to equipment leaks of VOC from SOCMI processes.
40 CFR 60 Subpart III	Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	Applies to the emissions of the vent stream of air oxidation reactor units.
40 CFR 60 Subpart IIII	Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	Applies to stationary CI internal combustion engines that commences construction after July 11, 2005
40 CFR 63 Subpart A	General Provisions	Regulate specific categories of stationary sources that emit (or have the potential to emit) one or more hazardous air pollutants.

Regulation	Title	Basis
Hazardous Organic NESHAP (HON)		
40 CFR 63 Subpart F	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry	Applies to SOCMI sites that manufacture as a primary product organic HAPs.
40 CFR 63 Subpart G	National Emission Standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels, Transfer Operations, and Wastewater	Applies to SOCMI sites with any Group 1 or Group 2 process vents, storage vessels, transfer racks, wastewater streams and in-process equipment.
40 CFR 63 Subpart H	National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks	Applies to pumps, compressors, agitators, pressure relief devices, etc. intended to operate in organic HAP service of 300 hours or more during a calendar year.
40 CFR 63, Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	Applies to existing, new, and reconstructed stationary engines.
40 CFR 63 Subpart CCCCCC	National Emission Standards for Hazardous Air Pollutants for Source Category: Gasoline Dispensing Facilities	Applies to gasoline storage tanks located at an area source of HAP emissions
40 CFR 68	Chemical Accident Prevention Provisions	Applies to stationary sources with more than a threshold quantity of a regulated substance in a process.

b. Plantwide

i. Bakelite Synthetics has potential emissions above the major source thresholds for VOC, total HAPs, single HAPs (Cresol, Formaldehyde, Methanol, Phenol, Styrene, and Triethylamine), CO, and PM_{10}. Regulation 2.16, *Title V Operating Permits,* establishes requirements for major sources.

ii. The source is limited to synthetic minor source emissions levels of all criteria pollutants (CO, NO_X, $PM/PM_{10}/PM_{2.5}$, SO_2, and VOC) per Agreed Board Order 2142. In addition, the Board Order also required that the following HAP emission limits were taken to assure that the source remains a synthetic minor source of HAPs.

(1) Plantwide single HAP emissions are limited to less than 10 tons per 12 consecutive month period, and

(2) Total plantwide HAP emissions are limited to less than 25 tons per 12 consecutive month period.

iii. Per Agreed Board Order 2142, Bakelite Synthetics is required to comply with the applicable requirements for existing sources in 40 CFR 63 Subparts F, G, and H for the two formaldehyde process units, Emission Units U1 and U7.[1]

iv. Regulations 5.00 5.20, 5.21, and 5.23 (STAR Program) establish requirements for environmental acceptability of toxic air contaminants (TACs) and the requirement to comply with all applicable emission standards.

v. Bakelite Synthetics submitted a TAC Environmental Acceptability Demonstration to the District on 07/31/2018 and revised on 08/31/2018. Compliance with the STAR EA Goals was demonstrated in the source's EA Demonstrations. The District determined that potential TAC emissions were either de minimis or compliant with STAR EA goals. The following table demonstrates that the plantwide risk values presented in the source's EA Demonstration comply with the STAR EA goals required in Regulation 5.21.

[1] Due to the synthetic minor limits, the source does not meet the HON applicability requirements. Agreed Board Order 2142, dated August 15, 2001, only requires the source to comply with requirements for existing sources for its two formaldehyde process units. Chemical manufacturing process units that would normally be considered a new source under the HON will still be subject to the requirements for existing sources.

Plantwide EA Analysis

TAC	Emission Point/ Stack ID	Modeled Emission Rate (lb/12-consecutive months)	Risk		HQ	
			Unadjusted ($EAG_C \leq 1.0$)	Industrial ($EAG_C \leq 10.0$)	Unadjusted ($EAG_{NC} \leq 1.0$)	Industrial ($EAG_{NC} \leq 3.0$)
Formaldehyde	U1, E13, Reactor 1-60 (Stack S2)	315.4	0.468 (combined)	1.111 (combined)	0.004 (combined)	0.010 (combined)
	U1, E13, Reactor 1-60 (Stack S3 (bypass))	45[2] 0.138[3]				
	U1, E28-E32, Formaldehyde Rail Loading Arms #7, #10, #12, #14, Formaldehyde Truck Loading Bay (Stack S180)	52.68, each; 263.4, combined[4]	0.205 (each E28-E32)	2.225 (each E28-E32)	0.002 (each E28-E32)	0.019 (each E28-E32)
	U3, E292, LRU CTO (Stack S118)	440, combined[5]	0.171 (E198)	0.261 (E198)	0.001 (E198)	0.002 (E198)
	U3, E192, E195, E198, and E201, Reactor Line J, K, L, and M Reactors (Stack S183 (bypass))	2.660 from E192 and E195, each; 3.619 from E198 and E201, each	0.171 (E195) 0.233 (E198) 0.233 (E201)	0.261 (E195) 0.355 (E198) 0.355 (E201)	0.001 (E195) 0.002 (E198) 0.002 (E201)	0.002 (E195) 0.003 (E198) 0.003 (E201)
	U7, C5, Equipment Controlled by Catalytic Oxidizer (E357-E359 and E362) (Stack S135)	2,621.2	0.414	1.308	0.004	0.011

[2] This was modeled at 1.8 lb/hr for 25 hours/year.
[3] This was modeled at 0.00092 lb/hr for 150 startup/shutdown hours/year.
[4] This was modeled at 0.30 lb/hr for each emission point, for 175 hours/year.
[5] The emissions from Reactor Lines J, K, L, and M (93.2, 93.2, 126.8, and 126.8 lb/12-consecutive months, respectively) add to 440 lb/12-consecutive months combined emissions.

TAC	Emission Point/ Stack ID	Modeled Emission Rate (lb/12-consecutive months)	Risk		HQ	
			Unadjusted ($EAG_C \leq 1.0$)	Industrial ($EAG_C \leq 10.0$)	Unadjusted ($EAG_{NC} \leq 1.0$)	Industrial ($EAG_{NC} \leq 3.0$)
Naphthalene[6]	U3, E219, Centrifuge Feed Tank (Stack S80)	47.1	0.143	0.740	0.001	0.007
	U3, E229, Centrifuge Hold Tank (Stack S84)	31.4	0.097	0.474	0.001	0.005
	U3, E235, Isocyanate Blend Storage Tank, and E244, Part II Tote/Drum Loading Line (Stack S111)	37.6	0.104 (E235) 0.104 (E244)	0.751 (E235) 0.751 (E244)	0.001 (E235) 0.001 (E244)	0.007 (E235) 0.007 (E244)
Total Industrial Plantwide New and Existing R_C (Goal = 75):			--	13.732	--	--
Total Unadjusted Plantwide New and Existing R_C (Goal = 7.5):			2.573	--	--	--
Total Industrial Plantwide New R_C (Goal = 38):			--	0.474	--	
Total Unadjusted Plantwide New R_C (Goal = 3.8):			0.097	--	--	--
Highest Plantwide HQ for single TAC (Formaldehyde):					0.019	0.11

vi. At the time of issuance, the de minimis values are as follows:

Pollutant	De Minimis		Averaging Period	Category
	lb/hr	lb/avg		
Formaldehyde	0.042	36.96	Annual	1
Methanol	10,800	9,6000,000	Annual	4
Phenol	108.00	96,000	Annual	4
Naphthalene	0.016	13.92	Annual	2
Sulfuric acid	0.54	480.00	Annual	2

vii. Regulation 2.16, section 4.1.9.1 and 4.1.9.2 require monitoring and record keeping to assure ongoing compliance with the terms and conditions of the permit. The owner or operator shall maintain all the required records for a minimum of 5 years and make the records readily available to the District upon request.

viii. Regulation 2.16, section 4.3.5, requires stationary sources for which a Title V is issued shall submit an annual compliance certification

[6] The naphthalene emission rates (limits requested by the source) meet the hourly de minimis; however, they do not meet the annual *de minimis*. The source performed the AERMOD model demonstrating that they are in compliance with environmental acceptability goals, Therefore, the modeled emission rates are given as limits for naphthalene.

by April 15 of the following calendar year. In addition, as required by Regulation 2.16, section 4.1.9.3, the source shall submit compliance reports at least every six months to show compliance with the permit. Compliance reports and compliance certifications shall be signed by a responsible official and shall include a certification statement per Regulation 2.16, section 3.5.11.

ix. Regulation 7.25, section 3.1 requires that best available control technology (BACT) be utilized at affected facilities and that permit conditions be set out to assure compliance with this requirement. The District set forth BACT conditions based on facility submittals dated February 16, 2007 and September 26, 2005. Additionally a plantwide limit of 70 tons per year of VOC emissions was established.

x. Company correspondence indicates that the following equipment which have emissions have ceased. The owner or operator must submit a construction permit application in order to resume use of the equipment for the handling of VOC, HAP, TAC or any other materials which may emit criteria pollutants.

EU	ID	Description	Install Date
U1	E15	Deacidifier Rinse Water Tank	1970
U1	E16	Deacidification Tank 1	1970
U1	E17	Deacidification Tank 2	1970
U1	E36	Formaldehyde Storage Tank, 40,000 gal	1996
U2	E71	Flake Bagger	1977
U2	E84	Powder Bagger A (M-524A)	1977
U2	E85	Powder Bagger B (M-254B)	1977
U2	E92	Tank V-107A	--
U2	E93	Tank V-107B	--
U2	E94	Fresh Phenol Storage Tank, 20,300 gal	1977
U2	E97	Decanted Phenol Storage Tank, 10,150 gal	1977
U2	E98	Tank V-305	--
U2	E103	East Railcar Unloading Station	1977
U2	E105	West Railcar Unloading Station	1977
U2	E108	Liquid Resin Storage Tank (V-611-1A), 20,000 gal	1985
U2	E111	Liquid Resin Storage Tank (V-621-1B), 20,000 gal	1985
U2	E113	Liquid Resin Storage Tank (V-631-1C), 20,000 gal	1985
U2	E114	Liquid Resin Storage Tank (V-632-2C), 17,000 gal	1985

EU	ID	Description	Install Date
U2	E115	Liquid Resin Storage Tank (V-633-3C), 9,500 gal	1985
U2	E116	Liquid Resin Storage Tank, 20,000 gal	1985
U2	E117	Liquid Resin Storage Tank, 20,000 gal	1985
U2	E118	Liquid Resin Storage Tank, 20,000 gal	1985
U2	E119	Liquid Resin Storage Tank, 20,000 gal	1985
U2	E145	Reactor Vacuum Compressor Separator, 200 gal	1991
U2	E180	Powder Bagger C (M-524C)	1995
U2	E186	Pallet Dust Cleaner	1995
U2	E471	C-Side Cyclone CY-002	--
U3	E459	Benzene Phosphorus Oxychloride Storage Tank, 200 gal (V-147)	2002
U3	E460	Phosphorus Oxychloride Storage Tank, 200 gal (V-148)	2002
U3	E461	Orthophthaloyl Chloride Storage Tank, 250 gal (V-149)	2002
U4	E293	R 100 Weigh Tank, 40 gal (V 100)	1987
U4	E294	R 100 Reactor, 100 gal (R 100)	1981
U4	E295	R 100 Process Condenser, (E 100)	1981
U4	E296	R 100 Distillate Receiver, 80 gal (V 101)	1990
U4	E308	Phenol Weigh Tank	--
U4	E309	Formaldehyde Weigh Tank	--
U4	E314	B Vacuum Stokes Compressor Separator	--
U4	E318	A Vacuum Stokes Compressor Separator	--
U4	E319	Distillate Loading Station	--
U4	E322	Storage Tank, 20,000 gal	1973
U4	E323	Storage Tank, 20,000 gal	1973
U6	E342	Phenol Recovery Water Tank (V-323), 23,000 gal	1994
U6	E344	Recovered Methanol Tank, 8,000 gal[7]	2015
U6	E349	Recovered Phenol Cooler	1994
U10	E406	Fuel Oil Tank, 11,000 gal (V-816)	1995
U10	E408	Used Oil Tank, 700 gal	1997

[7] EP E344 was a tanker truck that was utilized in 2015 between the time the original recovered methanol tank failed and the new tank E500 (V500) was installed in 2016.

EP E517, 10% caustic storage tanker truck, and E526, phenol distillate storage tank, were included in the permit application, but not included on the permit, as these trucks are mobile tanks, and therefore not subject to District regulations. However, District Regulation 7.22 still applies to loading operations at the facility, and the tanker truck must be loaded in accordance with Regulation 7.22.

c. Emission Unit U1 – Formaldehyde Production – Silver Process

EP	Description	Applicable Regulations
E1	Primary Absorber (C-001)	STAR, 7.25, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G, and H
E2	Secondary Absorber (C-002)	
E3: E6, E10, E11	E3, Distillation Column (C-004), including:	
	E6, Methanol Process Condenser (E-004)	
	E10, Product Accumulator (V-005)	
	E11, Reflux Accumulator (V-006)	
E4	Purification Column (C-003)	
E7	Air Heater Chest (E-010)	
E8	Methanol Feed Tank, 432 gal (V-001)	
E9	Raw Formaldehyde Feed Tank, 1175 gal (V-004)	
E12	Oxalic Acid Tank, 50 gal (V-012) [Insignificant Activity]	NA
E13.1 through E13.60	Reactors (60)	STAR, 7.25, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G, and H
E18	Silver Plant Boiler, 12.6 MMBtu/hr (H-001)	STAR, 6.07
E19	Formaldehyde Storage Tank, 20,616 gal (V-021)	STAR, 6.13, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G, and H (Group 2 storage vessels)
E20	Formaldehyde Storage Tank, 20,616 gal (V-022)	
E21	Formaldehyde Storage Tank, 20,616 gal (V-023)	
E22	Formaldehyde Storage Tank, 20,616 gal (V-024)	
E23	Formaldehyde Storage Tank, 20,616 gal (V-025)	
E24	Formaldehyde Storage Tank, 20,616 gal (V-026)	
E25	Formaldehyde Storage Tank, 20,616 gal (V-027)	
E26	Formaldehyde Storage Tank, 20,616 gal (V-028)	

EP	Description	Applicable Regulations
E27	Methanol Storage Tank, 750,000 gal (V-00A)	STAR, 6.13, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G and H (Group 1 storage vessel)
E28	Formaldehyde Rail Loading Arm #7	STAR, 7.22, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G and H (Group 2 transfer racks)
E29	Formaldehyde Rail Loading Arm #10	
E30	Formaldehyde Rail Loading Arm #12	
E31	Formaldehyde Rail Loading Arm #14	
E32	Formaldehyde Truck Loading Bay	
E34	Formaldehyde Storage Tank, 40,000 gal (V-58)	STAR, 7.12, 40 CFR 60 Subpart Kb, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G and H (Group 1 storage vessels)
E35	Formaldehyde Storage Tank, 40,000 gal (V-59)	

U1 Control Devices

Control ID	Description	Control Efficiency
C6	E18, Silver Plant Boiler, 12.6 MMBtu/hr (H-001), 1970	98% (VOC/HAP)

i. Standards

(1) HAP

(a) The Hazardous Organic NESHAP (HON) regulates the emissions of HAP from the synthetic organic manufacturing industry. Although a synthetic minor source for HAP emissions, the company agreed to comply with the requirements in the HON for existing sources for the two formaldehyde production processes as part of Agreed Board Order 2142.

(b) HON MACT requirements in 40 CFR 63 Subparts F, G, and H require non-LDAR (leak detection and repair) equipment of Formaldehyde Production – Silver Process to reduce emissions of total organic hazardous air pollutants by 98 weight percent or to a concentration of 20 parts per million by volume, whichever is less stringent.

(c) HON MACT requirements in 40 CFR 63 Subparts F, G, and H require Group 1 storage vessels to be equipped with an internal floating roof or to vent emissions to the process to be used as a fuel or as a process chemical.

(d) HON MACT requirements in 40 CFR 63 Subparts F, G, and H for LDAR equipment establishes emission limits, work practice standards, and operating limits for equipment of Formaldehyde Production – Silver Process.

(2) TAC

Per Regulation 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(3) VOC

(a) Regulation 7.22, section 3.1 stipulates submerged fill, bottom loading, or equivalent methods for facilities (E28-E32) loading 200 - 20,000 gallons of volatile organic material.

(b) Regulation 6.13 applies to tank E27 due to the vapor pressure as stored being greater than 1.5 psia and a tank size of 75,000 gallons and requires the storage vessel to have a floating roof, a vapor recovery system, or the equivalent.

(c) The source has chosen to demonstrate compliance with the HON MACT requirements in lieu of the equipment of 40 CFR 60 Subpart VV, and III per 40 CFR 63.110(d)(10) and 40 CFR 63.160(c)(1).

(d) For Storage Tank (E19, E20, E21, E22, E23, E24, E25, E26, E34, and E35), Regulation 6.13 section 3.3 and 7.12 section 3.3 requires submerged fill if the materials have an as stored vapor pressure of 1.5 psia or greater.

d. Emission Unit U2 – Resin Production (PF-1) Powders

EP	Description	Applicable Regulations
E38	V-217 Seal Water Tank, 370 gal (V-217)	STAR, 7.25
E39	Knockout Pot, 300 gal (V-218-4)	
E40	Phenol Weigh Tank, 5,300 gal (V-219)	
E41	D Formaldehyde Weigh Tank, 3,125 gal (V-220)	
Reactor Line A		
E42	HCHO Weigh Tank, 3,125 gal (V-204A)	STAR, 7.25
E45: E43, E44, E47, E46	E45, Reactor, 8,836 gal (R-201A), including:	
	E43, Condenser (E-201A)	
	E44, Distillate Receiver, 6,900 gal (V-208A)	
	E47, Azeotropic Separator, 572 gal (V-221A)	
	E46, Surge Tank, 5,450 gal (V-205A)	
Reactor Line B		
E49	HCHO Weigh Tank, 3,125 gal (V-204B)	STAR, 7.25
E50: E48, E51, E53, E52	E50, Reactor, 8,835 gal (R-201-B), including:	
	E48, Condenser (E-201B)	
	E51, Distillate Receiver, 6,900 gal (V-208-B)	
	E53, Azeotropic Separator, 572 gal (V-221B)	
	E52, Surge Tank, 6,000 gal (V-205B)	
E54-E58	Reactor Vacuum Compressors (K-202-1 to K-202-5)	STAR, 7.25
E59	Reactor Vacuum Compressor Separator, 200 gal (V-207A)	
E60	Reactor Vacuum Compressor Separator, 200 gal (V-207B)	
E61	Vacuum Compressor Knockout Pot, 200 gal (V-207D)	
E63: E64, E65	E63, A Flaker (M-401A), including:	STAR, 7.25, 7.08
	E64, A Flake Breaker (M-402A)	7.08
	E65, A Flaker Hopper (M-403A)	
E67: E68, E69	E67, B Flaker (M-401B), including:	STAR, 7.25, 7.08
	E68, B Flake Breaker (M-402B)	7.08
	E69, B Flaker Hopper (M-403B)	
E72	Flake Tote Scale (M-410)	

EP	Description	Applicable Regulations
E73	Flake Tote Filling Scale (M-415)	7.08
E75	A and B Crusher (M-505)	
E76	A and B Grinder Feed Bin (V-514)	
E77	Resin Grinder A (M-516A)	
E78	Resin Grinder B (M-516B)	
E79	Blender A (M-519A)	
E80	Blender B (M-519B)	
E81	Blender C (M-519C)	
E82	Powder Resin Screener A (M-521A-1)	
E83	Powder Resin Screener B (M-521B-1)	
E86	Talc Mixer	
E87	74A-B Side Super Sacker (M-525)	
E88	Decanted Phenol Storage Tank 25,000 gal (V-101)	STAR, 7.12
E90	93% Sulfuric Acid Tank, 1,940 gal (V-104)	STAR
E95	Weak Distillate Storage Tank, 20,300 gal (V-302A)	STAR, 5.15, 7.12
E96	Weak Distillate Storage Tank, 20,300 gal (V-302-B)	
E99	Recovered Phenol Storage Tank, 25,382 gal (V-312A)	
E101	Drumming Shed #1-Tote Filling	STAR, 5.15
E102	Drumming Shed #2-Tote Filling	
E104	Truck Loading Station	STAR, 5.15, 7.22
E106	Caustic Tank, 10,000 gal (V-102) [Insignificant Activity]	NA
E107	Novolac Cleaning Solution, 20,300 gal (V-103) [Insignificant Activity]	
E109	Butanol Storage Tank, 17,000 gal (V-612)	7.12
E110	Liquid Resin Storage Tank, 17,000 gal (V-613-3A)	STAR, 7.12
E112	Glyoxal Storage Tank, 17,000 gal (V-623-3B) [Insignificant Activity]	NA
E120	Propylene Glycol Storage Tank, 20,000 gal (V-833)	7.12
E121	Resole Cleaning Solution 20,000 gal (V-603) [Insignificant Activity]	NA
E123	Formaldehyde Weigh Tank, 5,300 gal (V-225E/F)	STAR, 7.25
E124	Formaldehyde Weigh Tank, 5,300 gal (V-226E/F)	

EP	Description	Applicable Regulations
Reactor Line C		
E127: E125, E126	E127, Reactor, 6,600 gal (R-201C), including:	STAR, 7.25
	E125, Condenser (E-201C)	
	E126, Distillate Receiver, 6,900 gal (V-208C)	
Reactor Line D		
E130: E128, E129	E130, Reactor, 10,000 gal (R-201D), including:	STAR, 7.25
	E128, Condenser (E-201D)	
	E129, Distillate Receiver, 6,900 gal (V-208D)	
E131	Surge Tank, 10,000 gal (V-205DS)	
Reactor Line E		
E133: E132, E135	E133, Reactor Line E: Reactor, 11,000 gal (R-201E), including:	STAR, 7.25
	E132, Reactor Line E Condenser (E-201E)	
	E135, Reactor Line E Distillate Receiver, 6,900 gal (V-208-E)	
E134	Surge Tank, 13,600 gal (V-205E)	
E136	Lime Slurry Tank (V-228E), 200 gal [Insignificant Activity]	NA
E137	Oxalic Acid Tank (V-229E), 200 gal [Insignificant Activity]	
E140	Reactor Vacuum Compressor (K-202-6)	STAR, 7.25
E141	Reactor Vacuum Compressor (K-202-7)	
E142	Reactor Vacuum Compressor (K-202-8)	
E144	Reactor Vacuum Compressor Separator, 200 gal (V-207E)	
E147	House Vacuum System (F-506C)	7.08
Reactor Line F		
E150: E151, E152	E150, Reactor, 16,000 gal (R-201F), including	STAR, 7.25
	E151, Condenser (E-201F)	
	E152, Distillate Receiver, 6,900 gal (V-208F)	
E153	Surge Tank, 13,600 gal (V-206F)	
E156	Calcium Stearate Tank (V-229F), 200 gal [Insignificant Activity]	NA
E157	Reactor Vacuum Compressor Separator, 33 gal (V-218-7)	STAR, 7.25
E158	Reactor Vacuum Compressor Separator, 33 gal (V-218-8)	

EP	Description	Applicable Regulations
E159	Reactor Vacuum Compressor Separator, 33 gal (V-218-6)	STAR, 7.25
E160	E/F Seal Water Pot, 500 gal (E-204)	
E161	C Flaker (M-401C)	STAR, 7.08, 7.25
E162	C Flake Breaker (M-402C)	7.08
E163	C Flake Hopper (M-403C)	
E165	D Flaker (M-401D)	STAR, 7.08, 7.25
E166	D Flake Breaker (M-402D)	7.08
E167	D Flake Hopper	
E170	o-Cresol Storage Tank, 25,000 gal (V-108)	7.12
E171	Phenol Distillate Decanter, 20,300 gal (V-312B)	STAR, 7.25
E173	C/D Flake Crusher (M-555)	7.08
E174	C Grinder Feed Bin (V-154C)	
E175	Resin Grinder C (M-516C)	
E176	D Blender (M-519D)	
E177	E Blender (M-519E)	
E178	D Screen (M-520D)	
E179	E Screen (M-520E)	
E181	Powder Bagger D (M-524D)	
E182	Powder Bagger E (M-524E)	
E183	C-Side Powder Drum Packer (M-526)	
E184	C Supersacker (M-527)	
E185	Hexa Station	
E462	Recovered Phenol Tank Vent, 25,380 gal (V-314)	STAR, 5.15, 7.12
E463	Phenolic Distillate Storage Tank, 35,535 gal (V-316)	
E464	Phenolic Distillate Storage Tank, 35,535 gal (V-317)	
E468	Carbon Black Surge Bin	STAR, 7.08
E473	ABC-Bagger Surge Bin	
E476	Super Sack Transfer Conveyor	
E477	C Bucket Conveyor	
E478	C Transfer Conveyor	
E480	D Bucket Conveyor	

EP	Description	Applicable Regulations
E483	C/D Flaking Area Bag Filling Station	STAR, 7.08
E486	Resole Distillate Storage Tank, 15,000 gal (V-42-622)	STAR, 7.12
E533	ABC Powder Bagger	7.08

U2 Control Devices

Control ID	Description	Control Efficiency
PF-1 RTO	PF-1 Recuperative Thermal Oxidizer	98% (VOC/HAP)
C3	PF-1 Fume scrubber, caustic scrubber	99.2% (VOC/HAP); 0.084 lb/hr (Phenol)
C12	Baghouse, A/B Flaker Area Dust Collector (F402)	95% (PM)
C13	Baghouse, A Product Collector (506A)	95% (PM)
C14	Baghouse, B Product Collector (506B)	95% (PM)
C15	Baghouse, House Vacuum System Dust Collector (F-506C)	95% (PM)
C16	Baghouse, A/B/C Packer Dust Collector (F-501A)	95% (PM)
C17	Baghouse, Carbon Black Dust Collector (F-501B)	95% (PM)
C18	Baghouse, C Crushed Resin Dust Collector (F-514C)	95% (PM)
C19	Baghouse, A-B Side Packaging Area Dust Collector (F-501E)	95% (PM)
C20	Baghouse, A/B Crushed Resin Dust Collector (F-514)	95% (PM)
C21	Baghouse, C/D Flaker Area Dust Collector (F-515)	95% (PM)
C23	Baghouse, C Packaging Area Dust collector (F-501F)	95% (PM)
C24	Baghouse, C Product Collector (F-501C)	95% (PM)

Equipment with No Emissions

EP	Description
E138	Large Utility Tank, 3125 gal (V-209)
E139	Small Utility Tank, 220 gal (V-211)
E155	Lime Slurry Tank, 400 gal (V-228F)
E172	Fatty Acid Storage Tank, 12,000 gal (V-399)

EP	Description
E469	Hexamine Supersack Conditioner
E472	45% KOH Storage Tank, (V-105)

i. Standards

(1) HAP

Per Agreed Board Order 2142, plantwide total and single HAP emissions must not exceed major source thresholds.

(2) Opacity

Regulation 7.08, section 3.1.1 establishes opacity standards.

(3) PM/PM_{10}

Regulation 7.08, Table 1 stipulates lb/hr PM emission standards for Emission Points E77, E78, E174, E175, and E183 according to the equation $E = 3.59(P)^{0.62}$, where P is process weight rate in tons/hr and E is the rate of emission in lb/hr for process weight rates up to 60,000 lb/hr.

(4) TAC

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(5) VOC

(a) Regulation 7.22, section 3.1 stipulates submerged fill, bottom loading, or equivalent methods for facilities (E104) loading 200 - 20,000 gallons of volatile organic material.

(b) For Storage Tank (E88, E95, E96, E99, E109, E110, E120, E170, E462, E463, E464, and E486), Regulation 7.12, section 3.3 requires submerged fill if the materials have an as stored vapor pressure of 1.5 psia or greater.

e. Emission Unit U3 – Liquid Resin Production

EP	Description	Applicable Regulations
E192: E193, E194	E192, Reactor Line J Reactor, 7,000 gal (R-225J), including:	STAR, 7.25
	E193, Reactor Line J Condenser (E-225J)	
	E194, Reactor Line J Distillate Receiver, 450 gal (V-226J)	

EP	Description	Applicable Regulations
E195: E196, E197	E195, Reactor Line K Reactor, 16,000 gal (R-225K), including:	STAR, 7.25
	E196, Reactor Line K Condenser (E-225K)	
	E197, Reactor Line K Distillate Receiver, 450 gal (V-226K)	
E198: E199, E200	E198, Reactor Line L Reactor, 16,000 gal (R-225L), including:	
	E199, Reactor Line L Condenser (E-225L)	
	E200, Reactor Line L Distillate Receiver, 450 gal (V-226L)	
E201: E202, E203	E201, Reactor Line M Reactor, 20,000 gal (R-225M), including:	
	E202, Reactor Line M Condenser (E-225M)	
	E203, Reactor Line M Distillate Receiver, 450 gal (V-226M)	
E204	Vacuum Pump (K-225-1)	
E205	Vacuum Pump (K-225-2)	
E206	Vacuum Pump (K-225-3)	
E207	Vacuum Pump (K-225-4)	
E208	Vacuum Pump (K-225-5)	
E209	Vacuum Pump Separator, 33 gal (V-225-1)	
E210	Vacuum Pump Separator, 33 gal (V-225-2)	
E211	Vacuum Pump Separator, 33 gal (V-225-3)	
E212	Vacuum Pump Separator, 33 gal (V-225-4)	
E213	Vacuum Pump Separator, 33 gal (V-225-5)	
E214	Vacuum Pump Seal for K-225-1	
E215	Vacuum Pump Seal for K-225-2	
E216	Vacuum Pump Seal for K-225-3	
E217	Vacuum Pump Seal for K-225-4	
E218	Vacuum Pump Seal for K-225-5	
E219	Centrifuge Feed Tank, 15,000 gal (V-232)	
E220	Centrifuge #1, 3,000 gal (M-243)	
E221	Deaeration Tank 1, 150 gal (V-231)	
E222	Centrifuge #2, 3,000 gal (M-242)	
E223	Deaeration Tank 2, 150 gal (V-230)	
E224	Centrifuge #3, 3,000 gal (M-241)	
E225	Deaeration Tank 3, 150 gal (V-229)	

EP	Description	Applicable Regulations
E227	Zinc Sludge Drum Filling (M-133)	NA
E228	Resole Distillate Hold Tank, 25,000 gal (V-236)	STAR, 7.25
E229	Centrifuge Hold Tank, 20,000 gal (V-237)	
E230	Rinse Water Storage Tank, 25,000 gal (V-238)	STAR, 7.12
E231	Seal Water Process Tank, 1,500 gal (V-239)	STAR, 7.25
E232	Phenolic Urethane Tank, 18,000 gal (V-233)	STAR, 7.12
E233	Phenolic Urethane Tank, 18,000 gal (V-234)	
E235	Isocyanate Blend Storage Tank, 10,000 gal (V-241)	
E236	Urethane Part III Mix Tank, 1,000 gal (V-242)	STAR, 7.25
E237	Urethane Part III Mix/Packaging system	
E238	Part 1 Silane Addition System	
E240	LRU Tote Blend System	
E241	Hydrofluoric Acid Addition System	STAR
E242	BPAC Truck Loading	NA
E243	Resole Tote/Drum Loading Line	STAR, 7.25
E244	Part II Tote/Drum Loading Line	
E245	Part I Tote/Drum Loading Line	
E246	LRU Boiler, natural gas fired, 62.4 MMBtu/hr (K-802C)	STAR, 7.06, 40 CFR 60 Subpart Dc
E251	Phenol Storage Tank, 90,000 gal (V-125)	STAR, 7.12
E252	Phenol Storage Tank, 90,000 gal (V-126)	
E253	DBE Storage Tank, 30,000 gal (V-127)	
E254	DOA Storage Tank, 9,800 gal (V-128)	
E255	Methyl Ester Storage Tank, 9,800 gal (V-129)	
E256	Furfuryl Alcohol Storage Tank, 30,000 gal (V-130)	
E257	SS150ND Storage Tank, 30,000 gal (V-131)	
E258	SS205 Storage Tank, 30,000 gal (V-132)	
E259	25% Zinc Acetate Solution Storage Tank, 12,000 gal (V-133) [Insignificant Activity]	NA
E260	Isocyanate Storage Tank, 30,000 gal (V-134)	STAR, 7.12
E261	Kerosene Storage Tank, 9,800 gal (V-135)	
E262	Isocyanate Storage Tank, 30,000 gal (V-137)	
E514	50% Caustic Storage Tank, 9,800 gal (V-138) [Insignificant Activity]	NA

EP	Description	Applicable Regulations
E263	Vycel-U Storage Tank, 9,800 gal (V-139)	7.12
E264	Phenolic Urethane Storage Tank, 25,800 gal (V-625)	STAR, 7.12
E265	Phenolic Urethane Storage Tank, 25,800 gal (V-626)	
E266	Phenolic Urethane Storage Tank, 25,800 gal (V-627)	
E267	Phenolic Urethane Storage Tank, 25,800 gal (V-628)	
E268	Phenolic Urethane Storage Tank, 25,800 gal (V-629)	
E269	Phenolic Urethane Storage Tank, 25,800 gal (V-630)	
E270	Phenolic Urethane Resole Storage Tank, 18,000 gal (V-631)	
E271	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-632)	
E272	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-633)	
E273	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-634)	
E274	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-635)	
E275	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-636)	
E276	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-637)	
E277	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-638)	
E278	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-639)	
E279	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-640)	
E280	Isocyanate Blend Liquid Storage Tank, 10,000 gal (V-641)	
E281	Isocyanate Blend Liquid Storage Tank, 10,000 gal (V-642)	
E282	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-643)	
E283	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-644)	
E284	Phenolic Urethane/Resole Storage Tank, 18,000 gal (V-645)	
E285	Glycol/Water Storage Tank, 25,800 gal (V-825)	

EP	Description	Applicable Regulations
E288	Southwest Truck Loading Station	STAR, 7.22
E289	Southeast Truck Loading Station	
E290	North Product Loading Truck Station	
E291	South Tank farm Truck Loading Station	
E336	Methanol Column, 900 gal (C-278)	STAR, 7.25
E337	Methanol Column Condenser (E-275)	
E338	Recovered Methanol Storage Vessel, 25,000 gal (V-275)	STAR, 7.12
E339	Urethane Distillate Methanol Rich Process Vessel, 25,000 gal (V-276)	STAR, 7.25
E340	Methanol Reflux Accumulator, 100 gal (V-277)	
E441	Caustic Boilout Storage Tank, 25,800 gal (V-227) [Insignificant Activity]	NA
E443	Zinc Acetate/Caustic Boilout Storage Tank, 24,027 gal (V-228) [Insignificant Activity]	
E444	SS606 Storage Tank, 30,000 gal (V-140)	STAR, 7.12
E445	SS100 Storage Tank, 10,000 gal (V-141)	
E446	Isocyanate Liquid Storage Tank, 25,000 gal (V-142)	
E447	Isocyanate Liquid Storage Tank, 25,000 gal (V-143)	
E448	Cashew Nutshell Oil Storage Tank, 9,800 gal (V-144) [Insignificant Activity]	NA
E451	Liquid Resin Storage Tank, 15,000 gal (V-646)	STAR, 7.12
E452	Liquid Resin Storage Tank, 15,000 gal (V-647)	
E458	North Railcar Loading/Unloading Station	STAR, 7.25
E484	BPAC Storage Tank, 40,000 gal (V-136)	STAR, 7.12

U3 Control Devices

Control ID	Description	Control Efficiency
C4	E246, LRU Boiler, natural gas fired, 62.4 MMBtu/hr, installed 1996	98.0% (VOC/HAP) 99.8% (Formaldehyde)

i. Standards

(1) HAP

Per Agreed Board Order 2142, plantwide total and single HAP emissions must not exceed major source thresholds.

(2) Opacity

LRU boiler emissions are limited in accordance with Regulation 7.06.

(3) PM/PM_{10}

LRU boiler emissions are limited in accordance with Regulation 7.06 section 4.1 which stipulates that for a facility which commenced operation on or after for combined heat input values between 10 and 250 million Btu per hour that the standard be given by the equation $E = 1.919(\text{total heat input capacity in MMBtu})^{-0.535}$.

(4) SO_2

(a) LRU boiler emissions are limited in accordance with Regulation 7.06 section 5.1 which stipulates a standard of 1.0 pound per million Btu actual heat input for combustion of liquid and gaseous fuels for sources with less than 145 million Btu per hour or less combined.

(b) 40 CFR 60 Subpart Dc requires that records be kept of the type and quantity of fuels burned.

(5) TAC

Per Regulation 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(6) VOC

(a) For Storage Tank (E230-E233, E235 E251-E258, E260-E285, E338, E444-E448 E451, and E452), Regulation 7.12, section 3.3 requires submerged fill if the materials have an as stored vapor pressure of 1.5 psia or greater.

(b) For Storage Tank (E484) Regulation 7.12, section 3.1 requires the owner or operator to equip the vessels with a floating roof, vapor recovery system, or their equivalent. The tank is ducted to the LRU Boiler (C4).

f. Emission Unit U4 – Specialty Resin Production

EP	Description	Applicable Regulations
E298: E297, E299 E300	E298, R-150 Reactor, 150 gal (R-150), including:	STAR, 7.25
	E297, R-150 Weigh Tank, 60 gal (V-150)	
	E299, R-150 Process Condenser (E-150)	
	E300, R-150 Distillate Receiver, 120 gal (V-151)	
E301	Recycle Formaldehyde Tote, 250 gal	
E303: E302, E304, E305	E303, R-800 Reactor, 800 gal (R-800), including:	
	E302, R-800 Weigh Tank, 300 gal (V-800)	
	E304, R-800 Process Condenser (E-800)	
	E305, R-800 Distillate Receiver, 600 gal (V-801)	
E306	800 Drop Pan (M-501)	
E307	Phenol Storage Tank, 1,600 gal (V-110)	STAR, 7.12
E311	Vacuum Compressor (K-015)	STAR, 7.25
E312	Vacuum Compressor (K-011)	
E315	Compressors Seal Water Pot, 250 gal (V-805)	
E316	Vacuum Compressor (K-012)	
E317	Vacuum Compressor (K-016)	
E320	Specialty Plant Product Loading	STAR, 7.22
E321	Cresol Distillate Tank, 20,000 gal (V-203)	STAR, 7.12
E324	1500 Flaker Belt (M-401)	STAR, 7.25
E325	800 Resin Crusher (M-500)	7.08
E329: E327, E328, E330, E331	E329, R-1500 Reactor, 1,500 gal (R-1500), including:	STAR, 7.25
	E327, R-1500 50% Formaldehyde Weigh Tank, 1,160 gal (V-1502)	
	E328, R-1500 37/11 Formaldehyde Weigh Tank, 1,160 gal (V-1501)	
	E330, R-1500 Condenser (E-1500)	
	E331, R-1500 Distillate Receiver 1,160 gal (V-1503)	
E332	R-1500 Distillate Phase Separator, 35 gal (V-1504)	
E334	Warehouse 1 Blend Tank, 3000 gal (V-300)	
E335	Fume Hood in Warehouse 1	
E474	1500 Drop Pan (M-406)	
E492	1500 Flake Crusher (M-404)	7.08

EP	Description	Applicable Regulations
E493	1500 Flake Hopper (M-405)	7.08
E494	1500 Bucket Conveyor (M-408)	
E495	1500 Drop Pan Crusher (M-409)	

U4 Control Devices

Control ID	Description	Control Efficiency
C8	Specialty Plant Resin Crusher Dust Collector (F-500)	95% (PM)
CDC401	Specialty Plant Resin Crusher Dust Collector (DC-401)	95% (PM)
SP RTO	Specialty Plant Thermal Oxidizer rated 4 MMBtu/hr	92.95% (VOC/HAP)

i. Standards

(1) HAP

Per Agreed Board Order 2142, plantwide total and single HAP emissions must not exceed major source thresholds.

(2) Opacity

Regulation 7.08, section 3.1.1 establishes opacity standards.

(3) PM/PM_{10}

Regulation 7.08, Table 1 stipulates lb/hr PM emission standards for Emission Point (E325) according to the equation $E = 3.59(P)^{0.62}$, where P is process weight rate in tons/hr and E is the rate of emission in lb/hr for process weight rates up to 60,000 lb/hr.

(4) TAC

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(5) VOC

(a) Regulation 7.22, section 3.1 stipulates submerged fill, bottom loading, or equivalent methods for facilities (E320) loading 200 - 20,000 gallons of volatile organic material.

(b) For Storage Tanks (E307, E310, and E321), Regulation 7.12, section 3.3 requires submerged fill if the materials have an as stored vapor pressure of 1.5 psia or greater.

g. Emission Unit U6 – Phenol and Methanol Recovery

EP	Description	Applicable Regulations
E91	Butyl Acetate Storage Tank, 4,300 gal (V-106)	STAR, 7.12
E346: E345	E346, Phenol Distillation (C-302) with Condenser (E-302) and Reboiler (E-303), including:	STAR, 7.25
	E345, Phenol Recover Extraction Column (C-301)	
E347: E343	E347, Methanol Stripper Column (C-320) with Reboiler (E-320), including:	
	E343, Process Condenser (E-321)	
E348: E341	E348, Methanol Purification Column (C-323) with Reboiler (E-323)	
	E341, Methanol Purification Column Condenser (E-324)	
E350	Butyl Acetate Decanter (V-106)	
E351	Methanol Stripper Decanter Tank (V-321)	
E352	Methanol Stripper Reflux Drum (V-322)	
E353	Methanol Purification Reflux Drum Tank (V-324)	
E500	Recovered Methanol Waste Tank and Loading Operations, 8,000 gal (V-325)	STAR, 7.12

Equipment with No Emissions

EP	Description
E501	Methanol Stripper Column Heat Exchanger (E-326)
E502	Methanol Stripper Column Heat Exchanger (E-237)

i. Standards

(1) HAP

Per Agreed Board Order 2142, plantwide total and single HAP emissions must not exceed major source thresholds.

(2) TAC

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(3) VOC

For Storage Tanks (E91 & E500), Regulation 7.12, section 3.3 requires submerged fill if the materials have an as stored vapor pressure of 1.5 psia or greater.

h. Emission Unit U7 – Formaldehyde Production – Metal Oxide Process

EP	Description	Applicable Regulations
E249	50% Formaldehyde Storage Tank, 108,000 gal (V-050)	STAR, 7.12, 40 CFR 60 Subparts Kb, VV, III, and RRR, 40 CFR 63 Subparts F, G, and H (Group 2 storage vessels)
E250	50% Formaldehyde Storage Tank, 108,000 gal (V-051)	
E310	37/11 Formaldehyde Storage Tank, 10,000 gal (V-500)	STAR, 7.12, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G, and H (Group 2 storage vessel)
E354	Methanol Storage Tank, 1,400,000 gal (V-00B)	STAR, 7.12, 40 CFR 60 Subparts Kb, VV, III, and RRR, 40 CFR 63 Subparts F, G, and H (Group 1 storage vessel)
E355	Tank Vent Knockout Pot, 60 gal (V-065)	STAR, 5.15, 7.25, 40 CFR 60 Subpart VV, 40 CFR 63 Subparts F, G, and H
E357	Reactor #1 (R-1)	STAR, 5.15, 7.25, 40 CFR 60 Subparts VV, III, and RRR, 40 CFR 63 Subparts F, G, and H
E358	Reactor #2 (R-2)	
E359	Distillation Column (C-1)	
E361	Dowtherm Storage Tank, 7,517 gal (DT-1)	7.12
E362	Methanol Vaporizer (HX-1)	STAR, 7.25, 40 CFR 60 Subparts VV, III, and RRR, 40 CFR 63 Subparts F, G, and H
E37	Urea Formaldehyde Concentrate (UFC) Storage Tank, 25,000 gal (V-61)	STAR, 7.12, 40 CFR 60 Subparts VV and III, 40 CFR 63 Subparts F, G and H (Group 2 storage vessel)

EP	Description	Applicable Regulations
E364	Urea Formaldehyde Concentrate (UFC) Storage Tank, 70,500 gal (V-52)	STAR, 5.15, 7.12, 40 CFR 60 Subparts Kb, VV, III, and RRR, 40 CFR 63 Subparts F, G, and H (Group 2 storage vessels)
E365	Urea Formaldehyde Concentrate (UFC) Storage Tank, 70,500 gal (V-53)	
E366	Urea Formaldehyde Concentrate (UFC) Storage Tank 25,000 gal (V-54)	
E367	Urea Water Storage Tank, 40,000 gal (V-56)	7.12
E368	Urea Water Storage Tank, 40,000 gal (V-57)	
E520	25% Caustic Storage Tank (V-064) [Insignificant Activity]	NA

U7 Control Devices

Control ID	Description	Control Efficiency
C5	Catalytic Oxidizer (MO CatOx), make Anguil, includes E363, Catalytic Incinerator	98.2% (VOC/HAP) 98.3% (Formaldehyde)

Equipment with No Emissions

EP	Description
E356	Air Inlet System, (S-1/2)
E360	Waste Heat Recovery Boiler (DS-1/SG-1)

i. Standards

(1) HAP

(a) 40 CFR 63 Subparts F, G, and H (HON) regulate the emissions of HAP from the synthetic organic manufacturing industry. Although a synthetic minor source for HAP emissions the company agreed to comply with the requirements in the HON for existing sources the two Formaldehyde production processes as part of Agreed Board Order 2142.

(b) HON MACT requirements 40 CFR 63 Subparts A, F, G, and H require non-LDAR equipment of Formaldehyde Production Metal Oxide Process to reduce emissions of total organic hazardous air pollutants by 98 weight percent or to a concentration of 20 parts per million by volume, whichever is less stringent.

(c) HON MACT requirements in 40 CFR 63 Subparts F, G, and H require Group 1 storage vessels to be equipped with an internal floating roof or to vent

emissions to the process to be used as a fuel or as a process chemical.

(d) HON MACT requirements 40 CFR 63 Subparts A, F, G, and H for LDAR equipment establishes emission limits, work practice standards, and operating limits for equipment of Formaldehyde Production-Metal Oxide Process.

(2) TAC

Per Regulation 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(3) VOC

(a) For Storage Tank (E37, E249, E250, E310, E361, E367, and E368), Regulation 7.12, section 3.3 requires submerged fill if the materials have an as stored vapor pressure of 1.5 psia or greater.

(b) For Storage Tank (E354, E364, E365, and E366), Regulation 7.12, section 3.1 requires the owner or operator to equip the vessel with a floating roof, vapor recovery system, or equivalent.

(c) The source has chosen to demonstrate compliance with the HON MACT requirement in lieu of requirement of 40 CFR 60 Subpart VV, III and Kb per 40 CFR 63.110(b)(1), 40 CFR 63.110(d)(10), and 40 CFR 63.160(c)(1).

i. Emission Unit U8 – Resin Production (PF-2)

EP	Description	Applicable Regulations
E369	Reactor Line G/H Weigh Tank, 5,300 gal (V-226G/H)	STAR, 7.25
E370: E371, E372, E373	E370, Reactor Line G Reactor, 16,000 gal (R-201G)	
	E371, Reactor Line G Condenser (E-201G)	
	E372, Reactor Line G Surge Tank, 13,600 gal (V-205G)	
	E373, Reactor Line G Distillate Receiver Tank, 6,900 gal (V-208G)	
E375: E376, E377, E378	E375, Reactor Line H Reactor, 16,000 gal (R-201H)	
	E376, Reactor Line H Condenser (E-201H)	
	E377, Reactor Line H Surge Tank, 13,600 gal (V-205H)	
	E378, Reactor Line H Distillate Receiver Tank, 6,900 gal (V-208H)	
E379	Shared Vacuum Compressor (K-202-10)	

EP	Description	Applicable Regulations
E380	H Vacuum Compressor (K-202-11)	STAR, 7.25
E381	G Vacuum Compressor (K-202-9)	
E382	Shared Vacuum Compressor Separator, 33 gal (K-218-10)	
E383	H Vacuum Compressor Separator, 33 gal (K-218-11)	
E384	G Vacuum Compressor Separator, 33 gal (K-218-9)	
E385	Seal Water Pot, 500 gal (V-233G/H)	
E386	Weak Distillate Process Tank, 10,000 gal (V-108G/H)	
E387	Decanted Phenol Process Tank, 25,000 gal (V-308G/H)	
E388	Lime Slurry Weigh Tank, 650 gal (V-228G/H)	7.08
E389	Sulfamic Acid Weigh Tank, 575 gal (V-215G/H)	STAR, 7.25, 7.08
E392: E393, E394, E395	E392, G Flaker Belt (M-401G)	
	E393, G Flake Hopper (V-403G)	7.08
	E394, G Flake Crusher (M-405G)	
	E395, G Supersacker (V-402G) and 50 lb. Bagger (V-407G)	
E396: E397, E398, E399	E396, H Flaker Belt (M-401H), including:	STAR, 7.25, 7.08
	E397, H Flake Hopper (V-403H)	7.08
	E398, H Flake Crusher (M-405H)	
	E399, H Supersacker (V-401H) and 50 lb. Bagger (V-407H)	

U8 Control Devices

Control ID	Description	Control Efficiency
C9	Baghouse, PF-2 bases dust collector (DC-228 G/H)	95% (PM)
C10	Baghouse, PF-2 acid dust collector (DC-229 G/H)	95% (PM)
C11	Baghouse, PF-2 flaker/packing dust collector (DC-401 G/H)	95% (PM)
PF-2 RTO	Recuperative Thermal Oxidizer	99.26% (VOC/HAP)

Equipment with No Emissions

EP	Description
E465	Steam Ejector #1 (VJ250 G/H – A)
E466	Steam Ejector #2 (VJ250 G/H – B)
E467	Steam Ejector Condenser (E251G/H)

EP	Description
E503	Scrubber System
E530	PF-2 Oxidizer Knockout Pot (V-860)
E531	PR-2 Stackbed Knockout Pot (V-400)

i. Standards

(1) HAP

Per Agreed Board Order 2142, plantwide total and single HAP emissions must not exceed major source thresholds.

(2) Opacity

Regulation 7.08, section 3.1.1 establishes opacity standards.

(3) PM/PM_{10}

Regulation 7.08, Table 1 stipulates lb/hr PM emission standards for Emission Points (E388, E389, and E392-E399) according to the equation $E = 3.59(P)^{0.62}$, where P is process weight rate in tons/hr and E is the rate of emissions in lb/hr for process weight rates up to 60,000 lb/hr.

(4) TAC

Per Regulation 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(5) VOC

The District set forth BACT conditions based on facility submittals dated February 16, 2007 and September 26, 2005. Additionally a plantwide limit of 70 tons per year of VOC emissions was established.

j. Emission Unit U9 – Wastewater Treatment Plant

EP	Description	Applicable Regulations
T-101A	West EQ Tank (96V-751)	STAR, 7.25
T-101B	East EQ Tank (96V-750)	
E434	Digester, 100,000 gal (V-717)	
E422	Stream #2: Weir/Waterfall (Sump 3)	
E423	Waste #6: Storage Tank (Sump 8A)	
E426	N Aeration Basin	
E427	S Aeration Basin	
E428	West Clarifier (V-701A)	

EP	Description	Applicable Regulations
E429	East Clarifier (V-701B)	STAR, 7.25
E436	East Spill Containment Tank (V-715B)	
E441a	Open Trench (filter press)	
E441b	Stream #8: Open Trench (storm water)	
T-102A	Clarifier Primary North (V-770A)	
T-102B	Clarifier Primary South (V770B)	
E480	EQ Tank Sump (Main Sump)	
E487	Run Down Tank	
E488	Stream #1: Caustic Wash Neutralization Tank	
E489	Stream #3: Weir/Waterfall (sump 14)	
E490	Stream #4: Weir/Waterfall (sump 25)	
E401	Sulfuric acid (H_2SO_4) Tank	STAR

i. Standards

(1) HAP

Per Agreed Board Order 2142, plantwide total and single HAP emissions must not exceed major source thresholds.

(2) TAC

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(3) VOC

The District set forth BACT conditions based on facility submittals dated February 16, 2007 and September 26, 2005. Additionally a plantwide limit of 70 tons per year of VOC emissions was established.

k. Emission Unit U10 – Utilities

EP	Description	Applicable Regulations
E402	Diesel Fire Pump, 240 hp	40 CFR 63 Subpart ZZZZ
E403	Backup Diesel Generator #1, 540 hp	
E404	Backup Diesel Generator #2, 280 hp	
E407	Gasoline Tank and Gasoline Refueling, 236 gal [Insignificant Activity]	40 CFR 63 Subpart CCCCCC
E409	Utility Boiler 1, natural gas fired, Make Johnston, model 609, 31.5 MMBtu/hr	7.06

EP	Description	Applicable Regulations
E410	Utility Boiler 2, natural gas fired, Make Johnston, model 609, 31.5 MMBtu/hr	7.06
E419	East Cooling Tower 1	7.08
E420	East Cooling Tower 2	
E421	West Cooling Tower	

i. Standards

(1) HAP

(a) 40 CFR 63 Subpart ZZZZ stipulates conditions for the operation of emergency engines.

(b) 40 CFR Subpart CCCCCC stipulates conditions for the storage and transfer of gasoline.

(2) Opacity

(a) Opacity from Utility Boilers 1 & 2 (E409 & E410) are limited in accordance with Regulation 7.06.

(b) Cooling tower (E419-E421) emissions are limited in accordance with Regulation 7.08.

(3) PM/PM_{10}

(a) Emissions from Utility Boilers 1 & 2 (E409 & E410) are limited in accordance with Regulation 7.06 section 4.1 which stipulates that for a facility which commenced operation on or after for combined heat input values between 10 and 250 million Btu per hour that the standard be given by the equation $E = 1.919 (\text{total heat input capacity in MMBtu})^{-0.535}$.

(b) Emissions from the cooling towers (E419-E421) is limited in accordance with Regulation 7.08, Table 1 which stipulates lb/hr PM emission standards based on the equation $E = 17.31(P)^{0.16}$, where P is process weight rate in tons/hr and E is the rate of emission in lb/hr for process weight rates greater than 60,000 lb/hr.

(4) SO_2

Utility Boilers 1 & 2 (E409 & E410) emissions are limited in accordance with Regulation 7.06 section 5.1 which stipulates a standard of 1.0 pound per million Btu actual heat input for combustion of liquid and gaseous fuels for sources with less than 145 million Btu per hour or less combined.

(5) TAC

Per Regulations 5.00 and 5.21, TAC emissions must not exceed environmentally acceptable levels.

(6) VOC

40 CFR Subpart CCCCCC, as a surrogate for VOC and District Regulation 6.40, stipulates conditions for the storage and transfer of gasoline.

III Other Requirements

1. Temporary Sources:

The source did not request to operate any temporary facilities.

2. Short Term Activities:

The source did not report any short term activities.

3. Emissions Trading:

The source is not subject to emission trading.

4. Alternative Operating Scenarios:

The source did not request any alternative operating scenarios.

5. Compliance History Since Last Permit:

ABO Date	Regulation Violated	Settlement
2/20/2013	1.07, Excess Emissions During Startups, Shutdowns, and Upset Conditions 2.17, Federally Enforceable District Origin Operating Permits (FEDOOPS)	Agreed Board Order 13-01
11/19/2014	2.03, Authorization to Construct or Operate; Demolition/Renovation Notices and Permit Requirements	Agreed Board Order 14-07
04/18/2018	1.05, Compliance with Emissions Standards and Maintenance Requirements 1.07, Excess Emissions during Startups, Shutdowns and Upset Conditions 2.16, Title V Operating Permits	Agreed Board Order 18-01
10/16/2019	1.05, Compliance with Emissions Standards and Maintenance Requirements 2.16, Title V Operating Permits 5.15, Chemical Accident Prevention Provisions	Agreed Board Order 19-02

6. Calculation Methodology or Other Approved Method:

The Company uses a variety of methods to estimate air emissions. Most of the emission estimates are based on established calculation methodologies for common processes and emissions-generating activities, which are based on EPA's AP-42. The calculation methods include:

a. Loading and Unloading losses

Loading and Unloading losses are determined by methods based on EPA's AP-42; Chapter 5.2 version dated January 1995.

b. Working and Breathing losses from tanks

Breathing losses for all major raw material storage tanks are estimated by using Tanks 4.0 which is based on Chapter 7, "Liquid Storage Tanks" from the AP-42 version dated January 1995.

c. Fugitive losses

Fugitive losses due to equipment leaks are monitored plant-wide which is then used to calculate emissions using the SOCMI equation set. Fugitive emissions are incorporated in unit totals.

d. Stack testing

Stack tests were performed to determine some control device efficiencies and emission rates.

e. EPA emission factors

EPA AP-42 emission factors are used for combustion emissions except where site-specific stack test data is available.

f. Vendor control efficiency information

Vendor control efficiencies are applied to estimate most of the particulate emissions.

g. Engineering judgment

Engineering judgment is applied to determine some emissions.

7. Insignificant Activities

Equipment	Qty	PTE (ton/yr)	Regulation Basis
Internal Combustion (IC) Engines: Diesel fire pump and 2 generators included in Emission Unit 10 . 1 Portable Air Compressors - 5 hp 2 Generators/Welders - 1 16-HP; 1 20-HP 1 Pressure Washer (WWTP) - 8 HP 1 Trash Pump (WWTP) - 15 HP	8	4.19 tpy NOx largest pollutant PTE	Regulation 1.02 Appendix A
R&D Boiler (<10MMBTU), natural gas, 0.875 MMBTU	6	1.08 tpy NOx largest pollutant PTE	Regulation 1.02 Appendix A
R&D HVAC, natural gas, 1.25 MMBTU			
Guard House HVAC, natural gas, 0.06 MMBTU			
Admin Office (Bldg 1) Unit 1, natural gas, 0.09 MMBTU			
Admin Office (Bldg 1) Unit 2, natural gas, 0.13 MMBTU			
Engineering/Safety Offices (Bldg 2), natural gas, 0.22 MMBTU			
E5 - Waste Heat Recovery Boiler, 1970	1	N/A	Regulation 1.02
E106 - Caustic Tank, 10,000 gal (V-102)	1	N/A	Regulation 1.02
E107 - Novolac cleaning solution, 20,300 gal (LK-45V-103)	1	N/A	Regulation 1.02
E121 - Resole Cleaning Solution 20,000 gal (LK-45V-603)	1	N/A	Regulation 1.02
E259 - 25% Zinc Acetate Solution Storage Tank, 12000 gal, 1996	1	N/A	Regulation 1.02
E407 - Gasoline Tank and Gasoline Refueling, 236 gal	1	0.167 tpy VOC, 0.131 tpy HAPs	Regulation 1.02
E441 - Caustic Boilout Tank, 25,800 gal (V-227)	1	N/A	Regulation 1.02
E443 - Zinc Acetate/Caustic Boilout Tank, 24,027 gal (V-228)	1	N/A	Regulation 1.02
E448 - Cashew Nutshell Oil Storage Tank, 9,800 gal (V-144)	1	N/A	Regulation 1.02
E514 - 50% Caustic Storage Tank, 9,800 gal (V-138)	1	N/A	Regulation 1.02
E520 - 25% Caustic Storage Tank, 250 gal (V-064)	1	N/A	Regulation 1.02
Cold Solvent Parts Cleaner - Secondary Reservoir: Safety Kleen Parts Washer - Maintenance 44" x 24" x 8" Freeboard (reservoir underneath, no free liquid in upper unit); spray nozzle and spray brush	1	0.0008 tpy VOC	Regulation 1.02

Equipment	Qty	PTE (ton/yr)	Regulation Basis
Cold Solvent Part Cleaner – Secondary Reservoir: Clean-O-Matic Solvent Parts Washer – PF2 for Flame Arrestors Model 900-A, 19" x 46" with 50.5" freeboard (reservoir underneath, no free liquid in upper unit); spray nozzle	1	0.0008 tpy VOC	Regulation 1.02
Emergency vents or systems: EU 1 E510 (S180-atm) and E511 (S3-atm) EU 2 E512 (S181-atm) and E513 (S182-atm) EU 3 E516 (S183-atm) EU 4 E518 (S188-atm) and E519 (S185-atm) EU 7 E520 (S187-atm) and E510 (S180-atm) EU 8 E522 (S186-atm) EU 9 E532 (S187-atm), E524 (S188-atm), and E525 (S190-atm)	12	Less than 5 tpy VOC and 1000 lb/yr HAP emissions	Regulation 1.02
Storage tanks <250 gal: Lime Slurry Tank (E136), two Oxalic Acid Tanks (E12 and E137), Calcium Stearate Tank (E156), and MO Caustic Tank (E106)	5	N/A	Regulation 1.02

1. Insignificant activities identified in District Regulation 1.02, Appendix A, may be subject to size or production rate disclosure requirements pursuant to Regulation 2.16, section 3.5.4.1.4.
2. Insignificant activities identified in District Regulation 1.02, Appendix A shall comply with generally applicable requirements as required by Regulation 2.16, section 4.1.9.4.
3. The Insignificant Activities Table is correct as of the date the permit was proposed for review by U.S. EPA, Region 4.
4. Emissions from Insignificant Activities shall be reported in conjunction with the reporting of annual emissions of the facility as required by the District.
5. The owner or operator shall submit an updated list of insignificant activities that occurred during the preceding year pursuant to Regulation 2.16, section 4.3.5.3.6.
6. The owner or operator may elect to monitor actual throughputs for each of the insignificant activities and calculate actual annual emissions, or use Potential to Emit (PTE) to be reported on the annual emission inventory.
7. The District has determined pursuant to Regulation 2.16, section 4.1.9.4 that no monitoring, record keeping, or reporting requirements apply to the insignificant activities listed, except for the equipment that has an applicable regulation and permitted under an insignificant activity (IA) Basis of Regulation Applicability for IA units

a. Emission Unit IA1 – Parts Washer

EP	Description	Applicable Regulations	Control ID
PW	Two (2) cold solvent metal parts washers with secondary reservoirs	6.18	NA

i. Standards

(1) VOC

Regulation 6.18, section 4 establishes operating requirements to minimize emissions and limits the cleaning solvent vapor pressure to 1.0 mm Hg measured at 20 °C.