

Fact Sheet



For Final Renewal Permitting Action Under 45CSR30 and Title V of the Clean Air Act

Permit Number: **R30-07300003-2024 (Part 3 of 3)**
Application Received: **February 19, 2024**
Plant Identification Number: **03-054-073-00003**
Permittee: **Cytec Industries, Inc.**
Facility Name: **Willow Island Plant**
Manufacturing Unit: **Site Services**
Mailing Address: **#1 Heilman Avenue, Willow Island, WV 26134-9801**

Physical Location: Willow Island, Pleasants County, West Virginia
UTM Coordinates: 474.00 km Easting • 4,356.00 km Northing • Zone 17
Directions: From Interstate 77, Exit 179, take State Route 2 north for approximately 10 miles. Plant site is on the left (river side) of State Route 2, two miles south of Belmont, WV.

Facility Description

Cytec Industries, Inc. is a global, research-based specialty chemical company. The company operates a multi-product, multi-process chemical plant at Willow Island, WV. Plant operations are divided into the following two manufacturing units and one support services unit: Surfactants (Part 1 of 3), Polymer Additives (Part 2 of 3), and Site Services (Part 3 of 3).

The Site Services Area (Part 3 of 3) supports the manufacturing processes at the Cytec facility. Site Services is comprised of the Powerhouse (including two natural gas/distillate oil fired boilers), the on-site biological wastewater treatment system, the Equalization/Neutralization (E/N) wastewater unit operation, a distillate fuel oil storage tank, and emergency diesel engines.

Emissions Summary

Plantwide Emissions Summary [Tons per Year]		
Regulated Pollutants	Potential Emissions	2023 Actual Emissions
Carbon Monoxide (CO)	72.83	34.76
Nitrogen Oxides (NO _x)	81.97	27.99
Particulate Matter (PM _{2.5})	17.74	0.50
Particulate Matter (PM ₁₀)	21.00	0.50
Total Particulate Matter (TSP)	22.75	0.83
Sulfur Dioxide (SO ₂)	42.04	3.13
Volatile Organic Compounds (VOC)	210.43	59.98

PM₁₀ is a component of TSP.

Hazardous Air Pollutants	Potential Emissions	2023 Actual Emissions
Acetonitrile	0.33	0.17
Acrylamide	0.02	<0.01
Acrylic Acid	0.20	None Reported
Benzene	0.25	0.05
Chloroform	0.38	0.07
Dimethyl Formamide	0.83	0.76
Ethylbenzene	0.04	0.02
Formaldehyde	0.48	0.10
Hexane	1.94	0.56
Hydrochloric Acid	<0.01	<0.01
Maleic Anhydride	0.18	0.07
Methanol	13.34	4.54
Methyl Isobutyl Ketone	44.43	11.95
Methylene Chloride	0.25	0.04
Toluene	82.31	21.81
Toluene - 2,4-Diisocyanate	<0.01	<0.01
Triethylamine	6.71	1.80
Xylenes (isomers and mixtures)	0.56	0.11
Total HAPs	152.24	42.05

Some of the above HAPs may be counted as PM or VOCs.

Title V Program Applicability Basis

This facility has the potential to emit 210.43 tpy of VOC; 13.34 tpy of Methanol; 44.43 tpy of Methyl Isobutyl Ketone; 82.31 tpy of Toluene; and 152.24 tpy of aggregate HAPs. Due to this facility's potential to emit over 100 tons per year of criteria pollutant, over 10 tons per year of a single HAP, and over 25 tons per year of aggregate HAPs, CYTEC Industries Inc. Willow Island Plant – Site Services is required to have an operating permit pursuant to Title V of the Federal Clean Air Act as amended and 45CSR30.

Legal and Factual Basis for Permit Conditions

The State and Federally-enforceable conditions of the Title V Operating Permits are based upon the requirements of the State of West Virginia Operating Permit Rule 45CSR30 for the purposes of Title V of the Federal Clean Air Act and the underlying applicable requirements in other state and federal rules.

This facility has been found to be subject to the following applicable rules:

Federal and State:	45CSR2	PM & Opacity limits for indirect heat exchangers
	45CSR6	Open burning prohibited.
	45CSR10	Sulfur dioxide limits
	45CSR11	Standby plans for emergency episodes.
	45CSR13	Permits for construction/modification
	45CSR16	Emission standards for New Stationary Sources pursuant to 40 C.F.R. Part 60
	WV Code § 22-5-4 (a) (14)	The Secretary can request any pertinent information such as annual emission inventory reporting.
	45CSR30	Operating permit requirement.
	45CSR34	Emission standards for HAPs
	40 C.F.R. 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units
	40 C.F.R. 60 Subpart IIII	NSPS for Compression Ignition Engines
	40 C.F.R. Part 61	Asbestos inspection and removal
	40 C.F.R. 63 Subpart ZZZZ	National Emission Standards for Hazardous Air Pollutants: RICE MACT
	40 C.F.R. 63 Subpart DDDDD	National Emission Standards for Hazardous Air Pollutants: Major Source Boiler MACT
	40 C.F.R. 63 Subpart GGGGG	National Emission Standards for Hazardous Air Pollutants: Site Remediation
	40 C.F.R. Part 82, Subpart F	Ozone depleting substances
State Only:	45CSR4	No objectionable odors.
	45CSR27	Best Available Technology (BAT) for Toxic Air Pollutants (TAPs)

Each State and Federally-enforceable condition of the Title V Operating Permit references the specific relevant requirements of 45CSR30 or the applicable requirement upon which it is based. Any condition of the Title V permit that is enforceable by the State but is not Federally-enforceable is identified in the Title V permit as such.

The Secretary's authority to require standards under 40 C.F.R. Part 60 (NSPS), 40 C.F.R. Part 61 (NESHAPs), and 40 C.F.R. Part 63 (NESHAPs MACT) is provided in West Virginia Code §§ 22-5-1 *et seq.*, 45CSR16, 45CSR34 and 45CSR30.

Active Permits/Consent Orders

Permit or Consent Order Number	Date of Issuance	Permit Determinations or Amendments That Affect the Permit (<i>if any</i>)
R13-0936B	June 11, 2009	
R13-2560F	February 12, 2016	

Conditions from this facility's Rule 13 permit(s) governing construction-related specifications and timing requirements will not be included in the Title V Operating Permit but will remain independently enforceable under the applicable Rule 13 permit(s). All other conditions from this facility's Rule 13 permit(s) governing the source's operation and compliance have been incorporated into this Title V permit in accordance with the "General Requirement Comparison Table," which may be downloaded from DAQ's website.

Determinations and Justifications

This is the fourth renewal of this Title V Permit. There have been no changes to the equipment at the Willow Island Plant's Site Services (Part 3 of 3) manufacturing unit since the last Title V renewal.

3.0 Facility-Wide Requirements

- Updated the boilerplate language to the most recent version.

4.0 Wastewater Treatment Plant

- The benzene groundwater pumping activity in the Wastewater Treatment Plant has been determined to be subject to only the recordkeeping requirements in 40 C.F.R. §63.7881(c) of 40 C.F.R. 63, Subpart GGGGG and there has been no change to the applicable requirements since the last renewal.

5.0 Equalization/Neutralization Unit (Em. Unit IDs: 226X, 226Y)

- This section only has requirements from R13-0936B. There have been no changes to R13-0936B since the last Title V renewal so no changes were made to this section.

6.0 Boilers (Em. Unit IDs: 830X, 831X)

- This section has applicable requirements from R13-2560F, 45CSR2, 45CSR10, 45CSR16, 45CSR34, 40 C.F.R. 60 Subpart Dc, and 40 C.F.R. 63 Subpart DDDDD. There have been no changes to R13-2560F, 45CSR2, 45CSR10, 45CSR16, 45CSR34, and 40 C.F.R. 60 Subpart Dc since the last renewal. 40 C.F.R. 63 Subpart DDDDD was last updated on October 6, 2022 but none of the applicable requirements were affected.

7.0 Emergency Diesel Engines (Em. Unit IDs: E02E, E03E, E04E, 65BL)

- This section contains applicable requirements from 40 C.F.R. 60 Subpart IIII and 40 C.F.R. 63 Subpart ZZZZ.
 - Conditions 7.1.3, 7.1.4, and 7.1.6 were updated due to changes in 40 C.F.R. 60 Subpart IIII that have occurred since the last Title V renewal.
 - Condition 7.5.4 was added to include the reporting requirements of 40 C.F.R. §60.4214(d) applicable to engines E02E, E03E, and E04E.

- Conditions 7.1.15 and 7.4.3 were updated due to changes in 40 C.F.R. 63 Subpart ZZZZ.

Non-Applicability Determinations

The following requirements have been determined not to be applicable to the subject facility due to the following:

- a. 40 C.F.R. 60, Subpart K – “Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978.” There are no petroleum liquid storage tanks in the Site Services area constructed within the applicable dates with a design capacity greater than 40,000 gallons.
- b. 40 C.F.R. 60, Subpart Ka – “Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 19, 1978, and Prior to July 23, 1984.” There are no petroleum liquid storage tanks in the Site Services area constructed within the applicable dates with a design capacity greater than 40,000 gallons.
- c. 40 C.F.R. 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.” There are no volatile organic liquid storage tanks in the Site Services area constructed after July 23, 1984 with a design capacity equal to or greater than 75 cubic meters (m³).
- d. 40 C.F.R. 60, Subpart VV - “Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry.” The Site Services area does not produce as intermediates or final products any of the materials listed in 40 C.F.R. §60.489.
- e. 40 C.F.R. 60, Subpart DDD – “Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry.” The Site Services area does not manufacture polypropylene, polyethylene, polystyrene, or poly(ethylene terephthalate) for which this rule applies.
- f. 40 C.F.R. 60, Subpart III – “Standards of Performance for Volatile Organic Compound (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes.” The Site Services area does not produce any of the chemicals listed in 40 C.F.R. §60.617 as a product, co-product, by-product, or intermediate.
- g. 40 C.F.R. 60, Subpart NNN – “Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations.” The Site Services area does not produce any of the chemicals listed in 40 C.F.R. §60.667 as a product, co-product, by-product, or intermediate.
- h. 40 C.F.R. 60, Subpart RRR - “Standards of Performance for Volatile Organic Compound (VOC) Emissions from Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes.” The Site Services area does not produce any of the chemicals listed in 40 C.F.R. §60.707 as a product, co-product, by-product, or intermediate.
- i. 40 C.F.R. 61, Subpart V – “National Emission Standards for Equipment Leaks (Fugitive Emissions Sources).” Applies to sources in VHAP service as defined in 40 C.F.R. §61.241. VHAP service involves chemicals that are not used in a manner that qualifies them under the rule in the Site Services Area.

- j. 40 C.F.R. 63, Subparts F, G, and H – “National Emission standards for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (HON).” 40 C.F.R. 63, Subparts F, G, and H do not apply to manufacturing process units that do not meet the criteria in 40 C.F.R. §§63.100(b)(1), (b)(2), and (b)(3). The equipment subject to this permit is not an “affected facility,” because such equipment does not manufacture as a primary product any chemical listed in Table 1 of 40 C.F.R. 63, Subpart F.
- k. 40 C.F.R. 63, Subpart DD – “National Emission Standards for Hazardous Air Pollutants From Off-Site Waste and Recovery Operations.” The Site Services area does not receive off-site materials as specified in paragraph 40 C.F.R. §63.680(b) and the operations are not one of the waste management operations or recovery operations as specified in 40 C.F.R. §§63.680(a)(2)(i) through (a)(2)(vi).
- l. 40 C.F.R. 63, Subpart JJ – “National Emission Standards for Wood Furniture Manufacturing Operations.” The Site Services area does not include any “wood furniture manufacturing operations”, as defined in 40 C.F.R. §63.801.
- m. 40 C.F.R. 63, Subpart JJJ – “National Emission Standards for Hazardous Air Pollutant Emissions: Group IV Polymers and Resins.” The Site Services area does not produce the materials listed in 40 C.F.R. §63.1310.
- n. 40 C.F.R. 63, Subpart PPPP – “National Emission standards for Hazardous Air Pollutants: Surface Coating of Plastic Parts and Products.” The Site Services area does not produce an intermediate or final product that meets the definition of “surface coated” plastic part.
- o. 40 C.F.R. 63, Subpart WWWW – “National Emission Standards for Hazardous Air Pollutants: Reinforced Plastic Composites Production.” The Site Services area does not engage in reinforced plastics composites production as defined in 40 C.F.R. §63.5785 and does not manufacture composite material as defined in 40 C.F.R. §63.5935.
- p. 40 C.F.R. Part 64 – “Compliance Assurance Monitoring.” Per 40 C.F.R. §§64.2(a)(2) and (3), emission point 226E is not subject to the CAM Rule because pre-control device potential emissions are less than 10 tons per year of a single HAP, and the scrubbers (226C, 226D) are not used for control of VOC, THAP, or formaldehyde.
- q. 45CSR17 – “To Prevent and Control Particulate Matter Air Pollution from Materials Handling, Preparation, Storage and Other Sources of Fugitive Particulate Matter.” Per 45CSR§17-6.1, Cytec is not subject to 45CSR17 because the Willow Island Plant is subject to the fugitive particulate matter emission requirements of 45CSR7.
- r. 45CSR27 – “To Prevent and Control the Emissions of Toxic Air Pollutants.” Since the potential emissions to the atmosphere from all sources (point, fugitive, and secondary) at CYTEC’s Willow Island Plant are less than 1,000 lb/yr of formaldehyde, less than 1,000 lb/yr of benzene, and less than 500 lb/yr of acrylonitrile, emission units at the plant are no longer subject to the BAT requirements under 45CSR27, per section 45CSR§27-3.1. Also, per 45CSR§27-3.1, emission units at the plant that emit formaldehyde and benzene would no longer be subject to the BAT requirements of 45CSR27 because the formaldehyde emitting sources are now subject to the requirements of 40 C.F.R. 63, Subpart FFFF and the benzene emitting sources are now subject to the requirements of 40 C.F.R. 63, Subpart GGGG. Site-wide potential to emit for acrylonitrile is zero because the single process which formerly utilized acrylonitrile was shut down and all equipment was dismantled in 2008.

- s. 40 C.F.R. Part 97, Subparts AAAAA, CCCCC, EEEEE, and 45CSR43. The boilers 830X and 831X are used for process and comfort heating and do not serve a generator. Since the applicability criteria in §§97.404(a)(1), 97.604(a)(1), and 97.804(a)(1) are not met, these regulations are not applicable. Consequently, 45CSR43 which adopts and incorporates by reference these federal regulations, is not applicable.

Request for Variances or Alternatives

None.

Insignificant Activities

Insignificant emission unit(s) and activities are identified in the Title V application.

Comment Period

Beginning Date: May 15, 2024
Ending Date: June 14, 2024

Point of Contact

All written comments should be addressed to the following individual and office:

Robert Mullins
West Virginia Department of Environmental Protection
Division of Air Quality
601 57th Street SE
Charleston, WV 25304
304/926-0499 ext. 41286
Robert.A.Mullins@wv.gov

Procedure for Requesting Public Hearing

During the public comment period, any interested person may submit written comments on the draft permit and may request a public hearing, if no public hearing has already been scheduled. A request for public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing. The Secretary shall grant such a request for a hearing if he/she concludes that a public hearing is appropriate. Any public hearing shall be held in the general area in which the facility is located.

Response to Comments (Statement of Basis)

Not applicable.