



Illinois Environmental Protection Agency

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JB Pritzker, Governor

James Jennings, Acting Director

ID # 031 300 AAJ

KOPPERS CARBON MATERIALS, LLC

Docuware Code: A01

Compliance Monitoring Report (CMR)

GENERAL INFORMATION

Report Date:	January 22, 2026	Inspection Date:	August 20, 2025
Inspector:	Tom Kolokythas	Last Inspection Date:	August 14, 2024

SOURCE INFORMATION

IEPA ID:	031300AAJ	SIC:	2865 (Cyclic Organic Crudes and Intermediates and Organic Dyes and Pigments)	NAICS:	326112
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PHYSICAL LOCATION & CORRESPONDENCE INFORMATION

Company Name:	Koppers Carbon Materials LLC
Street Address:	3900 South Laramie Avenue
City, County:	Cicero, Cook
State, Zip Code:	Illinois, 60804
Contact/Title:	Seth Herring / Plant Manager
Contact Phone/Fax/Cell:	(708) 556-9984
Contact Email:	HerringLS@koppers.com

PRE-INSPECTION INFORMATION

Compliance Monitoring Status:	☐ Major (3 year)	☒ Mega (3 year)	☐ Minor (5 year)
	☐ Alternative CMS Source	☐ Major (5 year)	
Inspection Type:	☐ Full Compliance Evaluation (FCE)	☒ Partial Compliance Evaluation (PCE)	
Scope of PCE:	Source-Wide Evaluations, Naphthalene Storage Tanks (Section 7.6 of CAAPP permit, App. No. 96030134), Construction Permit, App. No. 14100012 "Naphthalene Distribution Plant Project".		

PERMITS INFORMATION			
RELEVANT OPERATING AND CONSTRUCTION PERMITS FOR INSPECTION			
Type	Permit #	Description	Date Last Issued
Title-V - CAAPP	96030134	Chemical Oil, Coal Tar Distillates, Creosotes, Coal Tar Pitches & Phthalic Anhydride Production	July 20, 2004 (Revised *)
* This minor modification corrects the name of the company, emission limits in Condition 5.5.3 of the CAAPP permit to provide an accurate estimation of NO _x for the RTOs, and update control equipment for Tanks 301, 302 and 303.			
Construction Permit ** - Revised - NSPS/NESHAP Source	14100012	Naphthalene Distillation Plant Project	October 31, 2024
** This permit has been revised at the request of the facility to provide for: 1) Construction of a new truck Loading Rack (LR-2), 2) Reactivation of an existing Rail Loading Rack (RCL-6), and 3) Authorization for naphthalene loadout at existing Railcar Loading Racks (RCL-1 through RCL-6). The emissions from the naphthalene loadout operations would be controlled by the existing Tar Plant Thermal Oxidizer (TO 1-4) and TO-5. This revised permit does not provide for increases in the permitted production of naphthalene, loadout of additional quantity of naphthalene, or emissions of the Naphthalene Distillation Plant.			

RELEVANT COMPLIANCE AND ENFORCEMENT HISTORY

VIOLATION NOTICE (VN)	Date	Violations
A-2024-00184	No VN sent	<u>40 CFR 63.983(a):</u> Koppers Inc., failed to operate and maintain the closed vent systems for the carbon pitch and coal tar distillation processes. <u>Condition 1.1.3-1(b)(i)(A) of Construction Permit, App. No. 02020104:</u> Koppers Inc. failed to operate the thermal oxidizer controlling the creosote blending tanks in compliance with the requirements of 40 CFR 63 .1362. <u>Condition 2.1.4(a)(iii) of Construction Permit, App. No. 14100012:</u> Koppers Inc. failed to maintain the combustion chamber temperature of the naphthalene distillation plant oxidizer above the minimum operating temperature. <u>Condition 2.1.4(a)(ii) of Construction Permit, App. No. 14100012:</u> Koppers Inc. failed to operate the naphthalene distillation plant oxidizer to achieve a minimum 98% destruction efficiency for organic material. <u>Condition 7.4.3.(f)(i) of CAAPP permit, App. No. 96030134:</u> Koppers Inc. failed to comply with the emission capture and control techniques which achieve overall reduction of at least 81 % of VOM emissions from the coal tar distillation process. <u>Condition 2(d) of Construction permit, App. No. 00040051:</u> Koppers, Inc failed to operate the thermal oxidizer for the pitch tanks to achieve at least 98% destruction efficiency for volatile organic material (VOM). <u>Condition 2.1.2-1(b) of Construction permit, App. No. 14100012:</u> Koppers, Inc. caused or allowed the emission of more than 8 lb/hr our organic material into the atmosphere from the naphthalene distillation plant process vents. <u>Condition 2.1.5.(a) of Construction permit, App. No. 14100012:</u> Koppers Inc. exceeded emission limits delineated in condition 2.1.5(a) of Construction Permit, App. No. 14100012. <u>Condition 2.1.2-1(a) of Construction permit, App. No. 14100012:</u> Koppers Inc. failed to reduce the total organic hazardous air pollutants (HAPs) by 98 weight-percent. <u>Condition 2.3.2.(a)(ii) of CAAPP permit, App. No. 14100012:</u> Koppers Inc. failed to reduce total organic HAPs by 98 weight-percent or to a concentration of 20 ppmv from the truck transfer rack. <u>Condition 2.1.2-2(b) of CAAPP permit, App. No. 14100012:</u> Koppers Inc. failed to control VOM emissions from the naphthalene distillation emission units to achieve an overall reduction in VOM of at least 81 %. <u>Condition 3 of Construction Permit, App. No. 08040005:</u>

		Koppers Inc. failed to meet each applicable emission limit of 40 CFR 63, Subpart FFFF for its pitch storage tanks. <u>Condition 5(a) of Construction Permit, App. No. 15080025:</u> Koppers Inc. caused or allowed the emission of VOM from the tube heater for the tar distillation system in excess of 3.07 lb/hr. <u>Condition 5(b) of Construction Permit, App. No. 11100041:</u> Koppers Inc. caused or allowed the emission of VOM from the new tube heater for the tar distillation system in excess of 3.0 lb/hr. <u>Condition 7.4.3.(e)(i) of CAAPP permit, App. No. 96030134:</u> Koppers Inc. caused or allowed the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from the coal tar distillation process. <u>Condition 7.7.9.(f) of CAAPP permit, App. No. 96030134:</u> Koppers Inc. failed to maintain a record of total sulfur content of the naphthalene feed based on daily sampling on November 30, 2023. <u>Condition 1.15.(b) of Construction Permit, App. No. 02020104:</u> Koppers Inc. failed to follow good operating practices for the creosote blending tanks and associated thermal oxidizer, including periodic inspection, routine maintenance, and prompt repair of defects.
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STATUS / COMPLIANCE COMMITMENT AGREEMENT (CCA) SUMMARY

Referral letter to the AGO on October 3, 2024.

VIOLATION NOTICE (VN)	Date	Violations
A-2023-00162	October 4, 2023	<u>40 CFR 63.983(a):</u> Koppers Inc., failed to operate and maintain the closed vent systems for carbon itch and coal tar distillation processes on multiple occasions from July 2022 through June 2023. <u>Condition 1.1.3 - 1(b)(i)(A) of Construction Permit, App. No. 02020104:</u> Koppers Inc., failed to operate the thermal oxidizer controlling the creosote blending tanks in compliance with the requirements in 40 CFR 63.1362(b)(2)(ii) through (iv) on July 15 and September 24, 2022, and multiple occasions from January through June 2023. <u>Condition 1.1.10 of Construction Permit, App. No. 02020104:</u> Koppers Inc., failed to timely notify deviations from Construction Permit, App. No. 02020104 associated with an events on July 15, and September 24, and February 2, 2023. <u>Condition 1.1.3 - 1(a) of Construction Permit, App. No. 02020104:</u> Koppers Inc., caused or allowed the discharge of more than 8 lb/hr of organic material into the atmosphere from creosote blending tanks during creosote blending while the associated thermal oxidizer was not operating on July 15 and September 24, 2022, and multiple occasions from January through June 2023. <u>Condition 1.1.5(b) of Construction Permit, App. No. 02020104:</u>

Koppers Inc., failed to follow good operating practices for the creosote blending tanks and associated thermal oxidizer, including periodic inspection, routine maintenance and prompt repair of defects.

Condition 1.1.8(b) of Construction Permit, App. No. 02020104:

Koppers Inc., may have failed to perform monitoring for the closed vent system in accordance with 40 CFR 63.1366(b)(1)(xiii)(A) or (B) to ensure the vent stream was not diverted through the bypass line.

Condition 1.1.12 of Construction Permit, App. No. 14100012:

Koppers Inc., failed to timely notify the Illinois EPA of deviations of Construction Permit, App. No. 14100012 from events occurring January 3 and March 23, 2023.

Condition 2.1.2 – 1(a) of Construction Permit, App. No. 1410012:

Koppers Inc., failed to reduce the total organic hazardous air pollutants (HAPs) by 98 weight-percent or to a concentration of 20 parts per million by volume from process vents at the naphthalene distillation plant on January 3 and March 23, 2023.

Condition 2.1.2 – 1(b) of Construction Permit, App. No. 1410012:

Koppers Inc., failed to reduce total organic compounds (less methane and ethane) by 98 weight-percent or a concentration of less than 20 ppmv (less methane and ethane) from the naphthalene distillation operation on January 3 and March 23, 2023.

Condition 2.1.2 – 2(a) of Construction Permit, App. No. 1410012:

Koppers Inc., caused or allowed the emission of more than 8 lb/hr of organic material into the atmosphere from the naphthalene distillation plant process vents on January 3 and March 23, 2023.

Condition 2.1.2 – 2(b) of Construction Permit, App. No. 1410012:

Koppers Inc., failed to control VOM emissions from the naphthalene distillation emission units to achieve an overall reduction in VOM of at least 81 percent on January 3 and March 23, 2023.

Condition 2.1.4(a)(ii) of Construction Permit, App. No. 1410012:

Koppers Inc., failed to operate the naphthalene distillation plant oxidizer to achieve a minimum 98 percent destruction efficiency for organic material on January 3 and March 23, 2023.

Condition 2.1.4(a)(iii) of Construction Permit, App. No. 1410012:

Koppers, Inc., failed to maintain the combustion chamber temperature of the naphthalene distillation plant oxidizer above minimum operating temperature while the affected process vent was in operation January 3 and March 23, 2023.

Condition 2.1.5(a) of Construction Permit, App. No. 1410012:

Koppers, Inc., may have exceeded emissions limits delineated in Condition 2.1.5(a) of Construction Permit, App. No. 14100012 on January 3 and March 23, 2023.

Condition 2.3.2.(a)(i)(C) of Construction Permit, App. No. 1410012:

Koppers, Inc., may have failed to operate naphthalene distillation plant oxidizer all times organic HAPs emissions from the truck transfer rack were venting to it on January 3 and March 23, 2023.

Condition 2.3.2.(a)(ii) of Construction Permit, App. No. 1410012:

Koppers, Inc., may have failed to reduce total organic HAPs by 98 weight-percent or to a concentration of 20 ppmv from the transfer rack on January 3 and March 23, 2023.

Condition 3 of Construction Permit, App. No. 08040005:

Koppers, Inc., failed to meet each emission limit in Table 4 of 40 CFR 63 Subpart FFFF—National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing for its pitch storage tanks on during multiple occasions from July 2022 through August 2023.

Condition 4(b) of Construction Permit, App. No. 08040005:

Koppers, Inc., failed to operate the thermal oxidizer for the pitch tanks to achieve at least 98% destruction efficiency for volatile organic material (VOM) from July 2022 through August 2023.

Condition 7.2.3(b) of Construction Permit, App. No. 96030134:

Koppers, Inc., caused or allowed the emission of more than 8 lb/hr of organic material into the atmosphere from its pitch tanks on multiple occasions from July 2022 through August 2023.

Condition 7.4.10 of Construction Permit, App. No. 96030134:

Koppers, Inc., failed to notify deviations of CAAPP permit, App. No. 96030134 and 35 IAC 218, Subpart RR.

Condition 7.4.3(e)(i) of Construction Permit, App. No. 96030134:

Koppers, Inc., caused or allowed the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from the coal tar distillation process on multiple occasions from July 2022 through September 2023.

Condition 7.4.3(f)(i) of Construction Permit, App. No. 96030134:

Koppers, Inc., failed to comply with emission capture and control techniques which achieve overall reduction of at least 81 percent of volatile organic material (VOM) emissions from the coal tar distillation process on multiple occasions from July 2022 through September 2023.

Condition 7.7.6(a)(i)(A) of Construction Permit, App. No. 96030134:

Koppers, Inc., may have caused or allowed emissions of SO₂ to exceed 260 lb/hr on multiple occasions from August 2022 through June 2023.

Condition 7.7.8(d)(i) of Construction Permit, App. No. 96030134:

Koppers, Inc., failed to operate the continuous emissions monitoring system (CEMS) for the Phthalic Anhydride Reactor Trains A and B to provide permanent records of the hourly average sulfur dioxide (SO₂) emissions based upon three minute samples of air flows and SO₂ concentrations, on multiple occasions from August 2022 through June 2023.

Condition 7.7.8(d)(ii) of Construction Permit, App. No. 96030134:

		Koppers, Inc., failed to maintain Phthalic Anhydride Reactor Trains A and B feeds at previous feed rates during failure of the CEMS and may have failed to sample and analyze the feed stock to demonstrate compliance with SO2 emission limitations on multiple occasions from August 2022 through June 2023.
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STATUS / COMPLIANCE COMMITMENT AGREEMENT (CCA) SUMMARY

Refer to Attorney General Office (AGO) on April 24, 2024.

INSPECTION ARRIVAL

WEATHER CONDITIONS

Arrival Time:	10:00 a.m.		
Sky Conditions:	Partly Cloudy		
Wind Speed:	12 mph	Wind Direction (Direction From):	NNE (North-North-East)
Temperature:	74 °F	Relative Humidity:	75%

OFF-SITE SURVEILLANCE AND OBSERVATIONS

Off-site visual and odor observations were made at various locations around the facility;
A drive-through of the perimeter roads around the facility was made to evaluate for odors and observe for fugitive dust;
Noticeable odors southwest of the source were detected. No visible fugitive emissions were detected being emitted beyond the facility's property lines.

Facility Representatives Present:	Seth Herring / Plant Manager
	Dan Diaconu / Interim Plant Manager
	Sidney Lipps / Safety, Health, Environmental & Quality (SHEQ) Manager
	Tom Rivera / Environmental Manager

EMISSION UNITS/EVALUATIONS PERTINENT TO INSPECTION SCOPE

<u>Evaluation #</u>	<u>Unit ID #</u>	<u>Emission Unit / Evaluation Description</u>	<u>Date Constructed</u>	<u>Control Device(s)</u>
SW	N/A	Source-Wide Evaluation	N/A	N/A
"1" <u>Naphthalene and O-Xylene Storage Tanks</u> (Section 7.6 of CAAPP Permit, App. No. 96030134)	PAA-NT PAA-OXT	Tank 7 – 522,000 Gallon Naphthalene Storage Tank	December, 1978	Sublimation Box No. 3 (SB-3)
		Tank 300 – 827,000 Gallon O-Xylene Storage Tank	October, 1973	None
		Tank 303-PAA – 826,000 Gallon O-Xylene Storage Tank	December, 1970	None
		Tank 304A – 84,000 Gallon O-Xylene Storage Tank	June, 1970	None
		Tank 304B – 84,000 Gallon O-Xylene Storage Tank	June, 1978	None
	Tank 305 – 822,000 Gallon Naphthalene Storage Tank	June, 1970	Sublimation Box No. 2 (SB-2)	
"Naphthalene Distillation Plant Project"				
"2-1" Construction Permit - Revised - NSPS/NESHAP - App. No. 14100012	NDPP	2.1 - Distillation Operation and Process Tanks;	October 31, 2024	TO-5, & Scrubber System (CD-1).
"2-2" Construction Permit - Revised - NSPS/NESHAP - App. No. 14100012	NDPP	2.2 - Storage Vessels;	October 31, 2024	Fume Scrubber (#2)/Thermal Oxidizer (TO 1-4) – Tar Plant Thermal Oxidizer
"2-3" Construction Permit - Revised - NSPS/NESHAP - App. No. 14100012	NDPP	2.3 - Truck and Railcar Transfer Racks;	October 31, 2024	Oxidizer-Scrubber System (TO-5/CD-1)
"2-4" Construction Permit - Revised - NSPS/NESHAP - App. No. 14100012	NDPP	2.4 - Process Heater;	October 31, 2024	Configuration 1: Mercury Removal System, SCR System (SCR-1) and SO2 Scrubber (CD-1) Configuration 2: SCR System (SCR-1)

EMISSION UNIT SUPPLEMENTAL INFORMATION

Koppers Inc., includes a tar plant, naphthalene distillation plant, wastewater treatment plant, and the Stickney Oil Terminals. The facility manufactures chemical oil products, creosotes, coal tar pitches, coal tar distillate, and phthalic anhydride from coal tar. Raw materials or products may be stored at the Stickney Oil Terminals.

The below table illustrates the emission units at the Naphthalene Plant.

Operation	Emission Unit	Emission Control Equipment/Measures
Process Equipment	Dehydrator Column (V-610)	Oxidizer-Scrubber System (TO-5/CD-1)
	Solvent Column (V-620)	
	Naphthalene Column (V-630)	
	Caustic Wash Column(V-601)	
	Intermediate Tank (T648)	
Storage Tanks	Material Storage Tanks (T649 - 651)	Fume Scrubber (#2) / Thermal Oxidizer (TO 1-4)
	Material Storage Tanks (T662 & 663)	
	Light Oil Tank (T667)	
	Methyl Naphthalene Tank (T664)	
	Off-Spec Naphthalene Tank (T665)	
	Solvent Tanks (T660)	
	Intermediate Tank (T654)	
	Wastewater Storage Tank (T678)	
Naphthalene Loadout	Truck Loading Rack (LR-1)	Oxidizer-Scrubber System (TO-5/CD-1)
	Truck Loading Rack (LR-2)	Thermal Oxidizer (TO 1-4)
	Railcar Loading Racks (RCL-1 through RCL-6)	
Process Heater	Process Heater for the Naphthalene Column (RB-1)	Configuration 1: Mercury Removal System, SCR System (SCR-1) and SO ₂ Scrubber (CD-1)
		Configuration 2: SCR System (SCR-1)
Process Components	Components (e.g., Valves, Flanges, Pressure Relief Valves & Pumps Seals) Handling Organic Liquids in the Affected Plant	Leak Detection and Repair Program

The PAA (Phthalic Anhydride) plant ceased operations on April 2025.

EVALUATION – SW

Source-Wide Evaluation

INSPECTION FOCUS and FINDINGS

FUGITIVE PARTICULATE OPERATING PROGRAM (FPOP):

The facility is located in Cook County with an SIC (Standard Identification Code) of 2865, defined as “Cyclic Organic Crudes and Intermediates and Organic Dyes and Pigments”, specified in 35 IAC 212.302, Geographical Areas of Application, manufacturing operation (SIC major groups 20 through 39).

An updated FPOP was submitted September 2025 and the review was minimally acceptable on October 14, 2025.

Findings:

A review of the FPOP plan generated the following comments:

- *Pursuant to Section 35 IAC 212.310 a):*
A minimum operating program shall include the name and address of the source.
 - Name and address are in the FPOP document submission.
- *Pursuant to Section 35 IAC 212.310 b):*
A minimum operating program shall include the name and address of the owner or operator responsible for execution of the operating program.
 - Name and address of the responsible party are in the FPOP document submission.
- *Pursuant to Section 35 IAC 212.310 c):*
A minimum operating program shall include a map or diagram of the facility with locations of storage piles, conveyor loading operations, normal traffic pattern access areas and all normal traffic patterns within the source.
 - A map is included with the FPOP document submission.
- *Pursuant to Section 35 IAC 212.310 d):*
A minimum operating program shall include the location of unloading and transporting operations with pollution control equipment.
 - No unloading and/or transporting of material conducted that could result in fugitive particulate matter emissions in outdoor areas. Crystallized phthalic anhydride is flaked and bagged for shipment indoors, and emissions from the flaking and bagging are controlled through local ventilation vented through a baghouse.
If loading/unloading or transporting operations of material that could result in fugitive particulate matter emissions, this Fugitive Particulate Operating Program (FPOP) will be amended to identify these sources and the best management practices to control fugitive particulate matter emissions.
- *Pursuant to Section 35 IAC 212.310 e):*
A minimum operating program shall include a detailed description of the best management practices (BMP) utilized to achieve compliance with this Subpart, including an engineering specification of particulate collection equipment, application systems for water, oil, chemicals and dust suppressants utilized and equivalent methods utilized.
 - Unpaved traffic roads exist as indicated on plant diagram.
Distance traveled on unpaved traffic roads is estimated to be 2115 miles per year. Naturally occurring precipitation and the nature and use of the unpaved roads is sufficient to minimize dust from traffic areas. The Facility does not generate excess fugitive dust from traffic activities.

Paved traffic roads exist as indicated on plant diagram.
Distance traveled on paved traffic roads is estimated to be 7820 miles per year. An outside contractor cleans the traffic areas at least once per calendar quarter with a street sweeper to minimize dust accumulation. The contractor is available if conditions warrant more frequent or special cleanings. Records of street sweeping occurrences are maintained at the Facility.

Paved parking lots exist as indicated on the facility plant diagram.

Distance traveled on paved parking lots is estimated to be 1230 miles per year. An outside contractor cleans the paved parking areas at least monthly with a street sweeper to minimize dust accumulation at the facility. The contractor can be contacted if conditions warrant more frequent cleanings. Records of street sweeping occurrences are maintained at the Facility.

Screening Operations, Bucket Elevators, Conveyors, Conveyor Transfer Points, Bagging Operations.

Equipment and operations are all indoors and not sources of fugitive particulate emissions. The equipment is associated with Phthalic Anhydride (PAA) Plant, which on April 2025 ceased operations and undergoing decommissioning and when completed will be removed from the Fugitive Particulate Operating Program (FPOP).

Storage Piles.

An outside staging area for dewatered wastewater treatment sludge from the Metropolitan Water Reclamation District of Greater Chicago is utilized as an absorbent clean-up media. The storage pile of sludge is located outdoors at the southeast corner of the Facility and is not a source of fugitive particulate matter emissions.

- *Pursuant to Section 35 212.310 f):*

Estimated frequency application of dust suppressants by location of materials.

- The Facility does not generate excess fugitive dust from traffic activities.

An outside contractor cleans the paved traffic areas and parking paved lots with a street sweeper to minimize dust accumulation at the Facility.

- *Pursuant to Section 35 IAC 212.310 g):*

Such information as may be necessary to facilitate the Agency's review of the operating program.

- Additional information is not necessary.

- *Pursuant to Section 35 IAC 212.312:*

Amendments to the Operating Program.

The operating program (FPOP) shall be amended from time to time by the owner or operator so that the operating program is current. Such amendments shall be consistent with the minimum operating practices and shall be submitted to the Agency for review.

- The Operation Program shall be reviewed at least annually for accuracy.

Should operations change such that additional potential sources of fugitive dust are present at the Facility, or the plan is otherwise outdated, the Operation Program will be amended to identify new potential sources of fugitive dust and best management practices to control fugitive dust particulate matter emissions. Following the implementation of amendments, the plan will be submitted to the Illinois EPA for review.

The facility maintains an FPOP on site and follows the above minimum requirements.

COMPLAINTS/INCIDENTS:

Recent complaints/incidents or reported to the Illinois EPA.

Findings:

Numerous odor citizen complaints were received by the Agency in 2024 and 2025.

Each complaint is reviewed and forwarded to the AGO.

BAGHOUSE EVALUATION:

Is the source permitted to operate baghouses as a means to control PM?

Findings:

No baghouses are operated on-site.

OZONE DEPLETING SUBSTANCES:

Compliance with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82 Subpart F during maintenance and repair of appliances.

Findings:

Koppers does not stock any refrigerants on site.

An outside contractor is called for all service and repairs of appliances.

All technicians are certified.

ASBESTOS DEMOLITION AND RENOVATION:

Any asbestos demolition or renovations.

Findings:

Any asbestos demolition or renovation activities are reported by the facility.

PARTICULATE MATTER (PM₁₀) CONTINGENCY MEASURE PLAN:

Research if facility subject to regulation 35 IAC Section 212.700.

Findings:

The facility is not subject to 35 IAC Section 212.700.

RISK MANAGEMENT PLAN:

Research if facility subject to regulation 40 CFR 68.215(a).

Findings:

The facility is not subject to a Risk Management Plan (40 CFR 68).

EPISODE ACTION PLAN (EAP):

Research if facility subject to regulation 35 IAC Section 244.141.

Findings:

Illinois EPA datafiles, show a submission in September of 2019.

OPERATING LIMITS FOR THE PLANT:

The amount of naphthalene produced by the plant:

<u>Construction Permit Limits</u>		<u>ACTUAL Limits</u>	
<u>tons/month</u>	<u>tons/year</u>	<u>tons/month</u>	<u>tons/year</u>
5,515	55,150	1,673 (June - 2025)	18,218 (2024) 12,567 (September - 2024 through August - 2025)

Findings:

Monthly and annual VOM limits are maintained by the facility.

Actual limits are based on operations from September 2024 through August 2025.

STATE EMISSION STANDARDS FOR GENERAL APPLICABILITY:

The Naphthalene Distillation Plant units are subject to the following state emission standards:

- 35 IAC 212.123(a), which provides that the emission of smoke or other particulate matter, with an opacity greater than 30 percent into the atmosphere from any emission unit, except as allowed by 35 IAC 212.123(b) or 212.124.
- 35 IAC 212.301 and 212.314, which provide that no cause or allowed emission(s) of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 25 miles per hour.

Findings:

- During inspection of facility there did not appear to be particulate matter emissions with opacity greater than 30% from any emission unit.
- During inspection of the facility there were no observations of any visible fugitive particulate emissions from any process beyond the property line.

STATE EMISSION STANDARDS FOR COOLING TOWERS:

For the new cooling tower, the facility shall comply with the following state emissions standards:

- 35 IAC 212.123(a) for opacity.
- 35 IAC 212.321 for particulate matter (PM).
- 35 IAC 218.301 for organic material (OM).
- 35 IAC 218.986(c) for volatile organic Material (VOM).

Findings:

Cooling towers utilize clean water, so emissions are minimal.

- During operator routine inspections, opacity would be noted if opacity is observed. There have not been instances where opacity greater than 30% has been observed.
- PM emissions are minimized by use of clean water and use of baffles.
- TOC (Total Organic Carbon) is monitored at inlet and outlet of heat exchange system monthly.

GOOD AIR POLLUTION CONTROL PRACTICES:

Maintain and operate the units and associated control equipment with good air pollution control practices for minimizing emissions.

Findings:

Emission units and air pollution control equipment are maintained and operated in satisfactory manner.

Required inspections are performed and maintenance activities are documented on the inspection and repair log.

Records of the maintenance activities were reviewed.

- For existing Storage Tank 7 and Storage Tank 305, which currently store naphthalene for the Phthalic Anhydride Plant, and will or may, respectively, be used to store naphthalene produced by the affected plant, this permit is issued based upon an increase in VOM emissions from these tanks due to this project of at most 2.0 tons per year.

<u>VOM Emissions</u>	
<u>Construction Permit Limits</u>	<u>ACTUAL Limits</u>
<u>Tons/Year</u>	<u>Tons/Year</u>
2.0	0.13 - 01/24 through 12/24 1.54 – 01/25 through 08/25

Findings:

Monthly and 12-month rolling annual VOM emissions are maintained.

Actual emissions are based on operations from January 2024 through August 2025.

No exceedances noted.

- For existing boilers, which would provide steam to heat process tanks at the plant, this permit is issued based upon increases in emissions of NOx and CO from the existing boilers due to this project of at most 1.64 and 1.38 and increases in emissions of particulate, SO2, and VOM that are negligible, i.e., no more than 0.12, 0.44 and 0.44 tons per year, respectively.

Findings:

See table below, "Emission Limitations".

RECORDKEEPING REQUIREMENTS FOR EXEMPT EMISSION UNITS:

Maintain the following items for units that are exempt from permitting:

- File containing a listing of these units with description, equipment model/serial number, location (by facility area).

- File containing a determination of the maximum emissions of NO_x, CO, VOM, PM/PM₁₀/PM_{2.5}, and SO₂, from these units when operating normally (tons/year), which records shall address each unit individually and/or address groups of similar units.
- File providing the combined maximum emissions of NO_x, CO, VOM, PM/PM₁₀/PM_{2.5}, and SO₂, (tons/year and tons/month) from these units.
- Maintain records of total actual emissions of NO_x, CO, VOM, PM/PM₁₀/PM_{2.5} and SO₂, (tons/year and tons/month) from the project.

Findings:

Description and records of exempt units are maintained

Monthly and annual records of pollutants are maintained.

HAPs are tracked monthly and annually.

GENERAL OPERATION AND MAINTENANCE PROCEDURES:

- Operation and maintenance of emission units with written procedures provided by manufacturer or supplier.
- For continuous monitoring devices and operational instrumentation, the facility shall keep a copy of manufacturer's or supplier's recommended operating and maintenance procedures for the performance of the devices.
- Continuous monitoring devices and operational instrumentation shall take readings every minute and reduce data to a 1-hour block average.

Findings:

Per the source, the manufacturer recommendations for maintaining emissions units are followed.

Weekly and quarterly, monthly and annually preventive maintenance is conducted.

Maintenance sheets are completed, which are used to organize and maintain all maintenance.

The facility maintains records of continuous monitoring devices and operational instrumentation to take readings every minute and reduce data to a 1-hour block average.

GENERAL REQUIREMENTS FOR LOGS:

- Logs required will provide the information required to be kept in a log readily accessible.
- Maintain logs for the operation and maintenance and repair of monitoring devices and other instrumentation.
- Operating logs required shall, at a minimum, include the following information:
 - Information identifying periods when a unit or group of related units was not in service.
 - Periods a unit or group of related units is operating normally, to generally confirm normal operation.
 - For periods when a unit or group of related units is in service and is not operating normally, identification of each such period, with detailed information describing the operation of the unit(s) and the potential consequences for additional emissions from unit(s), with explanation.

Findings:

Logs of inspections and repairs with description and detailed information of corrective actions taken are maintained.

NOTIFICATION REQUIREMENTS:

The facility shall notify the Illinois EPA of deviations with the permit requirements within 30 days of an occurrence. Reports shall describe the deviations, the probable cause of such deviations, the corrective actions taken, and any preventive measures taken.

Findings:

If any circumstance should arise that may result in a reportable deviation, the facility stated that they provide the required notifications and supplemental information to the Illinois EPA within the required time per the permit.

EMISSION LIMITATIONS:

Summary of Permitted Emission from the Naphthalene Distillation Plant Project (Tons/Year) (Updated October 2024)

Emission Unit(s)	NO _x		CO		VOM		SO ₂		PM / PM10 / PM2.5	
	CP Limits ton/yr	ACTL Limits ton/yr	CP Limits ton/yr	ACTL Limits ton/yr	CP Limits ton/yr	ACTL Limits ton/yr	CP Limits ton/yr	ACTL Limits ton/yr	CP Limits ton/yr	ACTL Limits ton/yr
Naphthalene Distillation Plant										
Columns, Process Tanks, Process Heater, Storage Tanks & Truck/Rail Car Transfer Racks, New Oxidizer (TO-5)/Scrubber System (CD-1) ^a	16.64	<u>12.88</u> (09/24 – 08/25)	38.11	<u>25.75</u> (09/24 – 08/25)	8.72	<u>7.54</u> (09/24 – 08/25)	0.76	<u>0.69</u> (09/24 – 08/25)	6.88	<u>4.6</u> (09/24 – 08/25)
Truck Transfer Racks & Railcar Loading Racks (Uncaptured/Uncontrolled Emissions)	---	---	---	---	0.20	<u>0.01</u> (09/24 – 08/25)	---	---	---	---
Storage Tanks Controlled by Existing Fume Scrubber (#2) & Thermal Oxidizer (TO 1-4) ^b	---	---	---	---	1.10	<u>0.007</u> (09/24 – 08/25)	---	---	---	---
Storage Vessels (Uncontrolled During Outages)	---	---	---	---	0.44	<u>0.00</u> (09/24 – 08/25)	---	---	---	---
Component Leaks	---	---	---	---	1.36	<u>0.12</u> (09/24 – 08/25)	---	---	---	---
Exempt Emission Units (Cooling Tower & Ammonia Totes)	---	---	---	---	---	---	---	---	0.37	<u>0.37</u> (09/24 – 08/25)
Subtotal:	NO _x		CO		VOM		SO ₂		PM / PM10 / PM2.5	
	16.64	<u>12.88</u>	38.11	<u>25.75</u>	11.82	<u>7.677</u>	0.76	<u>0.69</u>	7.25	<u>4.97</u>

Table Notes:

- a. Transfer of material to trucks and railcars is permitted, as limited by Conditions 1.2(a) and 2.3.3(a)(ii). The 8.72 ton/year limit addresses loadout of naphthalene from loading operations LR-1, LR-2 and RCL-1 through RCL-6.
- b. Increase in emission of pollutants other than VOM from this existing control system are in construction permit tables.

Findings:

Actual emissions are based on operations from September 2024 through August 2025.

EVALUATION #1

(Section 7.6 of the "Revised" Title-V – CAAPP, App. No. 96030134)

Emission Unit(s): Naphthalene and O-Xylene Storage TanksEmission Control Equipment: Sublimation Boxes (SB-3 for Tank-7 & SB-2 for Tank-305)

<u>Emission Unit</u>	<u>Description</u>	<u>Emission Control Equipment</u>
T-7 (previously 7)	522,000 Gallon Naphthalene Storage Tank (Tank 7)	Sublimation Box No. 3
MF-300 (previously 300)	835,000 (previously 827,000) Gallon O-Xylene Storage Tank (Tank 300)	None
MF-303 (previously 303-PAA)	835,000 (previously 826,000) Gallon O-Xylene Storage Tank (PAA Plant Tank 303)	None
MF-304A (previously 304A)	84,000 Gallon O-Xylene Storage Tank (Tank 304A)	None
MF-304B (previously 304B)	84,000 Gallon O-Xylene Storage Tank (Tank 304B)	None
MF-305 (previously 305)	822,000 Gallon Naphthalene Storage Tank (Tank 305)	Sublimation Box No. 2

After being unloaded from barges, railroad tank cars and tank trucks, naphthalene is stored in one of the tanks. Vapors from the naphthalene tanks is recovered using sublimation boxes, which cause the naphthalene vapors go from the gaseous state to solid state.

INSPECTION FOCUS and FINDINGS**APPLICABLE REGULATIONS:**

- 40 CFR 63, Subparts A and G, NESHAAP for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) for Process Vents, Storage Vessels, Transfer Operations, and Wastewater (specifically sections 40 CFR 63.120 through 63.123 for storage vessels);
- No person shall cause or allow the discharge of more than 3.6 kg/hr (8 lb/hr) of organic material into the atmosphere from any emission unit, except as provided in 35 IAC 218.302, 218.303, 218.304 and the following exception: If no odor nuisance exists the limitation of 35 IAC 218 Subpart G shall apply only to photochemically reactive material [35 IAC 218.301].

Findings:

- The facility follows the NESHAAP conditions from SOCMI (Synthetic Organic Chemical Manufacturing Industry) through 40 CFR 63 Subpart H (HON – Hazardous Organic NESHAAP) with information and documentation submitted for the control, monitoring, recordkeeping and reporting requirements for the process vents, storage vessels, transfer operations and wastewater streams.

The sublimation boxes, which are used to control naphthalene emissions during unloading operations at the two tanks listed above. The boxes are fully functional and they are inspected visually during monthly SPCC tank/containment inspections. For purposes of calculating emissions, the facility assumes 15 percent control at the sublimation boxes.

- Organic emissions of the naphthalene tanks are based on the TANKS program.

OPERATIONAL AND PRODUCTION LIMITS AND WORK PRACTICES:

- True vapor pressure of the petroleum liquids in the storage tanks is below 1.5 psia;
- Maintain good operating practices with inspections and repairs for the sublimation boxes.

Findings:

- *The source did not provide record of the true vapor pressure of the material stored in Tanks T-7 and MF-305.*
- *Sublimation boxes associated with the naphthalene tanks, are inspected visually during SPCC (Spill, Prevention, Control and Countermeasure) tank/containment inspections monthly and necessary repairs and maintenance, if any, are documented by the facility.*

MONITORING REQUIREMENTS:

The facility shall fulfill the applicable leak inspection provisions as specified by 40 CFR 63.148.

Findings:

Per the source, LDAR monitoring of equipment are conducted. Valves in naphthalene service are monitored annually. Maintenance and repairs are made as required. The monitoring reports are submitted as required.

RECORDKEEPING REQUIREMENTS:

- Dimensions and capacity of each storage tank;
- Inspections for the sublimation boxes with detailed information;
- Material identification stored in each storage tank;
- Maximum true vapor pressure (psia) of each material in the storage tanks;
- Monthly and annual throughput of each storage tank;
- Monthly and annual VOM emissions from the tanks.

Findings:

- *The source keeps record of the inspections for the sublimation boxes. The source did not provide the rest of the information above for Tanks T-7 and MF-305. Therefore, the author recommends the following violation:*
 - *Section 39.5(6)(a) of the Act and Conditions 7.6.9(a), (c)-(f) of CAAPP Permit 96030134: Koppers Carbon Materials LLC failed to maintain record of the following information for Tanks T-7 and MF-305:*
 - a. dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.*
 - b. identification of the material stored in each affected tank;*
 - c. maximum true vapor pressure of each material stored in the affected tanks, psia;*
 - d. the throughput of each affected tank, gal/mo and gal/yr; and*
 - e. the monthly and aggregate annual VOM emissions for the affected tanks based on material stored, tank throughput, and applicable emission factors and formulas with supporting calculations.*

REPORTING REQUIREMENTS:

Recent facility deviations history and any submitted appropriate deviation reports from the "Naphthalene Storage Tanks and Sublimation Boxes".

Findings:

There were no current reportable deviations.

EMISSION LIMITATIONS:

There are no specific emission limitations for these units, however, there are source wide emission limitations in Condition 5.5 of the "Revised" Title-V – CAAPP permit that include these units.

EVALUATION # 2-1*(Section 2.1 of Construction Permit, App. No. 14100012)***Distillation Operation and Process Tanks**

Operation	Emission Unit	Emission Control Equipment/Measures
Process Equipment	Dehydrator Column (V-610)	Oxidizer-Scrubber System (TO-5 / CD-1)
	Solvent Column (V-620)	
	Naphthalene Column (V-630)	
	Caustic Wash Column(V-601)	
	Intermediate Tank (T648)	

The plant will process refined chemical oil in columns and process vessels to produce naphthalene and co-products, i.e., light oil, tar acids, and solvents. This feedstock will be provided by the existing Tar Plant at the source and from other sources. The co-products will be shipped to customers. The source does not currently burn co-products as fuel in the process heater for the new naphthalene distillation column.

A new thermal oxidizer-scrubber system will be used to control emissions from the columns and process tanks in the affected plant. The oxidizer (TO-5) will control emissions of VOM and organic HAPs. The scrubber will control emissions of SO₂, which are formed when compounds in the flue gas that contain sulfur are burned in the oxidizer. This new control system will also control emissions from the new truck loading rack, which is addressed in Subpart 2.3 of the construction permit.

The SO₂ scrubber in this control system will also be able to control SO₂ emissions from the new process heater addressed in Subpart 2.4 of this permit. The exhaust from the SCR on this heater would also be able to go directly to the atmosphere when natural gas is used and control of emissions with the scrubber is not otherwise required.

This control system will have a heat exchanger in the ductwork after the oxidizer. This heat exchanger will use the hot flue gas to heat a thermal fluid that will be circulated through heat exchangers in various pieces of equipment in the affected plant.

INSPECTION FOCUS and FINDINGS**APPLICABLE FEDERAL EMISSION STANDARDS:**

- Each process vent is subject to the NESHAP for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) for Process Vents, Storage Vessels, Transfer Operations, and Wastewater, 40 CFR 63 Subpart G.
For the process vents, emissions of total organic HAPs shall be reduced by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen, and compliance can be determined by measuring either organic HAPs or total organic carbon using the procedures in 40 CFR 63.116. [40 CFR 63.113(a)(2)]

Findings:

The process vents are controlled by the source's TO-5 oxidizer, which was last stack tested in September 2020. This test included USEPA Method 25A testing for VOM. However, since the TO-5 was not tested for HAP, per USEPA Method 18, as required by NESHAP Subpart G, the author recommends the following violation:

- Sections 9(b) and 9.1(d) of the Act, 40 CFR 63.126(b)(1) and Condition 2.1.2-1(a) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have failed to ensure emissions of total organic HAPs are reduced by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent.*
- The distillation operation is subject to the requirement of the New Source Performance Standard (NSPS) for Volatile Organic Compound (VOC) Emissions from SOCMI Distillation Operation, 40 CFR 60 Subpart NNN.

Findings:

40 CFR 60 Subpart NNN requires reduce emission of TOC (less methane and ethane) by 98 weight-percent or to a TOC (less methane and ethane) concentration of 20 ppmv on a dry basis corrected by 3 percent oxygen, whichever is less stringent. The September 2020 stack test on thermal oxidizer TO-5 demonstrated the average VOM emissions from the three test runs was 6.9 ppm.

- The process tanks are subject to the requirement of the NESHAP for Benzene Waste Operations, 40 CFR 61 Subpart FF. Alternatively, pursuant to 40 CFR 63.110(e)(1), the facility may elect to comply with the following, which shall constitute compliance with the provisions of 40 CFR Part 61 Subpart FF.
 - Comply with the requirements of 40 CFR 63 Subpart G; and
 - For any Group 2 wastewater stream or organic stream whose benzene emissions are subject to control through the use of one or more treatment processes or waste management units under the provisions of 40 CFR Part 61 Subpart FF, comply with the requirements of 40 CFR 63 Subpart G for Group 1 wastewater streams.

Findings:

The process vents are controlled by the source's TO-5 Oxidizer per Subpart G. The oxidizer was last stack tested on September, 2020. Per that test, the VOM resulted in 6.9 ppm.

APPLICABLE STATE EMISSION STANDARDS:

The process vents are subject to 35 IAC 218.301, which provides that no person shall cause or allow the discharge of more than 8 lbs/hour of organic material into the atmosphere from an emission source, unless emissions are controlled by at least 85 percent, as provided in 35 IAC 218.302, or the emissions do not qualify as photochemically reactive material, as defined by 35 IAC 211.4690 and do not contribute to an odor nuisance.

The process vents are subject to 35 IAC 218.986(a), which requires that every owner or operator of emission units that are subject to 35 IAC 218 Subpart TT, Other Emission Units, other than a cooling tower or leaking components, shall control VOM emissions of each such emission unit using emission capture and control techniques that achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent.

Findings:

The process vents are controlled by the source's TO-5 oxidizer, which was last stack tested on Sept 2020. Per that test, the average VOM emissions from the three test runs was 0.042 lb/hr, as shown in the table below. Therefore, it appears the organic material emissions are less than 8 lb/hr as required by 35 IAC 218.301.

The September 2020 stack test on TO-5 did not demonstrate the VOM destruction efficiency. Therefore, the author recommends the following violations:

- Sections 9(a) and 9(b) of the Act, 35 IAC 218.986(a), and Condition 2.1.2-2(b) of Construction Permit 14100012: Koppers Carbon Materials LLC may have failed to control VOM emissions of each such emission unit using emission capture and control techniques at the naphthalene thermal oxidizer TO-5 that achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent.

Table 2-3
Summary of Results – Thermal Oxidizer

Run Number	Run 2	Run 3	Run 4	Average
Date	9/29/20	9/30/20	9/30/20	--
Sulfur Dioxide Data				
Concentration, ppmvd	0.0	0.0	0.0	0.0
Emission Rate, lb/hr	0.00	0.00	0.00	0.00
Volatile Organic Matter Data				
Inlet Concentration, ppmvd	29.9	16.1	19.4	21.8
Outlet Concentration, ppmvd @ 3% O ₂	9.6	6.4	4.7	6.9
Outlet Emission Rate, lb/hr	0.059	0.040	0.026	0.042

CONTROL REQUIREMENTS AND WORK PRACTICES:

- Natural gas shall be the only fuel burned in the oxidizer.
- The rated capacity of the fuel burners in the oxidizer shall not exceed 4.5 million Btu/hour.
- The oxidizer shall be operated to achieve a minimum of 98 percent destruction efficiency for organic material.
- During periods when an process vent is in operation, the combustion chamber temperature of the oxidizer shall be maintained above at a temperature that is recommended minimum operating temperature, but not less than 1400 °F in the absence of an emissions test or, once testing has been conducted demonstrating compliance with applicable requirements, the minimum operating temperature during emission testing.
- The combustion chamber of the oxidizer shall be preheated to the manufacturer's recommended temperature, but not less than 1400 °F in the absence of an emissions test or a temperature that is consistent with the most recent emission test in which compliance was demonstrated, prior to sending feedstock to the process equipment.
- The facility shall operate and maintain the oxidizer in accordance with written procedures developed and maintained by the facility. These procedures shall provide for good air pollution control practices to minimize emissions and shall include the facility's standard operating procedures for startup, normal operation, and shutdown of the emission units venting to the oxidizer.

Findings:

- *Natural gas is the only fuel burned in the oxidizer.*
- *Capacity of the fuel burners in the oxidizer do not exceed 4.5 million btu/hour.*
- *The September 2020 stack test on the thermal oxidizer TO-5 did not demonstrate the VOM destruction efficiency. Therefore, the author recommends the following violation:*
 - *Section 9(b) of the Act and Condition 2.1.4(a)(ii) of Construction Permit 14100012: Koppers Carbon Materials LLC may have failed to operate the naphthalene thermal oxidizer TO-5 to achieve a minimum of 98 percent destruction efficiency for organic material.*
- *The source provided graphical chamber temperature records of the oxidizer. Per the September 2020 stack test, the minimum combustion chamber temperature is 1,400°F. Per these records, there were numerous times when the temperature of the oxidizer fell below the 1400°F required minimum temperature. For each instance when the oxidizer operated under the required temp, the source provided duration and cause with reasons. In total, the TO was operated below the required temp for 86 hours from Jan 2024 through Aug 2025. Therefore, the author recommends the following violation:*
 - *Section 9(b) of the Act and Conditions 2.1.4(a)(iii)-(v) of Construction Permit 14100012: Koppers Carbon Materials LLC failed to operate the thermal oxidizer in accordance with the following control requirements and work practices:*
 - During periods when an affected process vent is in operation, the combustion chamber temperature of the oxidizer shall be maintained above at a temperature that is consistent with the manufacturer's recommended minimum operating temperature, but not less than 1400°F in the absence of an emissions*

test or, once testing has been conducted demonstrating compliance with applicable requirements, the minimum operating temperature during emission testing.

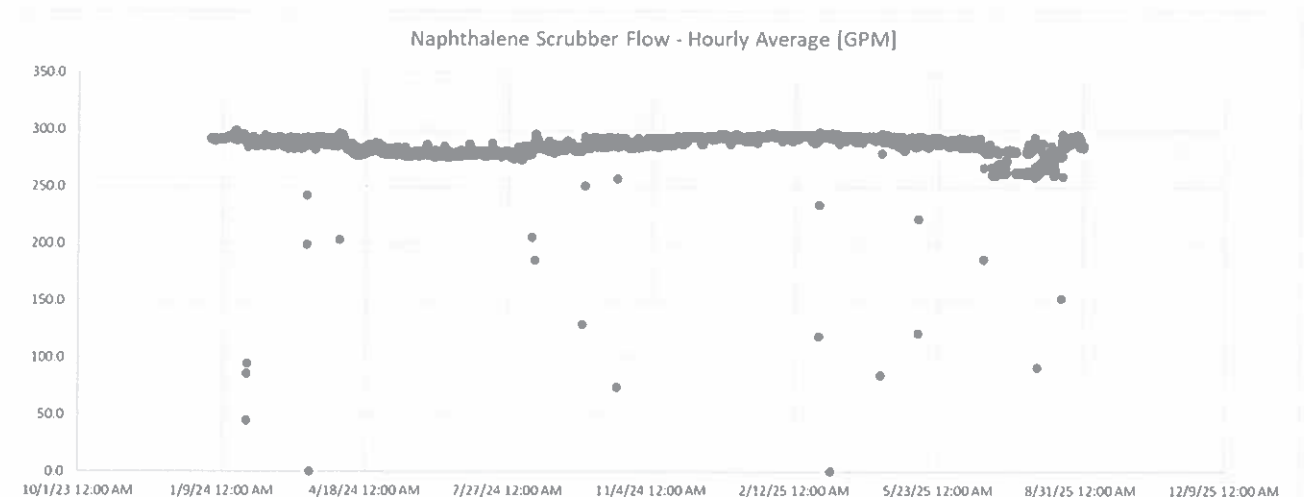
- b. The combustion chamber of the oxidizer shall be preheated to the manufacturer's recommended temperature, but not less than 1400°F in the absence of an emissions test or a temperature that is consistent with the most recent emission test in which compliance was demonstrated, prior to sending feedstock to the process equipment.
- c. The Permittee shall operate and maintain the oxidizer in accordance with written procedures developed and maintained by the Permittee. These procedures shall provide for good air pollution control practices to minimize emissions and shall include the Permittee's standard operating procedures for startup, normal operation, and shutdown of the emission units venting to the oxidizer.

- The key operating parameters of the scrubber, as specified below, shall be maintained at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements:
 - Minimum scrubber water flow rate: hourly average.
 - Maximum scrubber water outlet temperature: °F, hourly average.
 - Maximum scrubber exhaust gas outlet temperature: °F, hourly average.
 - Type and minimum usage rate of scrubbant additive other than caustic: gallons/day.

Findings:

Scrubber Water Flow Rate:

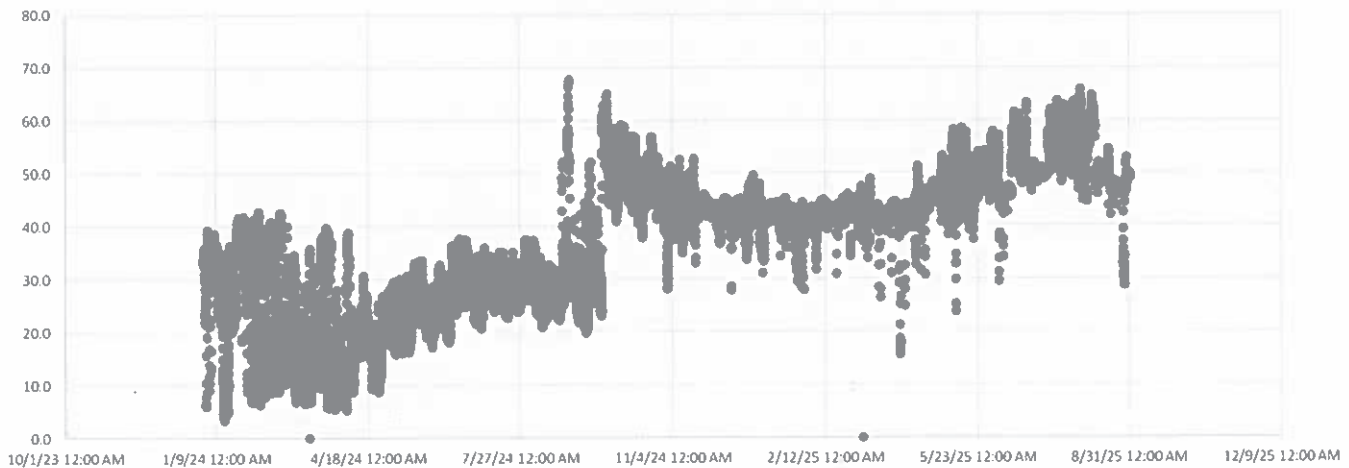
The source provided graphical water flow rate records in gallon per minute (see graph below). Per these records, most of the time the scrubber was operated between 250 gpm & 300 gpm. However, there were some instances when the scrubber was operating below 235 gpm. Based on the September 2020 stack test, the minimum water flow rate is 235 gpm. Therefore, there were periods where the scrubber operated while the water flow rate was out of range.



Water Outlet Temperature:

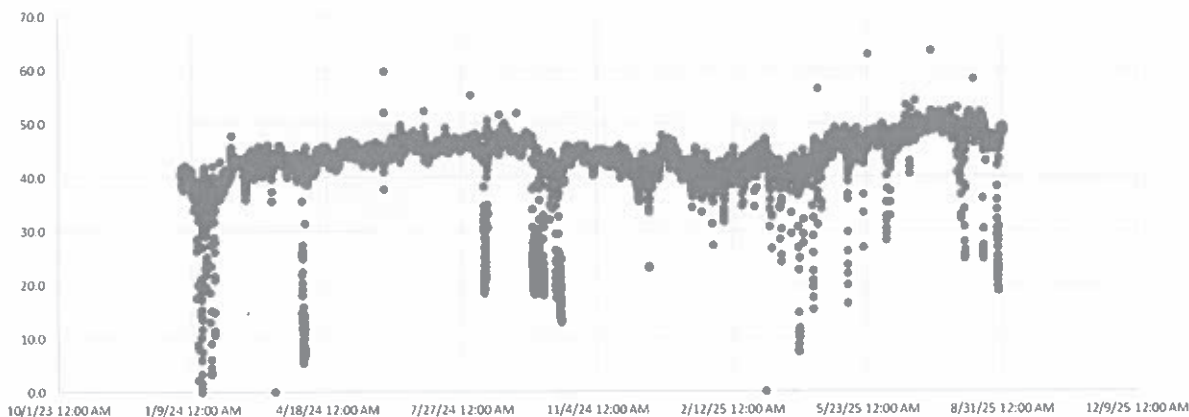
The source provided graphical water outlet temperature in degrees C (see graph below). Per these records, the scrubber was operated between a range of 3 C to 68 C. Based on the September 2020 stack test, the maximum scrubber water outlet temperature is 135.4 F (57.4 C). Therefore, there were periods where the scrubber operated while the water outlet temperature was out of range.

Naphthalene Scrubber Outlet Temp - Hourly Average [C]

**Exhaust Gas Outlet Temperature:**

The source provided graphical exhaust gas outlet temperature in degrees C (See graph below). Per these records, the scrubber was operated between a range of 0 C to 65 C. Based on the September 2020 stack test, the maximum scrubber exhaust gas outlet temperature is 141.4 F (60.77 C). Therefore, there were periods where the scrubber operated while the exhaust gas outlet temperature was out of range.

Naphthalene Scrubber Exhaust Temp - Hourly Average [C]

**Scrubbant Additive:**

The total usage of scrubbant additive was averaged for 20 months, but was not broken down into gal/day for each individual day. The minimum usage rate of scrubbant additive within which the scrubber will be operated was also not provided. Therefore, compliance with this parameter could not be determined.

As described above, there were periods where the scrubber was operated while the parameters were out of range. Therefore, the author recommends the following violation:

- Section 9(b) of the Act and Conditions 2.1.4(b)(i)(A)-(D) of Construction Permit 14100012: Koppers Carbon Materials LLC may have failed to maintain the scrubber at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements for the following parameters:
 - a. A. Minimum scrubber water flow rate: hourly average.
 - b. B. Maximum scrubber water outlet temperature: °F, hourly average.
 - c. C. Maximum scrubber exhaust gas outlet temperature: °F, hourly average.

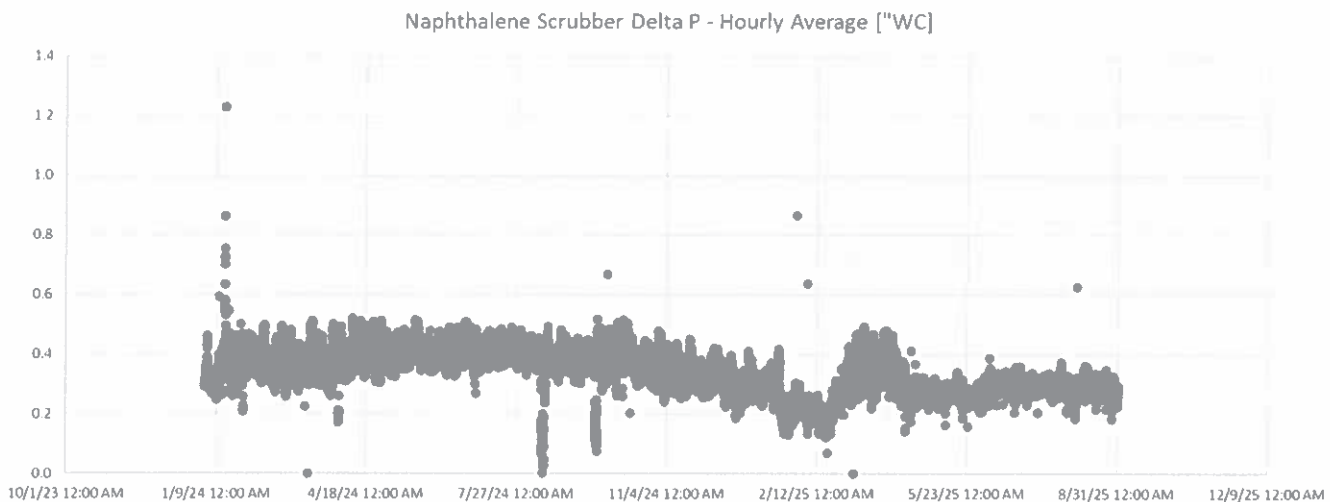
d. D. Type and minimum usage rate of scrubbant additive other than caustic: gallons/day.

If the differential pressure across the scrubber is outside of the normal operating range as defined by the facility a period of 4 hours, the facility shall inspect the scrubber within 24 hours and initiate appropriate corrective action to restore the pressure drop of the scrubber to the normal range.

Findings:

Records of differential pressure across the scrubber were provided below. However, the normal operating range was not provided by the source. Therefore, it is not clear whether the scrubber was operated while the pressure drop was in range. The author recommends the following violation:

- Section 9(b) of the Act and Condition 2.1.4(b)(ii) of Construction Permit 14100012: Koppers Carbon Materials LLC may have failed to maintain the scrubber differential pressure within the normal operating range and may have failed to inspect the scrubber within 24 hours and initiate appropriate corrective action to restore the pressure drop of the scrubber to the normal range.



The facility shall operate and maintain the scrubber in accordance with written procedures developed and maintained.

Findings:

Scrubber operated according to written procedures made and maintained by the facility.

Except allowed by 40 CFR 63.110(e)(1), for process tanks, the facility shall follow all applicable requirements set forth in:

- 40 CFR 61.342 (Standards: General),
- 40 CFR 61.343 (Standards: Tanks),
- 40 CFR 61.344 (Standards: Surface impoundments),
- 40 CFR 61.345 (Standards: Containers),
- 40 CFR 61.346 (Standards: Individual drain systems),
- 40 CFR 61.347 (Standards: Oil-water separators),
- 40 CFR 61.348 (Standards: Treatment processes), and
- 40 CFR 61.349 (Standards: Closed-vent systems and control devices).

Findings:

40 CFR 61.342 (Standards: General):

Koppers has estimated the Total Annual Benzene (TAB) quantity in wastewater streams, calculated as required by 61.355, is less than 1 Megagram (Mg) of benzene on an annual basis.

Since the TAB is less than 10 Mg/yr, the facility is exempt from the requirements of 61.342(b) and (c) and therefore and the standards noted 40 CFR 61.343 through 349.

TESTING REQUIREMENTS:

The facility shall have emission tests performed for the units that are controlled by the oxidizer-scrubber system and the process heater for the naphthalene column.

Within 180 days of initial startup of the affected transfer operation (Subpart 2.3), the Permittee shall have emissions testing conducted for the destruction efficiency of the TO-5 by an independent testing service. This testing shall be conducted in accordance with the applicable USEPA Methods specified in Condition 3.1(b) during maximum representative operating conditions.

Thereafter, until a renewed or revised CAAPP permit is issued that addresses a different interval for periodic testing for the destruction efficiency of thermal oxidizer TO-5, subsequent testing shall be conducted at least once every 60 months.

Findings:

The process vents and the affected transfer operation are controlled by the source's TO-5 oxidizer, which was last stack tested in September 2020. The September 2020 test report did not have destruction efficiency testing for TO-5. The thermal oxidizer TO-5 should have been retested by September 2025, but no protocol or test report was received by IEPA. Therefore, the author recommends the following violation:

- *Section 9(b) of the Act and Conditions 3.1(a)(iii)(A) and 3.1(a)(iii)(B) of Construction Permit 14100012: Koppers Carbon Materials LLC failed to have emissions testing conducted for the destruction efficiency of the TO-5 within 180 days of initial startup of the affected transfer operation, and failed to conduct subsequent testing at least once every 60 months.*

MONITORING REQUIREMENTS FOR THE OXIDIZER-SCRUBBER AND MAIN STACK:

- The facility shall equip the oxidizer-scrubber system with a continuous monitoring device for combustion chamber temperature of the oxidizer, installed in the firebox or in the ductwork immediately downstream of the firebox in a position before any substantial heat exchange occurs. [40 CFR 63.114(a)(1)]
- Monitoring equipment shall be installed, calibrated, maintained, and operated according to manufacturer's specifications or other written procedures that provide adequate assurance that the equipment would reasonably be expected to monitor accurately. [40 CFR 63.114(a)]
- The facility shall establish a range that indicates proper operation of the oxidizer for parameter monitored. In order to establish the range, the information required in 40 CFR 63.152(b) shall be submitted in the Notification of Compliance Status or the operating permit application or amendment.
- Pursuant to 35 IAC 218.105(d)(2)(A)(i), for the oxidizer, the facility shall install, calibrate, maintain, and operate according to vendor specifications at all times instrumentation to monitor the combustion chamber temperature of the oxidizer.
- Pursuant to 35 IAC 218.105(d)(2)(B), for the oxidizer, the facility shall install, calibrate, operate and maintain a continuous recorder on the instrumentation, such as a strip chart, recorder or computer, having an accuracy of ± 1 percent of the temperature measured in degrees Celsius or $\pm 0.5^\circ\text{C}$, whichever is greater.
- Data measured by this instrumentation shall be automatically recorded every one (1) minute and reduced to a 1-hour block average.
- Pursuant to 35 IAC 218.991(a)(2)(A), the facility shall collect and record all data measured by the instrumentation required by 35 IAC 218.105(d)(2)(A)(i) and 218.105(d)(2)(B) and maintain the information at the source for a period of three years.

Findings:

The facility maintains records of continuous data of operating time of the process vents and the capture/control equipment, which is more frequent than daily logs.

- The facility shall equip the scrubber with continuous monitoring devices for the operating parameters specified in Conditions 2.1.4(b)(i)(A), (B), (C) and, if applicable, Condition 2.1.4(b)(i)(D) and for the differential pressure across the packed bed of the scrubber.
- These monitoring devices shall automatically record data and discrete data at least every one (1) minute and reduce the data to a 1-hour block average.

Findings:

Scrubber is equipped with continuous monitoring devices for the various operating parameters and the differential pressure across the packed bed.

Records for the above were provided.

MONITORING REQUIREMENTS FOR BYPASS LINES:

For any bypass line between the origin of the gas stream and the point where the gas stream reaches the process vent, as described in 40 CFR 63.107, that could divert the gas stream directly to the atmosphere, the facility shall:

- Properly install, maintain, and operate a flow indicator that takes a reading at least once every 15 minutes. Records shall be generated as specified in 40 CFR 63.118(a)(3). The flow indicator shall be installed at the entrance to any bypass line that could divert the gas stream to the atmosphere; or

Findings:

The source operates a control valve and electronically monitors the position of the valve at all times. The valve would only open to by pass the control in the even the facility's TO-5 oxidizer malfunctions and/or shuts down. Once this occurs, the source implements their Start UP/Shutdown/Malfunction (SSM) plan, which includes the shutting down of the naphthalene plant. The source does not monitor flow when the valve is open to the bypass line.

RECORDKEEPING REQUIREMENTS:

Maintain all records required by 40 CFR 63.118 for the process vents, including records in 40 CFR 63.118(a)(4) through (a)(8), as applicable:

- Continuous records of the equipment operating parameters under 40 CFR 63.114(a) and Table 3 of 40 CFR 63 Subpart G in accordance with 40 CFR 63.114(c) and 63.117(e).
- Records of the daily average value of each continuously monitored parameter for each operating day determined according to the procedures specified in 40 CFR 63.152(f).
- Hourly records the flow indicator specified under 40 CFR 63.114(d)(1) was operating and whether a diversion was detected at any time during the hour, as well as records of the times and durations of all periods when the gas stream is diverted to the atmosphere or the monitor is not operating.

Findings:

Per the source, records of continuous data of operating times for capture/control equipment are maintained and available upon request.

The facility shall maintain records of the following items for the process vents and the oxidizer-scrubber system:

- A file containing design information for the oxidizer-scrubber system, including:
 - The design heat input of the burners in the oxidizer, in million Btu/hour.
 - Copy of manufacturer's specifications and operating and maintenance procedures for oxidizer-scrubber system.
 - The values of combustion chamber temperature for the oxidizer within which equipment will be operated.
 - The values of the key operating parameters and range of pressure drop for the scrubber within which the scrubber will be operated.

Findings:

The values of the key operating parameters and range of pressure drop for the scrubber within which the scrubber will be operated was not provided. Therefore, the author recommends the following violation:

- *Section 9(b) of the Act and Condition 2.1.8(b)(i)(D) of Construction Permit 14100012: Koppers Carbon Materials LLC failed to maintain records of the following items for the oxidizer-scrubber system: the values of the key operating parameters and range of pressure drop for the scrubber within which the scrubber will be operated.*

A file containing the following information related to emissions of VOM, PM, PM₁₀/PM_{2.5} and SO₂:

- The emission factors used by the facility to determine total emissions of each pollutant from the process vents.
- Emission factors used by facility to determine total emissions of each pollutant from the oxidizer-scrubber system.
- The maximum hourly emission rate of each pollutant from the oxidizer-scrubber system (pounds/hour).

Findings:

Per the source, records of the facility pollutants and emissions factors are maintained and available upon request.

Maintain the following operational records:

- Records for the feedstock processed (tons/month and tons/year).
- Records for the naphthalene production (tons/month and tons/year).

- Information required by 35 IAC 218.991(a)(2)(B) related to the operating time of the process vents, the capture system and the oxidizer-scrubber system.

Findings:

Per the source, monthly/annual records of feedstock and naphthalene information are maintained and available upon request.

Maintain the following logs or other records for the oxidizer-scrubber system:

- An operating log, including periods when the units controlled by the oxidizer-scrubber system are operated, with dates, duration and description of any outages of the system during such periods, as required by 35 IAC 218.991(a)(2)(C).
- An inspection, maintenance, and repair log(s) for system detailing all activities performed, including dates and description, as required by 35 IAC 218.991(a)(2)(B).

Findings:

Per the source, records of operating logs, with dates, duration and description of any outages; and inspection details with maintenance and repair log(s) performed are maintained and available upon request. Maintenance sheets are completed, which are used to organize and maintain all maintenance on the equipment.

Maintain records of NO_x, CO, PM/PM₁₀/PM_{2.5}, SO₂ and VOM emissions of the process vents and oxidizer-scrubber system:

- Records for upsets of operating units controlled by the oxidizer-scrubber system or the oxidizer-scrubber system that could generate additional emissions, with a description of the incident, explanation, and corrective actions and any preventative measures taken, and an estimate of the additional emissions that occurred.
- Records for NO_x, CO, PM, PM₁₀/PM_{2.5}, SO₂ and VOM, (tons/month and tons/year) emissions, from the following, based on appropriate emission factors or rates and operating data:
 - The oxidizer-scrubber system.
 - The process vents that did not occur through the oxidizer-scrubber system.

Findings:

Per the source, monthly and annual pollutant records from the process vents and oxidizer-scrubber system, with any instances of any upsets from the operating units are maintained and available upon request.

REPORTING REQUIREMENTS:

For the process vents, the facility shall fulfill all applicable reporting requirements of 40 CFR 63.118.

Findings:

All applicable reporting requirements of 40 CFR 63.118 have been submitted by the facility and available upon request.

EMISSION LIMITATIONS:

- The hourly emissions of units that are controlled by the oxidizer-scrubber system and of the new process heater for the naphthalene column shall not exceed the following limits. For this purpose, in Configuration 1, the process heater is controlled by the SCR and SO₂ scrubber; in configuration 2, the process heater is only controlled by the SCR, with the flue gas from the SCR then going directly to the main stack.

Pollutant	Construction Limits (Pounds/Hour)		ACTUAL Emissions (Pounds/Hour)	
	Limits (Pounds/Hour)		Emissions (Pounds/Hour)	
	Configuration 1 (SCR & Scrubber)	Configuration 2 (SCR Only)	Configuration 1	Configuration 2
NO _x	5.61	5.61	2.75	2.75
CO	12.66	5.86	5.81	5.81
VOM	3.97	0.21	1.9	0.09
SO ₂	0.17	0.04	0.17	0.03
PM	1.60	0.56	1.1	0.28
PM ₁₀ /PM _{2.5}	1.60	0.56	1.1	0.28

Findings:

The source provided the emissions in the table above; however, it is unclear where these emissions came from since they do not match the test report results. Additionally, since the thermal oxidizer TO-5 is responsible for controlling VOM and the scrubber is responsible for controlling SO₂, the VOM and SO₂ emissions may have been exceeded while the scrubber and thermal oxidizer parameters were not operated within the required ranges.

Therefore, the author recommends the following violation:

- Section 9(b) of the Act and Condition 2.1.5 (a) of Construction Permit # 14100012:
Koppers Carbon Materials LLC may have caused or allowed the emissions of volatile organic material (VOM) and sulfur dioxide (SO₂) from the emission units that are controlled by the oxidizer-scrubber system and of the process heater in Configurations 1 and 2 to exceed the following emissions limits in Conditions #2.1.5 (a) of Construction Permit # 14100012:
 - a. Configuration 1:
 - i. VOM: 3.97 lbs/hr
 - ii. SO₂: 0.17 lbs/hr
 - b. Configuration 2:
 - i. VOM: 0.21 lbs/hr
 - ii. SO₂: 0.04 lbs/hr
- The combined emissions of units that are controlled by the oxidizer-scrubber system and of the process heater when venting through the scrubber shall not exceed the following limits. [Configuration 1]

Pollutant	Construction Limits (Tons/Mo)		ACTUAL LIMITS (Tons/Yr)	
	Limits			
	Tons/Month	Tons/Year	Tons/Month	Tons/Year
NO _x	2.08	16.64	1.18	13.02
CO	4.76	38.11	2.35	26.04
VOM	1.09	8.72	0.7	7.6
SO ₂	0.09	0.76	0.06	0.71
PM	0.86	6.88	0.42	4.65
PM ₁₀ /PM _{2.5}	1.60	6.88	0.42	4.65

Findings:

Since the thermal oxidizer TO-5 is responsible for controlling VOM and the scrubber is responsible for controlling SO₂, the VOM and SO₂ emissions may have been exceeded while the scrubber and thermal oxidizer parameters were not operated within the required ranges, as described previously. Therefore, the author recommends the following violation:

- Section 9(b) of the Act and Condition # 2.1.5(b) of Construction Permit # 14100012:
Koppers Carbon Materials LLC may have caused or allowed the combined emissions of volatile organic material (VOM), and sulfur dioxide (SO₂) from the emission units that are controlled by the oxidizer-scrubber system and of the process heater when venting through the scrubber to exceed the following emissions limits in Condition #2.1.5(b) of Construction Permit # 14100012:
 - i. VOM: 1.09 tons/month and 8.72 tons/yr
 - ii. SO₂: 0.09 tons/month and 0.76 tons/yr

EVALUATION # 2-2*(Section 2.2 of Construction Permit, App. No. 14100012)***Storage Vessels**

Storage Tanks	Material Storage Tanks (T649 - 651)	Fume Scrubber (#2)/Thermal Oxidizer (TO 1-4) Tar Plant Thermal Oxidizer
	Material Storage Tanks (T662 & 663)	
	Light Oil Tank (T667)	
	Methyl Naphthalene Tank (T664)	
	Off-Spec Naphthalene Tank (T665)	
	Solvent Tanks (T660 & 661*)	
	Intermediate Tank (T654)	
	Wastewater Storage Tank (T678)	

Various storage tanks will be constructed to store organic liquids, including feedstock, intermediate materials and final products, for the plant. Except during periods of planned maintenance of the control equipment or as allowed by the NESHAP, the OM emissions from these tanks will be controlled by either the new oxidizer-scrubber system or by the existing fume scrubber-oxidizer system.

A storage tank will also be constructed to hold wastewater from the plant. The OM emissions from this tank will be controlled by the existing fume scrubber-oxidizer system for the Tar Plant.

*NOTE: Tank 661 was not constructed

INSPECTION FOCUS and FINDINGS**APPLICABLE EMISSION STANDARDS:**

Each storage vessel is subject to the NESHAP for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) for Process Vents, Storage Vessels, Transfer Operations, and Wastewater, 40 CFR 63 Subpart G. [40 CFR 63.119(a)]

- For each storage vessel storing a liquid for which the maximum true vapor pressure of the total organic HAPs in the liquid is less than 76.6 kilopascals, the facility shall reduce HAPs emissions to the atmosphere either by operating and maintaining a closed vent system and control device, routing the emissions to vapor balancing in accordance with the requirements in 40 CFR 63.121(b), (c), (d), (e), (f), or (g).
- For each storage vessel storing a liquid for which the maximum true vapor pressure of the total organic HAPs in the liquid is greater than or equal to 76.6 kilopascals, the facility shall operate and maintain a closed vent system and control device meeting the requirements specified in 40 CFR 63.121(e), route the emissions to a vapor balance as specified in 40 CFR 63.121(g).

Findings:

All the above tanks are vented to the source's Tar Plant Thermal Oxidizer (TO 1-4).

- Storage vessels T649, T650, T651, T652, T653 and T665 are subject to the requirement of the NSPS 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 Kb.

Findings:

Records of naphthalene tanks information are maintained and available upon request.

40 CFR 60 Subpart Kb, or NSPS Kb, regulates volatile organic compound (VOC) emissions from certain large storage vessels that were constructed, reconstructed, or modified after July 23, 1984, and on or before October 4, 2023.

40 CFR 60 Subpart Kb, or NSPS Kb, establishes performance standards and specific requirements for controlling VOC emissions, such as mandating certain types of floating roofs with seals, or a closed-vent system routed to a control device. Tanks were constructed, reconstructed, or modified after July 23, 1984, and on or before October 4, 2023.

- The storage vessels are subject to the control requirements of 35 IAC 218.122(b) and (c), which requires a permanent submerged loading pipe, or an equivalent device approved by the Illinois EPA unless the vapor pressure of the liquid is less than 2.5 psia at 70 °F. The Illinois EPA has not approved any such alternative devices.

Findings:

Per the source, vapor pressure of liquids stored are less than 2.5 psia.

OPERATIONAL REQUIREMENTS:

Pursuant to 40 CFR 63.119(e), for the storage vessels, the oxidizer scrubber system shall be designed and operated to reduce inlet emissions of total organic HAP by 95 percent or greater, except as provided below:

- Periods of planned routine maintenance of the control device, during which the control device does not meet the above requirement, which shall not exceed 240 hours per year. [40 CFR 60.119(e)(3) and (4)].
- During a control system malfunction. [40 CFR 60.119(e)(5)].

Findings:

The latest stack test for the Tar Plant Thermal Oxidizer, was February 8, 2023.

Testing consisted of determining the emission rates of THC at the inlet and outlet of the Tar TO. The results showed the HAP reduction efficiency was 99.8% which meets the requirement above.

The results are summarized below:

Run Number	Run 1	Run 2	Run 3	Average
Date	2/8/23	2/8/23	2/8/23	--
Total Hydrocarbon Data				
Inlet Emission Rate, lb/hr	259.8	257.6	239.9	252.4
Outlet Emission Rate, lb/hr	0.48	0.60	0.64	0.57
Reduction Efficiency, %	99.8	99.8	99.7	99.8
Limit, %	--	--	--	≥ 98
Control System Data				
Run Number	Run 1	Run 2	Run 3	Average
Date	2/8/23	2/8/23	2/8/23	--
TO Firebox Temperature, °F	1,405.0	1,404.9	1,405.3	1,405.1

MONITORING REQUIREMENTS:

For the storage vessels, the facility shall either prepare a design evaluation, which includes the information in 40 CFR 63.120(d)(1)(i) or submit the results of a performance test as described in 40 CFR 63.120 (d)(1)(ii). [40 CFR 63.120(d)]

Findings:

The design evaluation includes documentation demonstrating that the control device being used achieves the required control efficiency during reasonably expected maximum filling rate. This documentation includes a description of the gas stream which enters the control device, including flow and organic HAP content under varying liquid level conditions, and other information specified in paragraphs (d)(1)(i)(A) through (E) of this section, as applicable.

Stack tests of the Naphthalene Thermal Oxidizer (Naph-TO) and the Tar Thermal Oxidizer (TAR-TO) have been performed and the results are maintained and available upon request.

RECORDKEEPING REQUIREMENTS:

- Keep records of the dimensions of the storage vessels and an analysis showing the capacity of the vessels.
- For the Tar TO system, the facility shall keep in a readily accessible location the following records:
 - A record of the measured values of the parameters monitored in accordance with 40 CFR 63.120(d)(5).
 - Records of maintenance performed on the control device including the duration of each time the control device does not meet the specifications of 40 CFR 63.119 (e)(1) or (e)(2), as applicable, due to the planned routine maintenance. Such a record shall include the information specified in 40 CFR 63.123(f)(2)(i) and (f)(2)(ii).

Findings:

Records of dimensions and capacity of liquid stored are maintained.

Records of parameters and maintenance performed for the Tar TO system are maintained.

- For each storage vessel, the facility shall maintain records of the following:
 - Identification of material stored.
 - Vapor pressure of each material stored.

Findings:

Identification and vapor pressure of material stored are maintained.

REPORTING REQUIREMENTS:

For the storage vessels, the facility shall fulfill all applicable reporting requirements of 40 CFR 63.122.

Findings:

All applicable reporting requirements of 40 CFR 63.122 have been submitted by the facility and available upon request.

EVALUATION # 2-3*(Section 2.3 of Construction Permit, App. No. 14100012)***Truck and Railcar Transfer Racks**

Naphthalene Loadout	Truck Loading Rack (LR-1)	Oxidizer-Scrubber System (TO-5/CD-1)
	Truck Loading Rack (LR-2)	Thermal Oxidizer (TO 1-4)
	Railcar Loading Racks (RCL-1 through RCL-6)	Tar TO

One (1) existing truck loading racks (LR-1), one (1) new truck loading rack (LR-2), five (5) existing railcar loading racks (RCL-1 through RCL-5), and one (1) reactivated railcar loading rack (RCL-6) would be utilized for the loadout of material from the plant.

The emissions of VOM from LR-1 would be controlled by Oxidizer-Scrubber System TO-5/CD-1.

The emissions of the other loading racks when loading out Naphthalene would be controlled by the existing Tar Plant Thermal Oxidizer TO 1-4.

Only 1 rack from RDL-1 through RCL-6 is used for rail loading.

INSPECTION FOCUS and FINDINGS**APPLICABLE EMISSION STANDARDS:**

The transfer operation is subject to the NESHAP for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) for Process Vents, Storage Vessels, Transfer Operations, and Wastewater 40 CFR 63 Subpart G. For the transfer operation, the facility shall meet the applicable requirements of "Group 1 transfer racks" in 40 CFR 63.126 through 40 CFR 63.130.

- The facility shall equip the transfer operation with a vapor collection system and control device.
 - As generally provided by 40 CFR 63.126(a)(1) through (3), the vapor collection system shall be:
 - Designed and operated to collect the organic HAPs vapors displaced from tank trucks during loading, and to route the collected HAPs vapors to a control device as provided in Condition 2.3.2(a)(ii). [40 CFR 63.126(a)(1)]
 - Designed and operated such that organic HAP vapors collected at one loading arm will not pass through another loading arm in the rack to the atmosphere.
 - Whenever organic HAPs emissions are vented to a control device, the control device shall be operating.
- As generally provided by 40 CFR 63.126(b)(1) for the control system, the emissions of total organic HAPs shall be reduced by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent. For combustion devices, the emission reduction or concentration shall be calculated on a dry basis, corrected to 3-percent oxygen, and compliance can be determined by measuring either organic HAPs or total organic carbon using the procedures in 40 CFR 63.116.

Findings:

The transfer operation is controlled by thermal oxidizer TO-5. Since the TO-5 was not tested for HAP, per USEPA Method 18 as required by NESHAP Subpart G, in the September 2020 stack test, as described in Evaluation #2-1 above, the author recommends the following violation:

- *Sections 9(b) and 9.1(d) of the Act, 40 CFR 63.126(b)(1) and Condition 2.3.2(a)(ii) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have failed to ensure emissions of total organic HAPs are reduced by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent.*

Of the RCL-1 through RCL-6 racks, the source currently only operates one of the racks. Therefore, HAP vapors collected at one loading arm are not routed to another loading arm.

The latest stack test for the Tar Plant Thermal Oxidizer(TO 1-4), was February 8, 2023.

Testing consisted of determining the emission rates of THC at the inlet and outlet of the Tar TO. The results showed the HAP reduction efficiency was 99.8% which meets the requirement above.

The results are summarized below:

Run Number	Run 1	Run 2	Run 3	Average
Date	2/8/23	2/8/23	2/8/23	—
Total Hydrocarbon Data				
Inlet Emission Rate, lb/hr	259.8	257.6	239.9	252.4
Outlet Emission Rate, lb/hr	0.48	0.60	0.64	0.57
Reduction Efficiency, %	99.8	99.8	99.7	99.8
Limit, %	..	..	..	≥ 98
Control System Data				
Run Number	Run 1	Run 2	Run 3	Average
Date	2/8/23	2/8/23	2/8/23	—
TO Firebox Temperature, °F	1,405.0	1,404.9	1,405.3	1,405.1

- The facility shall only load organic HAPs into tank trucks and railcars which:
 - Have a current certification in accordance with the U. S. Department of Transportation pressure test requirements of 49 CFR Part 180 for tank trucks and 49 CFR 173.31 for railcars; or
 - Have been demonstrated to be vapor-tight within the preceding 12 months, as determined by the procedures in 40 CFR 63.128(f). Vapor-tight means that the truck or railcar tank will sustain a pressure change of not more than 750 pascals within 5 minutes after it is pressurized to a minimum of 4,500 pascals.

Findings:

All trucks and railcars are leased.

The leasing companies maintain documentation required by the construction permit conditions [(2.3.2.(b))].

- The facility shall only load organic HAPs to tank trucks or railcars equipped with vapor collection equipment that is compatible with the transfer rack's vapor collection system.

Findings:

Only naphthalene is loaded thus no compatibility issues.

Previously, the source was able to load product from the PAA plant, but that portion of the plant was ceased in April 2025.

- The facility shall ensure that no pressure-relief device in the transfer rack's vapor collection system or in the organic HAPs loading equipment of each tank truck or railcar shall begin to open during loading. Pressure relief devices needed for safety purposes are not subject to this requirement.

Findings:

There are no pressure relief devices on the loading racks.

- Each valve in the vent system that would divert the vent stream to the atmosphere, either directly or indirectly, should be secured in a non-diverting position using a carseal or a lock-and-key type configuration, or shall be equipped with a flow indicator. Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, and pressure relief devices needed for safety purposes are not subject to this requirement.

Findings:

There are no vents to atmosphere on this system.

OPERATIONAL REQUIREMENTS:

- The maximum operating temperature of the naphthalene being loaded out at the transfer operation shall not exceed 250 °F on an hourly block average. This temperature shall be continuously monitored and recorded.

Findings:

*Records of temperatures for naphthalene loaded in the transfer operation are maintained and available upon request.
Review of the temperature requirement records were within limits and did not exceed 250 °F.
Naphthalene loading began after Phthalic Anhydride Plant (PAA) permanently ceased operations in April, 2025.*

- ○ For LR-1, VOM emissions shall be controlled by thermal oxidizer-scrubber system TO-5.
- For LR-2 and RCL-1 through RCL-6, VOM emissions when loading out Naphthalene shall be controlled by the Tar Plant Thermal Oxidizer System TO 1-4.

Findings:

LR-1 is in operation.

LR-2 is used to load trucks and ISO-containers but not load railcars.

Of the RCL-1 through RCL-6 racks, the source currently only operates one of the racks.

LR-2 and RCL-1 through RCL-6 are routed to TO 1-4.

- For the transfer operation, each loading rack must be equipped with an interlock that automatically prevents the loadout of material when the associated control device is not operating or not operating properly, e.g., when the thermal oxidizer is not operating at or above the set point temperature established by Condition 2.1.4(a)(iii).

Findings:

The facility installed a control system that prevents the loading of naphthalene when the Tar TO is not in operation.

Since the loading rack operation began in April 2025, there have not been any instances where the loading racks where vented to the Tar TO when the Tar TO was not in operation.

The TO-5 is also equipped with an interlock for loadout from LR-1.

- The transfer operation and associated control systems shall be operated in accordance with good air pollution control practices to minimize emissions, including the following practices:
 - All loading and vapor return lines shall be equipped with fittings that are designed to be liquid and vapor tight.
 - The transfer racks shall be operated in a manner that prevent avoidable leaks of liquid during loading and any liquid drainage from the loading devices when a rack is not in use.

Findings:

Per the source, the above design criteria have been met.

RECORDKEEPING REQUIREMENTS:

The facility shall maintain records of the following items for each transfer operation:

- Operating records for each day on which loadout is conducted, as follows:
 - Date and amount of each material loaded (gallons/day, gallons/month and gallons/year).
 - Confirmation that established operating procedures were followed.

Findings:

Operating records of dates and amounts of the Naphthalene Loading, Temperatures and Emissions of VOM from Naphthalene Transfer Operations, measured at the outlet of the control systems for LR-2 and RCL-1 emissions combined operating units are maintained and available upon request.

- Records for each event when loadout continues when the associated control device is not operating properly to control VOM emissions:
 - Date, time, and duration of event.
 - Description of event.
 - Estimated amount of material loaded until the situation was corrected or loadout ceased.
 - Reason why loadout could not be immediately ceased.
 - Corrective actions taken.
 - Actions taken to prevent or reduce the likelihood of future occurrences.

Findings:

The source did not provide any records of events described above.

Since the minimum combustion chamber temperature on TO-5 was not met for 86 hours from Jan 2024 through Aug 2025, as described in Evaluation #2-1 above, the author recommends the following violation:

- Section 9(b) of the Act and Condition # 2.3.5(b)(i)-(vi) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have failed to maintain records for each event when loadout continues when the thermal oxidizer TO-5 is not operating properly to control VOM emissions.

REPORTING REQUIREMENTS:

- For the transfer operation, the facility shall fulfill all applicable reporting requirements of 40 CFR 63.129 and 63.130.
- The facility shall notify the Illinois EPA within 30 days of first loading out naphthalene to a truck(s) and/or railcar(s) pursuant to this revised construction permit.

Findings:

- All applicable reporting requirements of 40 CFR 63.129 and 63.130 have been submitted by the facility and available upon request.
- The facility notified the Illinois EPA within 30 days of the first loading out of naphthalene. Naphthalene wasn't loaded out on railcar, truck or iso-container until the PAA plant was shut down. Therefore, April 2025 was the first loading out of railcar, truck or iso-container. Before that all naphthalene went to the PAA plant to make PAA.

EMISSION LIMITATIONS:

- Emissions of VOM from the transfer operation, as measured at the outlet of the control systems. These limits do not address uncaptured emissions that are not reduced at the control systems.

Construction Permit Limits		ACTUAL Limits	
tons/month	tons/year	tons/month	tons/year
0.1	0.31	0.0029 - June 2025	0.0097 - 01/25 through 08/25

Findings:

The facility maintains emissions of VOM from Naphthalene Transfer Operations, measured at the outlet of the control systems for LR-1, LR-2 and RCL-1 emissions combined. However, since the minimum combustion chamber temperature on TO-5 was not met for 86 hours from Jan 2024 through Aug 2025, as described in Evaluation #2-1 above, the emission limits may not have been met. The author recommends the following violation:

- Section 9(b) of the Act and Condition # 2.3.4(b) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have caused or allowed VOM emissions from the transfer operation to exceed 0.1 tons/month and 0.31 tons/year.
- Uncaptured emissions of VOM from the transfer operation:

Construction Permit Limits	ACTUAL Limits
tons/year	tons/year
0.2	N/A-None provided

Findings:

The source did not provide record of uncaptured emissions of VOM from the transfer operation. Therefore, the author recommends the following violation:

- Section 9(b) of the Act and Condition # 2.3.4(c) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have caused or allowed uncaptured emissions of VOM from the transfer operation to exceed 0.2 tons/year.

EVALUATION # 2-4

(Section 2.4 of Construction Permit, App. No. 14100012)

Process Heater

Process Heater (34 mmBtu/hour)	Process Heater for the Naphthalene Column (RB-1)	Configuration 1: Mercury Removal System, SCR System (SCR-1) and SO₂ Scrubber (CD-1) (controlled by the SCR, SO₂ scrubber systems and the liquid fuel mercury removal system) Configuration 2: SCR System (SCR-1) (the flue gas from the SCR system would go directly to the main stack) <u>ONLY #2 USED</u>
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A new fuel-fired process heater will provide heat to the bottom of the naphthalene distillation column. The heater will be designed to burn natural gas and co-products from the plant. The heater will be equipped with low-NO_x burners and a selective catalytic reduction (SCR) system for control of NO_x emissions. When firing co-products, a liquid fuel mercury removal system will be utilized. The mercury removal system will be installed ahead of the heater. This system consists of three (3) vessels designed in a lead-lag-spare configuration and will use a series of coated activated carbon beds to remove mercury from liquid co-products fired in the heater. The lead and lag vessel will be in operation when firing co-products, with one spare vessel. The vessels will be rotated as the carbon bed in the lead vessel is spent.

Emissions of SO₂, which would be associated with firing of co-products, will be controlled by the SO₂ scrubber, and emissions of mercury, which would be associated with firing co-products, will be controlled with the liquid fuel mercury removal system. The co-products from the plant meet the definition of heavy liquid fuels in 40 CFR 63 Subpart DDDDD.

The heater would be able to operate in two configurations. In Configuration 1, this heater will fire co-products and will be controlled by the SCR, SO₂ scrubber systems and the liquid fuel mercury removal system. In Configuration 2, which would be associated with burning only natural gas in this heater, the flue gas from the SCR system would go directly to the main stack. The mercury removal system would only be in operation when the affected heater is operating in Configuration 1.

NOTE: Since inception, the source has not burned any co-products in their Process Heater (only burns natural gas). Thus, only Configuration 2 is utilized.

INSPECTION FOCUS and FINDINGS

APPLICABLE EMISSION STANDARDS:

- Heater is subject to the NESHAP for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63 Subpart DDDDD (the Boiler NESHAP) and the applicable requirements of the General Provisions of the NESHAP, 40 CFR 63 Subpart A.
- Periodic tune-ups of the heater conducted with 40 CFR 63.7540(a)(10) and/or 63.7540(a)(13), as applicable.
 - 40 CFR 63.7540(a)(12): If your boiler or process heater has a continuous oxygen trim system that maintains an optimum air to fuel ratio, or a heat input capacity of less than or equal to 5 million Btu per hour and the unit is in the units designed to burn gas 1; units designed to burn gas 2 (other); or units designed to burn light liquid

subcategories, or meets the definition of limited-use boiler or process heater in § 63.7575, you must conduct a tune-up of the boiler or process heater every 5 years as specified in paragraphs (a)(10)(i) through (vi) of this section to demonstrate continuous compliance.

Findings:

- *The facility establishes national emission limitations and work practice standards for hazardous air pollutants (HAPs) emitted from process heaters located at major sources of HAPs.*
- *Periodic tune-ups are made with latest made on April 30, 2024, which included:*
 - *Inspection of burner, flame pattern and air-to-fuel ratio control system.*
 - *Optimize emission of carbon monoxide (CO).*
 - *Measure CO and O₂ levels in exhaust, before and after tune-up.*
- Unless the heater has been operated to qualify as a "Unit designed to burn gas 1 fuel" as defined by 40 CFR 63.7575, pursuant 40 CFR 63.7500(a)(1), the facility shall comply with all applicable requirements of emission limits and work practice standards in the Boiler NESHAP for "Units designed to burn liquid fuel" and "Units designed to burn heavy liquid fuel," including:
 - Prior to October 6, 2025, applicable emission limits per Table 14, Items 14 and 15 of the Boiler NESHAP, as follows:

Pollutant	Applicable limit, except during startup and shutdown...
HCl	0.00044 lb per mmBtu of heat input
Mercury	0.00000048 lb per mmBtu of heat input
CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen
Filterable PM (or TSM*)	0.013 lb per mmBtu of heat input; or (0.000075 lb per mmBtu of heat input)
* Total Selected Metals	

- On and after October 6, 2025, applicable emission limits per Table 1, Items 14 and 15 of Boiler NESHAP, as follows:

Pollutant	Applicable limit, except during startup and shutdown...
HCl	0.00015 lb per mmBtu of heat input
Mercury	0.00000048 lb per mmBtu of heat input
CO	130 ppm by volume on a dry basis corrected to 3 percent oxygen
Filterable PM (or TSM)	0.0019 lb per mmBtu of heat input; or (0.0000061 lb per mmBtu of heat input)

Findings:

The source does not burn co-products in their process heater, therefore, they are not subject to the above emission limits.

- The applicable work practice standards in Table 3 of the Boiler NESHAP that apply during startup and shutdown of a unit that is subject to emission limits pursuant to the Boiler NESHAP.

Table 3:

If your unit is . . .	You must meet the following . . .
5. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or 11 through 15 to this subpart <u>during startup</u>	b. For startup of a boiler or process heater, you must use one or a combination of the following clean fuels: <u>natural gas</u> , synthetic natural gas, propane, other Gas 1 fuels, distillate oil, syngas, ultra-low sulfur diesel, fuel oil-soaked rags, kerosene, hydrogen, paper, cardboard, refinery gas, liquefied petroleum gas, clean dry biomass, and any fuels meeting the appropriate HCl, mercury and TSM emission standards by fuel analysis.

6. An existing or new boiler or process heater subject to emission limits in Table 1 or 2 or Tables 11 through 15 to this subpart during shutdown

You must operate all CMS during shutdown.

While firing fuels that are not clean fuels during shutdown, you must vent emissions to the main stack(s) and operate all applicable control devices, except limestone injection in FBC boilers, dry scrubber, fabric filter, and SCR but, in any case, when necessary to comply with other standards applicable to the source that require operation of the control device.

Findings:

Tune-ups of boilers are conducted every 5 years as specified in 40 CFR 63.7540 demonstrating continuous compliance with the emission limitations, fuel specifications and work practice standards. Latest Tune-up and Compliance Certification annual tune-up was on April 30, 2024 (V-640). The process heater only burns natural gas.

- The applicable operating limits in Table 4 of the Boiler NESHAP that apply to a unit that is subject to emission limits pursuant to the Boiler NESHAP.

Findings:

40 CFR 63.7500(e): 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 Tables 11 through 15 to this subpart, or the operating limits in Table 4 to this subpart. Since the process heater only burns natural gas, the operating limits in Table 4 are not applicable.

- Pursuant to 40 CFR 63.7510(k), if the heater switches subcategories consistent with 40 CFR 63.7545(h) after the initial compliance date, the facility must demonstrate compliance within 60 days of the effective date of the switch, unless had previously conducted the compliance demonstration for this subcategory within the previous 12 months.

Findings:

Since inception, the source has not burned any co-products in their Process Heater (only burns natural gas).

- Pursuant to 40 CFR 63.7500(a)(3), operate and maintain the heater, including associated control devices and monitoring equipment, with good air pollution control practices for minimizing emissions.

Findings:

The facility operates each process heater, including associated air pollution control equipment and monitoring equipment, with good and safe air pollution control practices for minimizing emissions. Required inspections are performed and inspections and maintenance activities are documented.

APPLICABLE STATE EMISSION STANDARDS:

- The heater is subject to 35 IAC 216.121, which provides that the emission of CO into the atmosphere from heater shall not exceed 200 ppm, corrected to 50 percent excess air.

Findings:

The source conducted stack testing on the process heater on Sept. 2020, which demonstrated CO emissions of 24.2 ppm.

Summary of Results – Reboiler/SCR Outlet

<u>Run Number</u>	<u>Run 2</u>	<u>Run 3</u>	<u>Run 4</u>	<u>Average</u>
<u>Date</u>	<u>9/29/20</u>	<u>9/30/20</u>	<u>9/30/20</u>	--
Carbon Monoxide Data				
Concentration, ppmvd	24.1	24.3	24.2	24.2
Emission Rate, lb/hr	1.0	1.1	1.1	1.1

- The heater is subject to 35 IAC 212.109 and 212.123(a), which provide that the emission of smoke or other particulate matter from the heater shall not have an opacity greater than 30 percent, except as allowed by 35 IAC 212.123(b). Compliance with this limit shall be determined by 6-minute averages of opacity readings in accordance with USEPA Reference Method 9.

Findings:

No visible emission were observed exiting the process heater stack during the walkthrough.

- When using co-products as fuel in the heater, the emissions of PM attributable to use of the co-products shall not exceed 0.10 lb/mmBtu pursuant to 35 IAC 212.207.

Findings:

The source does not burn co-products.

OPERATING REQUIREMENTS:

- Natural gas and co-products from the naphthalene process shall be the only fuels burned in the heater.

Findings:

Only natural gas is burned in the facility's process heater.

- - The co-products used as fuel in the heater shall not constitute hazardous waste as defined by 40 CFR Part 258.
 - When the heater is using co-product(s) as fuel, the facility shall not vent emissions from the heater directly to the atmosphere, bypassing the SO₂ scrubber.
 - The co-products used as fuel in the heater shall not be burned during startup of the heater.
 - The liquid fuel mercury removal system shall be used when co-products are fired in the heater AND the minimum volume of sorbent used in the mercury removal system shall be at least 2.7 cubic feet.
 - This permit is issued based on the co-products fired in the heater meeting the definitions of "liquid fuel" and "heavy liquid," pursuant to 40 CFR 63.7575.

Findings:

The source does not burn co-products.

- The rated heat capacity of the heater shall not exceed 34 mmBtu/hour.

Findings:

Process heater capacity records verify no exceedance of 34 mmBtu/hour.

EMISSION TESTING REQUIREMENTS:

- The facility shall comply with the Boiler NESHAP for emission testing, including 40 CFR 63.7520 and Table 5 of the Boiler NESHAP. In particular, initial testing while operating in the "Units designed to burn heavy liquid fuel" subcategory is required within 60 days of the effective date of the switch pursuant to 40 CFR 63.7510(k).

Findings:

The source does not burn co-products.

FUEL SAMPLING AND ANALYSIS:

- For the co-products used as fuel in the heater, the facility shall comply with the applicable requirements of the Boiler NESHAP for fuel sampling and analysis, including 40 CFR 63.7510, 63.7515, 63.7521 and Table 6 of the Boiler NESHAP.

Findings:

The source does not burn co-products.

EMISSIONS MONITORING:

- The facility shall comply with applicable requirements of the Boiler NESHAP for emissions monitoring, including 40 CFR 63.7535 thru 63.7541 and Table 8 of the Boiler NESHAP.

Findings:

The source does not burn co-products.

OPERATIONAL MONITORING AND IMPLEMENTATION:

- The facility shall comply with the applicable requirements of the Boiler NESHAP for operational monitoring, including 40 CFR 63.7535 thru 63.7541 and Table 8 of the Boiler NESHAP.

Findings:

The requirements of Table 8 are not required because the heater uses natural gas.

Maintenance and annual tune-up records are maintained and available upon request.

- The facility shall install, operate, and maintain a monitoring system on the heater for its operating load in terms of mmBtu/hour heat input. Data from this system shall be automatically recorded on an hourly average.

Findings:

The heater has a monitoring system and the facility maintains records of its hourly average.

- The facility shall install, operate, and maintain:
 - Monitoring systems on the SCR system for the SCR reagent injection rate, flue gas temperature at the inlet of the SCR system catalyst and ammonia slip. Data from these systems shall be automatically recorded on an hourly average.

Findings:

SCR system is monitored with intellution.

○ **Reagent Injection Rate:**

Design rate is 5.70 lbs/hr at 100% capacity for natural gas.

Data shows the unit operates less than that.

○ **Flue Gas Inlet Temperature:**

Greater than 150 °C and a Hi temperature interlock at 475 °C shuts off the reboiler.

○ **Ammonia Slip:**

Maximum for natural gas is 5 ppm and data shows the unit operates less than 5 ppm.

- The facility shall install, operate, and maintain instrumentation on ductwork after the SCR system on the heater where flue gas can either go to the SO₂ scrubber or directly to the main stack. This instrumentation shall indicate flow through the duct that goes directly to the main stack as either indicated by the position of the damper or shown by gas flow in the duct, as indicated directly or indirectly, e.g., by the gas temperature in this duct. Data from this instrumentation shall be automatically recorded identifying periods when flow of flue gas occurs through this vent.

Findings:

Since the source is only burning natural gas in Configuration #2, all the emissions exiting the process heater go through the SCR system to the main stack.

SAMPLING REQUIREMENTS FOR THE MERCURY REMOVAL SYSTEM:

- The facility shall perform the following sampling on a monthly basis for the first 12 months of operating the mercury removal system, provided that Condition 2.4.7-2(e)(iii) is met. If Condition 2.4.7-2(e)(iii) is not met, sampling shall be performed in accordance with Condition 2.4.7-2(e)(iv).
 - Liquid fuel into the lead bed ("Lead In").
 - Liquid fuel between the lead and lag bed ("Lead Out").
 - Liquid fuel exiting the system ("Lag Out").

Findings:

No mercury is used since only Configuration #2 burning natural gas is used.

- Following the monthly sampling required by Condition 2.4.7-2(e)(i), the "Lag out" shall be sampled monthly and the "Lead in", "Lead Out", and "Lag out" shall be sampled quarterly, provided that Condition 2.4.7-2(e)(iii) is met. If Condition 2.4.7-2(e)(iii) is not met, sampling shall be performed in accordance with Condition 2.4.7-2(e)(iv).

Findings:

No mercury is used since only Configuration #2 burning natural gas is used.

- The mercury content in the liquid fuel exiting the system ("Lag Out") shall not exceed 0.000000384 lb/mmBtu.

Findings:

No mercury is used since only Configuration #2 burning natural gas is used.

- If, during the sampling performed under Conditions 2.4.7-2(e)(i) or (ii), the requirement of Condition 2.4.7-2(e)(iii) is not met, the "lag out" shall be sampled weekly for 30 operating days. This weekly sampling period may be changed back to monthly following 30 operating days provided the requirement in Conditions 2.4.7-2(e)(iii) is met for those 30 operating days.

Findings:

No mercury is used since only Configuration #2 burning natural gas is used.

RECORDKEEPING REQUIREMENTS:

- For the heater, the facility shall maintain applicable records required pursuant to the NESHAP, 40 CFR 63.7555.
- For the heater, the facility shall maintain a file containing the following information:
 - The design heat input capacity of the heater (mmBtu/hour).
 - A demonstration that each co-product used as fuel in the heater complies with Condition 2.4.4-1(b)(ii).

Findings:

Per the source, information and records of the heater are maintained and available upon request.

- For the heater, the facility shall maintain the following records:
 - An operating log or other records that identify when the heater was operated, the fuels that were being burned and upsets or malfunctions of the heater, with description and explanation.
 - Records of the usage of fuel by the heater based on metering for usage of each type of fuel:
 - Usage of natural gas (scf/month and scf/year).
 - Usage of co-products, by type (gallons/day, gallons/month and gallons/year)
 - Records of the emissions of NO_x, CO, PM, PM₁₀/PM_{2.5}, SO₂ and VOM based on appropriate emission factors and operating data for the heater (tons/month and tons/year).

Findings:

Per the source, records of operating logs, fuel used, upsets and malfunctions for the heater and usage of natural gas and emissions of pollutant records are maintained and available upon request.

- The facility shall keep the following records for the SCR system:
 - A file containing the design NO_x emission rates of the SCR system;
The operating and maintenance procedures recommended by the manufacturer or vendor of the SCR system, including the catalyst management plan; and,
If different than the recommended procedures, the operating and maintenance procedures, including the catalyst management plan, that the facility is implementing for the SCR system.
 - Usage of SCR reagent on a monthly basis.

Findings:

Per the source, NO_x emission rates of the SCR system are maintained and available upon request.

Manufacturer operating and maintenance procedures are followed for the SCR system.

- For the mercury removal system, the facility shall keep the following records:
 - A file containing the manufacturer's specifications for the maximum mercury content, of processed co-products and the manufacturer's recommended operating and maintenance procedures for the system.
 - The facility shall maintain the following operating records:
 - Mercury concentration in liquid fuel from sampling according to Condition 2.4.7-2(e).
 - Mercury emissions (lb/mmBtu) from the heater when firing liquid co-product.
 - Throughput (gal/month and gal/year).
 - A file containing the volume of sorbent (cubic feet) used in each vessel of the system.
 - Identification of any periods when the system was not operating, including periods when the system was bypasses, or not operated properly, with a detailed explanation.
 - A file containing information for:

- The sorbent used in the system, including material or trade name, manufacturer's name and manufacturer's data for mercury removal efficiency (percent), absorption capacity (pounds sulfur compounds removed per pound of sorbent), with supporting documentation and/or calculations.
- A copy of the manufacturer's recommended operation and maintenance procedures for the system.
- A copy of the facility's operation and maintenance procedures for the system, including the procedures for disposal of spent sorbent, which procedures may incorporate the manufacturer's recommended procedures.
- An operating log or other records that include:
 - The date and results of assessments conducted at least every 30 operating days for the performance of the active media beds for control of mercury emissions, with the projected date by which sorbent media will need to be replaced. These assessments shall be based on the expected mercury content in the liquid fuel processed by the system considering the mercury content estimated in accordance with Condition 2.4.7-2(e).
 - The dates that the carbon bed is replaced, with confirmation that the system continued to operate during replacement of the sorbent, as required by Condition 2.4.4-2(b)(iv).
 - Information identifying circumstances when the Permittee's operating and maintenance procedures were not followed, with description and information discussing the reason and the effect on emissions, if any.

Findings:

The source does not burn co-products or use mercury since only Configuration #2 burning natural gas is used.

NOTIFICATION AND REPORTING REQUIREMENTS:

- Comply with the applicable notification and reporting requirements of 40 CFR 63 Subpart DDDDD (the Boiler NESHAP), including 40 CFR 63.7545 and 63.7550, respectively.

Findings:

All applicable reporting requirements of 40 CFR 63 Subpart DDDDD have been submitted by the facility and available upon request.

- Notify the Illinois EPA, if the status of the heater changes to or from a unit designed to burn natural gas for purposes of the Boiler NESHAP:
 - If the status of the process heater changes so that the unit becomes a unit designed to burn natural gas for purposes of the Boiler NESHAP, the facility shall notify the Illinois EPA within 30 days of the date that it will no longer fulfill requirements of the Boiler NESHAP that apply to a unit that is designed to burn heavy liquid fuel. The notification shall include information showing that the process heater would now qualify as a "unit designed to burn natural gas" as defined by 40 CFR 63.7575 and the date that the facility ceased or will cease complying with the applicable requirements of the Boiler NESHAP that only apply to a unit that is designed to burn heavy liquid fuel.

Findings:

Only natural gas is used; therefore, the status has not changed and reporting above has not been required.

- If the status of the process heater changes so that it is no longer a unit designed to burn natural gas for purposes of the Boiler NESHAP, the facility shall notify the Illinois EPA within 30 days. The notification shall include the date that the process heater ceased or will cease to qualify as a unit designed to burn natural and the reason(s) for this change, and the action that have been or will be taken to comply with the applicable requirements of the Boiler NESHAP that only apply to a unit that is designed to burn heavy liquid fuel.

Findings:

Only natural gas is used; therefore, the status has not changed and reporting above has not been required.

SUPPLEMENTAL INSPECTION NARRATIVE / COMPLIANCE ASSISTANCE

- Arrival at the facility at 10:00 a.m.
- Accompanied by Dan Delgado, Working Supervisor.
- No fugitive dust was noticed, and sewage smell most likely coming from Stickney Water Reclamation Plant next door (West of Koppers).
- Signed in at the guard and then proceeded to a conference room, met and joined with other the Koppers team members of the facility.
- A review of facility records including applicable regulations, emissions, recordkeeping and reporting requirements for all emission units and air pollution control equipment was made.
- After the meeting a walk-through was made to view the operations of the facility and emission units and air pollution control equipment associated in the naphthalene distillation plant project.
- No visible emissions observed from any of the various stacks of the facility.
- Slight sulfur smell was noticed during the walkthrough of the plant.
- The walkthrough of the facility showed good operating conditions.
- After the tour of the facility, the inspection ended back inside the facility offices, where a summary of the inspection was made and an explanation of the next steps to finalizing the report.

CLOSING

Departure Time: 2:30 p.m.

Violation(s) Alleged:

- Section 39.5(6)(a) of the Act and Conditions 7.6.9(a), (c)-(f) of CAAPP Permit 96030134: Koppers Carbon Materials LLC failed to maintain record of the following information for Tanks T-7 and MF-305: (p.17)
 - a. dimensions of the storage vessel and an analysis showing the capacity of the storage vessel.
 - b. identification of the material stored in each tank;
 - c. maximum true vapor pressure of each material stored in the tanks, psia;
 - d. the throughput of each affected tank, gal/mo and gal/yr; and
 - e. the monthly and aggregate annual VOM emissions for the tanks based on material stored, tank throughput, and applicable emission factors and formulas with supporting calculations.
- Sections 9(b) and 9.1(d) of the Act, 40 CFR 63.126(b)(1) and Conditions 2.1.2-1(a) and 2.3.2(a)(ii) of Construction Permit # 14100012:
Koppers Carbon Materials LLC may have failed to ensure emissions of total organic HAPs are reduced by 98 weight-percent or to a concentration of 20 parts per million by volume, whichever is less stringent. (p.18, 31)
- Sections 9(a) and 9(b) of the Act, 35 IAC 218.986(a), and Condition 2.1.2-2(b) of Construction Permit 14100012:
Koppers Carbon Materials LLC may have failed to control VOM emissions of each such emission unit using emission capture and control techniques at the naphthalene thermal oxidizer TO-5 that achieve an overall reduction in uncontrolled VOM emissions of at least 81 percent. (p.19)
- Section 9(b) of the Act and Conditions 2.1.4(a)(iii)-(v) of Construction Permit 14100012:
Koppers Carbon Materials LLC failed to operate the thermal oxidizer TO-5 in accordance with the following control requirements and work practices: (p.20)
 - a. During periods when an affected process vent is in operation, the combustion chamber temperature of the oxidizer shall be maintained above at a temperature that is consistent with the manufacturer's recommended minimum operating

- temperature, but not less than 1400°F in the absence of an emissions test or, once testing has been conducted demonstrating compliance with applicable requirements, the minimum operating temperature during emission testing.
- b. The combustion chamber of the oxidizer shall be preheated to the manufacturer's recommended temperature, but not less than 1400°F in the absence of an emissions test or a temperature that is consistent with the most recent emission test in which compliance was demonstrated, prior to sending feedstock to the process equipment.
 - c. The facility shall operate and maintain the oxidizer in accordance with written procedures developed and maintained by the facility. These procedures shall provide for good air pollution control practices to minimize emissions and shall include the facility's standard operating procedures for startup, normal operation, and shutdown of the emission units venting to the oxidizer.
- Section 9(b) of the Act and Conditions 2.1.4(b)(i)(A)-(D) of Construction Permit 14100012: Koppers Carbon Materials LLC may have failed to maintain the scrubber at levels that are consistent with levels at which emission testing demonstrated compliance with applicable requirements for the following parameters: (p.22)
 - a. A. Minimum scrubber water flow rate: hourly average.
 - b. Maximum scrubber water outlet temperature: °F, hourly average.
 - c. C. Maximum scrubber exhaust gas outlet temperature: °F, hourly average.
 - d. Type and minimum usage rate of scrubbant additive other than caustic: gallons/day.
 - Section 9(b) of the Act and Condition 2.1.4(b)(ii) of Construction Permit 14100012: Koppers Carbon Materials LLC may have failed to maintain the scrubber differential pressure within the normal operating range and may have failed to inspect the scrubber within 24 hours and initiate appropriate corrective action to restore the pressure drop of the scrubber to the normal range. (p.23)
 - Section 9(b) of the Act and Conditions 3.1(a)(iii)(A) and 3.1(a)(iii)(B) of Construction Permit 14100012: Koppers Carbon Materials LLC failed to have emissions testing conducted for the destruction efficiency of the TO-5 within 180 days of initial startup of the affected transfer operation, and failed to conduct subsequent testing at least once every 60 months. (p.24)
 - Section 9(b) of the Act and Condition 2.1.8(b)(i)(D) of Construction Permit 14100012: Koppers Carbon Materials LLC failed to maintain records of the following items for the oxidizer-scrubber system: the values of the key operating parameters and range of pressure drop for the scrubber within which the scrubber will be operated. (p.25)
 - Section 9(b) of the Act and Condition 2.1.5 (a) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have caused or allowed the emissions of volatile organic material (VOM) and sulfur dioxide (SO₂) from the emission units that are controlled by the oxidizer-scrubber system and of the process heater in Configurations 1 and 2 to exceed the following emissions limits in Conditions #2.1.5 (a) of Construction Permit # 14100012: (p.27)
 - a. Configuration 1:
 - iii. VOM: 3.97 lbs/hr
 - iv. SO₂: 0.17 lbs/hr
 - b. Configuration 2:

	v. VOM: 0.21 lbs/hr vi. SO₂: 0.04 lbs/hr - Section 9(b) of the Act and Condition # 2.1.5(b) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have caused or allowed the combined emissions of volatile organic material (VOM), and sulfur dioxide (SO₂) from the emission units that are controlled by the oxidizer-scrubber system and of the process heater when venting through the scrubber to exceed the following emissions limits in Condition #2.1.5(b) of Construction Permit # 14100012: (p.27) i. VOM: 1.09 tons/month and 8.72 tons/yr ii. SO₂: 0.09 tons/month and 0.76 tons/yr - Section 9(b) of the Act and Condition # 2.3.5(b)(i)-(vi) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have failed to maintain records for each event when loadout continues when the thermal oxidizer TO-5 is not operating properly to control VOM emissions. (p.34) - Section 9(b) of the Act and Condition # 2.3.4(b) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have caused or allowed VOM emissions from the transfer operation to exceed 0.1 tons/month and 0.31 tons/year. (p.34) - Section 9(b) of the Act and Condition # 2.3.4(c) of Construction Permit # 14100012: Koppers Carbon Materials LLC may have caused or allowed uncaptured emissions of VOM from the transfer operation to exceed 0.2 tons/year. (p.34)
Recommended Action(s):	The author recommends the above violations be provided to Compliance Section for further review.
SIGNATURE	
REPORT CERTIFICATION:	

FULL COMPLIANCE EVALUATION CERTIFICATION

Inspector Name:	TOM KOLOKYTHAS	Date:	AUGUST 20, 2025
Facility Name:	KOPPERS, INC.	ID #:	031300AAJ

All Required Reports**ANNUAL REPORTS:**

[FY - 2024] – Annual Emission Report (AER) Date: APRIL 30, 2025
(per Condition 9.7 of the "Revised" CAAPP permit)

SEMI-ANNUAL REPORTS:

[FY – 2024/25] – CAAPP Semi-Annual Monitoring Report: FEBRUARY 2, 2024
CONDITION 8.6.1 OF THE "REVISED" TITLE-V – CAAPP PERMIT,
Reporting Period: July 1, 2024 – December 31, 2024

CAAPP Semi-Annual Monitoring Report: AUGUST 26, 2025
CONDITION 8.6.1 OF THE "REVISED" TITLE-V – CAAPP PERMIT,
Reporting Period: January 1, 2025 – June 30, 2025

[FY – 2024/25] - Semi-Annual "Pesticide Active Ingredient (PAI)": MARCH 3, 2025
PESTICIDE ACTIVE INGREDIENT (PAI) NESHAP, SECTION 63.1368(g),
Reporting Period: July 1, 2024 – December 31, 2024

Semi-Annual "Pesticide Active Ingredient (PAI)": AUGUST 26, 2024
PESTICIDE ACTIVE INGREDIENT (PAI) NESHAP, SECTION 63.1368(g),
Reporting Period: January 1, 2024 – June 30, 2024

[FY-2024/25] - Semi-Annual "MON MACT" Compliance Report: MARCH 23, 2025
40 CFR PART 63, SUBPART FFFF, SECTION 63.2520(e),
Reporting Period: July 1, 2024 – December 31, 2024

Semi-Annual "MON MACT" Compliance Report: AUGUST 29, 2024
40 CFR Part 63, Subpart FFFF, Section 63.2520(e),
Reporting Period: January 1, 2024 – June 30, 2024

[FY – 2024/25] – Periodic "SOCMI" Report: OCTOBER 17, 2025
SOCMI Subpart G NESHAP, Section 63.152(c),
Reporting Period: March 1, 2025 – August 31, 2025

Periodic "SOCMI" Report: APRIL 17, 2025
SOCMI Subpart G NESHAP, Section 63.152(c),
Reporting Period: September 1, 2024 – February 28, 2025

Related Evaluation Numbers: #SW

Assessment of Control Devices and Process Operating Conditions	[FY - 2024] – Annual Compliance Certification Date: <u>APRIL 26, 2025</u> RATA Date(s): <i>NON-APPLICABLE</i> Deviation Report Dates: <i>Deviations are reported upon occurrence</i> Related Evaluation Numbers: <i>#SW, #1, #2-1, #2-2, #2-3. #2-4</i>
Visible Emissions Observations	Visible Emissions Observed: <i>NONE</i> Related Evaluation Numbers: <i>NONE</i>
Facility Records and Operating Logs Reviewed	Date Records Requested: <i>AUGUST 20, 2025</i> Date Records Received: <i>OCTOBER 9, 2025</i> Related Evaluation Numbers: <i>#SW, #1, #2-1, #2-2, #2-3. #2-4</i>
Process Parameters Assessed	Parameter: <i>REACTOR TRAINS FEED RATES OF RAW MATERIAL; TANK SWITCH CONDENSERS RECOVERY EFFICIENCY; VOM FROM STORAGE VESSELS AND LOADING OPERATIONS.</i> Related Evaluation Numbers: <i>#SW, #1, #2-1, #2-2, #2-3. #2-4</i>
Control Equipment Performance Parameters Assessed	CAM Plan Sections: <i>NON-APPLICABLE</i> Any Other Control Assessment: <i>NON-APPLICABLE</i> Related Evaluation Numbers: <i>NONE</i>
Stack Tests	Dates Last Tested: <i>FEBRUARY 8, 2023 – TAR-THERMAL OXIDIZER SEPTEMBER 12, 2023 – PITCH-THERMAL OXIDIZER</i> Related Evaluation Numbers: <i>#SW, #2-1, #2-2, #2-3. #2-4</i>
Monitoring Technologies	List any monitoring technologies used or reviewed during the inspection: <i>SUBLIMATION BOXES OPERATING PRACTICES; TANK LEAK INSPECTIONS; REACTOR TRAINS OPERATIONS; THERMAL OXIDIZER OPEARATING PRACTICES AND TEMPERATURES; FUME SCRUBBER OPERATION.</i>
Timely Completion of FCE	Date of Inspection: <i>AUGUST 20, 2025</i> Date of Report: <i>JANUARY 22, 2026</i>