ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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JB PRITZKER, GOVERNOR JOHN J. KIM, DIRECTOR

MEMORANDUM

DATE: October 14, 2020

TO: Maureen Wozniak, Eric Jones, Kent Mohr and Ron Robeen

FROM: Yasmine Keppner-Bauman, Compliance Unit

RE: Proposed Compliance Commitment Agreement from
Koppers Inc.
Violation Notice A-2020-00307
I.D. 031300AAJ

Please find attached a proposed Compliance Commitment Agreement (CCA) received from the facility in response to the above-referenced Violation Notice dated August 27, 2020. This facility is requesting a meeting.

October 9, 2020

Koppers Carbon Materials & Chemicals
3900 South Laramie
Cicero, Illinois , 60804
Tel 708 656 5900
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Yasmine Keppner-Bauman
Illinois Environmental Protection Agency
Bureau of Air/Filed Operations Section
1021 North Grand Ave. East
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Springfield, IL 62794-9276

RECEIVED
STATE OF ILLINOIS
OCT 13 2020
ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

Re: Violation Notice A-2020-00307
ID: 031300AAJ

Dear Ms. Keppner-Bauman:

Koppers Inc. ("Koppers") appreciates this opportunity to provide the Illinois Environmental Protection Agency ("IEPA") with its initial response to Violation Notice A-2020-00307, which was received by Koppers on September 8, 2020. It is Koppers' intention to cooperatively participate in the Section 31 enforcement process and, if determined to be necessary, to provide IEPA with a proposed Compliance Commitment Agreement following the meeting with IEPA requested herein. Koppers willingness to participate in the Section 31 enforcement process is not, and should not be, construed as an admission of liability and Koppers expressly reserves its rights and any defenses with respect to the alleged violations.

Initial Response to Alleged Violations

Koppers, below, responds to each of the alleged violations as set forth in Exhibit A to the Violation Notice.

1. Section 39.5(6)(a) of the Act and condition 7.7.8(d)(i) of Clean Air Act Permit Program (CAAPP) permit 96030134: Koppers Inc. failed to operate the continuous emissions monitoring system (CEMS) to monitor and record sulfur dioxide (SO_2) emissions from the phthalic anhydride reactor trains to provide permanent records of the hourly average SO2 emissions based upon three minute samples of air flows and SO_2 concentrations on multiple occasions during the July - December 2019 reporting period.

Koppers' Response: Koppers recognizes that the CEMS monitor availability was a challenge during the July – December 2019 reporting period. There are two primary circumstances that contributed to CEMS monitor downtime during the reporting period. First, in April 2019 Koppers implemented a new inventory control system. Implementation of that system initially resulted in inaccurate accounting of spare parts for the CEMS at the plant. Delays in locating and procuring a spare analyzer lamp when the lamp failed during the reporting period contributed to monitor downtime. Secondly, Koppers contracts the maintenance of the CEMS to an outside contractor. Delays in scheduling service for the CEMS due to service technician availability contributed to the monitor downtime during the period. The monitor downtime dropped from 720 hours during

the period of July – December 2019, to 139 hours during the period of January 2020 – June 2020. This drop is due to improved spare parts inventory control.

Section 7.7.8.d.ii of the CAAPP permit requires that sulfur sampling and analysis be conducted within 24 hours of a sudden failure of the CEMS. Daily sampling and analysis was conducted to determine the sulfur content of the Naphthalene feed to the Phthalic Anhydride during the time the CEMS monitor was unavailable during the July – December 2019 reporting period. The results of the sampling and sulfur analysis during that period show compliance with the permit emission limits. This information is attached to this letter as Attachment 1 (Feedstock Sampling Results).

2. Section 39.5(6)(a) of the Act and condition 7.7.8(d)(ii) of CAAPP permit 96030134: Koppers Inc. failed to maintain the phthalic anhydride reactor feeds at previous feed rates on multiple occasions during the reporting period of July - December 2019 when the CEMS unit failed to monitor SO_2 as required.

Koppers' Response: Koppers recognizes that the feed rates to the PAA process increased during period when the CEMS was unavailable during the July – December 2019 reporting period. However, emission calculations based on sulfur sampling and analysis demonstrate compliance with the allowable hourly SO2 emission rate and no excess emissions occurred. Koppers is currently evaluating the procedures to eliminate situations when the CEMS is unavailable and the process feed rates are changed. This evaluation includes times when maintaining safe operation of the process during periods of CEMS monitor downtime may require an increase in one of the three feeds to the process.

3. Sections 9(b) and 9.1(d) of the Act, condition 3 of construction permit 08040005 and 40 CFR 63.2470: Koppers Inc. may have 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 multiple occasions during the July -December 2019 reporting period when the thermal oxidizer operated below temperature.

Koppers' Response: On February 27, 2020, Koppers submitted to the agency a Compliance Report for *40 CFR 63 Subpart FFFF - National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing* (MON) covering the July – December 2019 reporting period. In Table 4 of the Compliance Report, Koppers identified seven (7) periods when the daily average oxidizer temperature fell below the target temperature of 1350°F. *See* Attachment 2 (Table 4 of the MON Compliance Report).

Each of the 7 occurrences were the result of malfunctions as identified in the next-to-last column of Table 4 titled "Deviation Occurred During SSM Event? (yes/no)". Koppers understands that compliance with the emission limits and work practice standards of the MON are not required during startup, shutdown or malfunction (SSM) events as stated in 40 C.F.R. § 63.2450(a) as follows:

63.2450(a) General. You must comply with paragraphs (a)(1) and (2) of this section.

(a)(1) Except as specified in paragraph (a)(2) of this section, you must be in compliance with the emission limits and work practice standards in Tables 1 through 7 to this subpart at all times, except during periods of startup, shutdown, and malfunction (SSM), and you must meet the requirements specified in §§63.2455 through 63.2490 (or the alternative means of compliance in §63.2495, §63.2500, or §63.2505), except as specified in paragraphs (b) through (s) of this section. You must meet the notification, reporting, and recordkeeping requirements specified in §§63.2515, 63.2520, and 63.2525.

Koppers submits to the agency that operation of the pitch tanks was in compliance with the MON emission limitations at all times as required except during malfunctions. Since the SSM plan was followed during these events, Koppers was not required to meet the control requirements of the MON.

4. Section 9(b) of the Act and condition 4(b) of construction permit 08040005: Koppers Inc. may have failed to operate the thermal oxidizer for the pitch tanks to achieve at least 98% destruction efficiency for VOM on multiple occasions during the July - December 2019 reporting period when the thermal oxidizer operated below temperature.

Koppers' Response: Permit 08040005, Condition 4.b., requires that the thermal oxidizer be operated to achieve at least 98% destruction efficiency for VOM. However, Permit 08040005, Condition 9.2.3, also provides that Koppers has the duty to cease operations as follows:

Duty to Cease Operation - No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

As is summarized above in #3, there were 7 occurrences of malfunctions that caused the oxidizer to drop below the target daily average. Koppers took action following their MON SSM plan during these events to minimize emissions while trying to recover operation of the oxidizer. If recovery was not possible within a short duration, the pitch process was shut down until the oxidizer could be restarted and returned to full operation. As described in Attachment 2 (Table 4 of the MON Compliance Report), the durations to recover the oxidizer were all less than 3 hours, with the process being shut down for any occurrence when the oxidizer could not be recovered, resulting in durations of low temperatures of 3.75 and 6 hours. Koppers submits to the agency that their actions to minimize emissions or shut down the process are consistent with the requirements of Permit 08040005 Conditions 4.b and 9.2.3.

5. Section 9.1(d) of the Act and 40 CFR 63.113(a)(2): Koppers Inc. may have failed to reduce emissions of total organic hazardous air pollutants by 98 weight-percent from process vents on multiple occasions during the October 2019 - March 2020 timeframe when the naphthalene plant thermal oxidizer operated out of temperature range.

Koppers' Response: On June 3, 2020 Koppers submitted to the agency a Periodic Report for the Naphthalene Plant as required in *40 CFR 63 Subparts F, G & H-* the SOCMI NESHAP (HON). The report covered the reporting period of October 7, 2019 through April 7, 2020. In Table 1 of the Periodic Report, Koppers identified twenty three (23) periods when the daily average temperature for the oxidizer (TO-5) serving the Naphthalene plant processes and other equipment fell below the target temperature of 1436°F. *See* Attachment 3 (Table 1 of the Periodic Report).

Each of the 23 occurrences were the result of malfunctions as identified in the column of Table 1 of the Periodic Report titled "SSM Plan Followed". Koppers understands that compliance with the emission limits and work practice standards of the HON are not required during startup, shutdown or malfunction (SSM) events as stated in 40 C.F.R. § 63.102 General Standards as follows:

(a) Owners and operators of sources subject to this subpart shall comply with the requirements of subparts G and H of this part.

(a)(1) The provisions set forth in this subpart F and subpart G of this part shall apply at all times except during periods of start-up or shutdown (as defined in §63.101 of this subpart), malfunction, or non-operation of the chemical manufacturing process unit (or specific portion thereof) resulting in cessation of the emissions to which this subpart F and subpart G of this part apply.

Koppers submits to the agency that operation of the Naphthalene Plant was in compliance with the HON emission limitations at all times as required except during malfunctions. Since the SSM plan was followed during these events, Koppers was not required to meet the control requirements of the HON.

6. Section 9.1(d) of the Act and 40 CFR 63.119(e): Koppers Inc. may have failed to reduce emissions of total organic hazardous air pollutants as required for storage vessels on multiple occasions during the December 2019 and January 2020 timeframe when the tar thermal oxidizer operated out of temperature range.

Koppers' Response: Koppers identified in Table 2 of the HON Periodic Report, which is included as Attachment 4, six (6) periods when the average temperature for the oxidizer (TO1-4) dropped below the target temperature of 1400°F.

Each of the 6 occurrences were the result of malfunctions of TO1-4, and as identified in Table 2, the column titled "SSM Plan Followed", the SSM plan developed for the Naphthalene Plan was followed. Koppers understands that compliance with the emission limits and work practice standards of the HON are not required during startup, shutdown or malfunction events in accordance with 40 C.F.R. § 63.102(a)(1) and as stated in 40 C.F.R. § 63.119(e)(5) as follows:

(e)(5) The specifications and requirements in paragraphs (e)(1) and (e)(2) of this section for control devices do not apply during a control system malfunction.

Koppers submits to the agency that operation of the Naphthalene Plant Group 1 storage tanks was in compliance with the HON emission limitations at all times as required except during

malfunctions. Since the SSM plan was followed during these events, Koppers was not required to meet the control requirements of the HON.

7. Section 9.1(d) of the Act and 40 CFR 63.104(a): Koppers Inc. failed to timely monitor each heat exchange system used to cool process equipment in a chemical manufacturing process unit when it failed to conduct sampling of cooling tower CT-1 until March 2020.

Koppers' Response: Koppers discovered the applicability of 40 CFR 63.104(a) to the heat exchange system in March of 2020. Initially, Koppers identified that CT-1 was excluded from the monitoring in accordance with 40 C.F.R. § 63.104(a)(1) ("The heat exchange system is operated with the minimum pressure on the cooling water side at least 35 kilopascals greater than the maximum pressure on the process side."). Koppers immediately contracted with Environmental Monitoring Technologies, Inc. in March to start the sampling and analysis of the inlet and outlet to the heat exchange system. The first samples were taken on April 7, 2020 having results on April 14, 2020 with no leak in the cooling system identified. Therefore, no fugitive HAP emissions occurred from the cooling tower from the date of commissioning up to the sampling. To date, Koppers has completed 6 months of sampling and no leaks have been detected. Koppers will continue to conduct quarterly leak monitoring of the heat exchange system in accordance with 40 C.F.R. § 63.104(b).

Request for Meeting

Koppers believes it would be useful to meet with representatives of IEPA to discuss the alleged violations, Koppers response to those alleged violations, and the actions IEPA believes are required to address the alleged violations. Following the requested meeting, Koppers will, if necessary, supplement this initial response and submit to IEPA proposed terms for a Compliance Commitment Agreement.

Please contact Charvi Payghode, Environmental Manager, at 708-222-4688, or by e-mail Payghodeck@koppers.com, to schedule the requested meeting.

Thank you for considering this initial response to the Violation Notice and request for a meeting. We look forward to meeting with IEPA to address these matters.

Sincerely,

Seth Herring
Plant Manager

Attachments:
1 – Feedstock Sampling Results
2 – Table 4 of MON Compliance Report
3 – Table 1 of HON Periodic Report
4 – Table 2 of HON Periodic Report

Attachment 1 - Feedstock Sampling and Analysis Results

Date	Feed Stock Sulfur (wt%)	Feed Stock Feed Rate (lb/hr)	Sulfur Flow Rate (lb/hr)	SO_2 (lb/hr)
7/2/2019	0.5448	9510.96	51.82	103.63
8/30/2019	0.4992	5699.01	28.45	56.90
8/31/2019	0.5184	5720.51	29.66	59.31
9/1/2019	0.5016	5732.27	28.75	57.51
9/2/2019	0.4994	5711.93	28.53	57.05
9/6/2019	0.45	5684.10	25.58	51.16
9/7/2019	0.45	6230.64	28.04	56.08
9/8/2019	0.47	6503.64	30.57	61.13
9/9/2019	0.45	6515.32	29.32	58.64
9/10/2019	0.49	6445.89	31.58	63.17
9/11/2019	0.44	6372.16	28.04	56.08
9/12/2019	0.42	6368.53	26.75	53.50
9/13/2019	0.49	7927.07	38.84	77.69
9/14/2019	0.44	8481.71	37.32	74.64
9/15/2019	0.49	8519.45	41.75	83.49
9/16/2019	0.49	8529.46	41.79	83.59
9/17/2019	0.46	5997.50	27.59	55.18
9/24/2019	0.5448	11730.75552	63.91	127.82
9/28/2019	0.5448	11730.76	63.91	127.82
9/29/2019	0.5448	11730.76	63.91	127.82
9/30/2019	0.5448	11730.76	63.91	127.82
10/1/2019	0.5448	11730.76	63.91	127.82
10/17/2019	0.4896	11730.76	57.43	114.87
10/18/2019	0.5448	11730.76	63.91	127.82
10/21/2019	0.5448	11730.76	63.91	127.82
10/23/2019	0.5448	11730.76	63.91	127.82
10/24/2019	0.5448	11730.76	63.91	127.82
10/25/2019	0.5448	11730.76	63.91	127.82
10/26/2019	0.5448	11730.76	63.91	127.82
10/27/2019	0.5448	11730.76	63.91	127.82
10/28/2019	0.01	32.37	0.00	0.01
10/29/2019	0.4296	1581.51	6.79	13.59
10/30/2019	0.4416	4556.65	20.12	40.24
10/31/2019	0.4872	4090.45	19.93	39.86
11/1/2019	0.48	4979.43	23.90	47.80
11/3/2019	0.444	5026.75	22.32	44.64
11/4/2019	0.48	4990.18	23.95	47.91
11/5/2019	0.492	6708.58	33.01	66.01
11/6/2019	0.48	8480.13	40.70	81.41
12/20/2019	0.4416	7042.37	31.10	62.20
12/21/2019	0.47	9739.98	45.78	91.56
12/22/2019	0.4848	9101.39	44.12	88.25

When no feedstock was available for a sample the worst case was used to determine emissions.

The permit limit is 260 lb/hr.

Attachment 2- Table 4 of MON Compliance Report

TABLE 4: Summary of Deviations - MCPUs And Storage Vessels Operated with Continuous Monitoring System[1]
Reporting Period: 01 July 2019 through 31 December 2019

For each deviation from an emission limit or operating limit in an MCPU with a CMS, complete the following information [40CFR 63.2520(e)(5)(iii)]:

For each deviation from a monitored CMS parameter set for Control Device for a Storage Vessel or Low Throughput Transfer Rack, complete the following information [40CFR 63.999(c)(5)]:

List MCPU or Storage Vessel Where Deviation Occurred [2]	Identification of Control Device (if applicable)	Date of Deviation	Total Operating Time OF MCPU During this Reporting Period (Hours)	MON Compliance Value	List HAP in MCPU	Monitored Parameter (temp., pH, etc.)	Daily Avg. Value During Deviation?	Cause for Parameter to Be Outside of Range?	Corrective Action?	Duration of Deviation [4]		Summary of Deviation		Deviation Occurred During SSM Event? (yes/no)	If Not SSM Event, List One of these Categories for the Deviation Control Equipment problem (CEP); Process Problem (PP); Other Known Cause (OKC); or Unknown Cause (UC)
										Start (mm/dd/yy hh:mm:ss)	Finish (mm/dd/yy hh:mm:ss)	Total Deviation Period (hours)	Total Deviation as % of Total MCPU Operating Time in this Reporting Period (%)		
Pitch	Pitch TO	July *, 2019	2739	1350	naphthalene and polyaromatic hydrocarbons (PAHs).	Temperature	1119.29	Oxidizer fume system valve closed	Began shutdown until TO could be brought back on line	01-Jul-19 01:00:00	01-Jul-19 12:00:00	6.00	0.22%	Yes	
Pitch	Pitch TO	September 30, 2019	2739	1350	naphthalene and polyaromatic hydrocarbons (PAHs).	Temperature	1331.50	Oxidizer fume system valve closed	Began shutdown until TO could be brought back on line	29-Sep-19 22:00:00	30-Sep-19 09:00:00	3.50	0.13%	Yes	
Pitch	Pitch TO	October 12, 2019	2739	1350	naphthalene and polyaromatic hydrocarbons (PAHs).	Temperature	1313.37	Failure of fume system valve	Conducted repair	12-Oct-19 06:00:00	12-Oct-19 14:00:00	2.75	0.10%	Yes	
Pitch	Pitch TO	October 16, 2019	2739	1350	naphthalene and polyaromatic hydrocarbons (PAHs).	Temperature	1297.46	Oxidizer fume system valve closed	Corrected and resumed normal operation	16-Oct-19 07:00:00	16-Oct-19 09:00:00	2.00	0.07%	Yes	
Pitch	Pitch TO	November 5, 2019	2739	1350	naphthalene and polyaromatic hydrocarbons (PAHs).	Temperature	1330.85	Oxidizer fume system valve closed	Corrected and resumed normal operation	05-Nov-19 21:00:00	05-Nov-19 22:00:00	1.25	0.05%	Yes	
Pitch	Pitch TO	December 4, 2019	2739	1350	naphthalene and polyaromatic hydrocarbons (PAHs).	Temperature	1343.99	Oxidizer fume system valve closed	Corrected and resumed normal operation	04-Dec-19 08:00:00	04-Dec-19 09:00:00	0.75	0.03%	Yes	
Pitch	Pitch TO	December 19, 2019	2739	1350	naphthalene and polyaromatic hydrocarbons (PAHs).	Temperature	1327.62	Oxidizer fume system valve closed	Corrected and resumed normal operation	17-Dec-19 13:00:00	04-Dec-19 10:00:00	1.50	0.05%	Yes	
Total duration of Deviations due to SSM events and the total duration as a percent of the total operating time:												17.75	0.65%		
Total duration of Deviations due to Control Equipment Problems (CEP) and total duration as a percent of the total operating time:															
Total duration of Deviation due to Process Problems (PP) and total duration as a percent of the total operating time:															
Total duration of Deviations due to Other Known Causes (OKC) and total duration as a percent of the total operating time:															
Total duration of Deviations due to Unknown Causes (UC) and total duration as a percent of the total operating time:															
Total duration of CMS downtime and total duration of CMS downtime as a percent of the total operating time:															

NOTES:

1) Reporting requirements of 63.10(e)(8) for continuous emission monitoring systems (CEMS) are not required for CMS under the MON (40CFR 63.2520(e)(5)(iii)(B).

2) See Table 5 for description of each MCPU and associated CMS.

3) For CMS deviation, duration does not include times for zero (low-level) and high-level checks(40 CFR 63.2520(e)(5)(iii)(A).

4) The duration of deviation may include times when the temperature is above 1350 °F, however, the period ends when a stable temperature is achieved. The total deviation period includes only those times when the measured value is below 1350°F.

N/A = Not Applicable

Attachment 3- Table 1 of HON Periodic Report

Table 1 - Naphthalene Plant Thermal Oxidizer Out of Range Temperatures
40 CFR §63.118(f) for Process Vents
Reporting Period: October 7, 2019 - April 7, 2020

Date	Naphthalene Plant TO Temperature (°F) Limit 1436 °F	SSM Plan Followed
10/10/19	1416	Yes
10/21/19	1396	Yes
11/3/19	1425	Yes
11/7/19	1326	Yes
11/9/19	1422	Yes
11/23/19	1108	Yes
11/24/19	1116	Yes
11/25/19	1303	Yes
11/26/19	1126	Yes
11/27/19	1323	Yes
12/2/19	1371	Yes
12/11/19	1416	Yes
12/13/19	1170	Yes
1/2/20	1299	Yes
1/3/20	1422	Yes
1/7/20	1429	Yes
1/11/20	1047	Yes
1/23/20	1243	Yes
2/6/20	1382	Yes
2/8/20	1305	Yes
2/10/20	1418	Yes
2/14/20	1413	Yes
3/6/20	1405	Yes

Attachment 4- Table 2 of HON Periodic Report

Table 2 - Tar Thermal Oxidizer Out of Range Temperatures
40 CFR §63.122(g)(2) for Storage Vessels
Reporting Period: October 7, 2019 - April 7, 2020

Date	Tar TO Temperature (°F) Limit 1400 °F	SSM Plan Followed
12/2/2019	1388	Yes
12/27/2019	1374	Yes
1/9/2020	1397	Yes
1/11/2020	479	Yes
1/12/2020	92	Yes
1/13/2020	955	Yes