

July 30, 2024

097035AAQ
LOK

Illinois Environmental Protection Agency
Bureau of Air, Compliance Section (#40)
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STATE OF ILLINOIS

JUL 31 2024

ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF AIR

RE: Construction Permit No. 19100015 Quarterly Report – Q2 2024
Vantage Specialties Inc., Gurnee, IL (Facility ID 097035AAQ)

To Whom It May Concern:

Vantage Specialties Inc. (Vantage Specialties) hereby submits the Quarterly Report for Construction Permit No. 19100015, for our plant located in Gurnee, Illinois (Facility ID 097035AAQ). On December 17, 2019, Vantage Specialties received Construction Permit No. 19100015, which sets an annual cap on the Gurnee Facility's emissions of Ethylene Oxide (EO) beginning in calendar year 2020. This report is submitted pursuant to Condition 7(a) of the Construction Permit. The Construction Permit conditions that specify quarterly report details are included below, shown in italics, with our responses to each condition following in bold.

General Conditions

Construction Permit No. 19100015 requires the following:

Condition 7 (a):

The Permittee shall submit quarterly reports to the Illinois EPA that include the following information. These reports shall be submitted within 30 days of the end of each calendar quarter.

This quarterly report covers the period of April 1, 2024, to June 30, 2024. This quarterly report is being submitted within 30 days of the end of the calendar quarter (i.e., by July 30, 2024).

(i). The information required to be reported in these quarterly reports by other conditions of this permit.

This quarterly report includes the information required by Conditions 7(a), 17(b), 17(c)(ii), 22(a), and 22(b)(ii) of Construction Permit No. 19100015.

(ii). A summary of the notifications required to be submitted by other conditions of this permit for deviations from the requirements of this permit, if any, during the quarter.

Vantage Specialties did not have any deviations from the requirements of Construction Permit No. 19100015 during the reporting period. Therefore, no such notifications were submitted.

(iii). For the first, second and third quarters for a calendar year:

- 1) *The cumulative emissions of ethylene oxide in the calendar year from the affected facility in total and from affected components based on emission data collected through such period(s) and,*

Please see table below.

- 2) If cumulative emissions are more than 25, 50 or 75 percent, respectively, of the emission cap in Condition 3(a), a discussion of whether these cumulative emissions were the result of circumstances that are expected to be present in the remainder of the calendar year.

The cumulative emissions determined in accordance with the provisions of the construction permit are not more than 50% of the emission cap in Condition 3(a).

Cumulative Emissions of Ethylene Oxide for the Second Quarter of 2024

	Emission Cap (lbs/year) *	Cumulative Emissions (lbs for year-to- date)	Cumulative Emissions/ Emission Cap (%)
Affected Facility	110	23.06	20.96%
Affected Components	60	21.83	36.38%

Note: * Emission Cap per Condition 3(a) of Construction Permit No. 19100015. The cap limits emissions per calendar year.

(iv). With the quarterly report for the fourth quarter in each calendar year:

- 1) Emissions of ethylene oxide of the affected facility and from affected components for the calendar year, and
- 2) If emissions exceed the emission cap in Condition 3(a), provide the notification for the deviation from this cap pursuant to Condition 7(b)(i) in this quarterly report.

This permit condition does not apply to this quarterly report.

Affected Process Equipment

Construction Permit No. 19100015 requires the following:

Condition 17 (b):

In the quarterly reports required by Condition 7 (a), the Permittee shall provide information describing changes to the monitoring systems that are required by Conditions 13(a) and (b), if any, to improve the limit of quantification of these systems, including a description of the changes, the rationale for the changes, a description of the expected and actual result of the changes, and confirmation that the changes did not negatively affect the performance of the monitoring systems.

No changes were required by Conditions 13(a) and (b) to improve the limit of quantification of these systems during the reporting period.

Condition 17 (c)(ii):

Notifications for other deviations shall be submitted with the quarterly report.

No deviations (i.e., missed daily calibrations or other events) during the quarterly period.

Affected Components

Construction Permit No. 19100015 requires the following:

Condition 22(a):

In the quarterly reports required by Condition 7(a), the Permittee shall include the following information for each monitoring campaign for affected components completed during the quarter. To the extent that the specified information is not yet available (e.g., maintenance of components in response to the campaign is not completed), such information shall be reported in the subsequent quarterly report.

(i). General information for each monitoring campaign, including

- 1) Responsible entity;
- 2) Start and end dates;
- 3) Number of monitoring personnel;
- 4) Total number of components in the affected facility;
- 5) Number of components monitored; and
- 6) Numbers of components, by the applicable reason (e.g., not in operation or not in ethylene oxide service at the time of the campaign), that were not monitored.

Please see below for the general information for the monitoring campaigns during the reporting period.

	April	May	June
Responsible entity	Montrose Air Quality Services	Montrose Air Quality Services	Montrose Air Quality Services
Start Date	4/2/2024	5/1/2024	6/3/2024
End Date	4/5/2024	5/3/2024	6/5/2024
Number of monitoring personnel	1	1	1
Total number of components in the affected facility	768	778 ^{1, 2}	782 ²
Number of components monitored	768	778	782
Numbers of components, by the applicable reason (e.g., not in operation or not in ethylene oxide service at the time of the campaign), that were not monitored	0	0	0

Notes:

- 1) A maintenance activity in Q2 increased component count by eight additional threaded subcomponents. These eight subcomponents have been added to the inventory and included in emissions estimates. In Q3 Vantage will execute a subsequent maintenance event to seal weld these components which will result in their deletion from the component inventory because they will no longer exist as potential leak sources.
- 2) In Q2 routine monthly monitoring activities as conducted by Montrose (our third-party partner who performs the LDAR monitoring) identified one component and five subcomponents at the Gurnee facility that were not previously included in the component inventory. These are not new components but were inadvertently omitted from the original component inventory. These components are located within inches of existing components and were monitored in previous monitoring events (as per Montrose). Had these components been determined to have a leak, their

omission from the inventory would have been immediately identified and included in the inventory. These components have now been included in the site inventory. Note that although these components were identified as omitted from the inventory, they were not found to be leaking in Q2 2024. Considering this finding, we are taking the following actions:

- Review of the associated piping design reveals that the site can eliminate either the previously unidentified subcomponent or an associated subcomponent through piping revision. Accordingly, in Q3 Vantage will eliminate at least six components to maintain the site component count at no more than the inventory historic count.
- Vantage has set the expectation with Montrose that any components found during monitoring but not existing in the inventory be immediately brought to Vantage Gurnee's attention going forward.

(ii). Summary information for components that were not leaking for which maintenance was initiated as a result of the monitoring, including the numbers of components, by the type of component, for which maintenance was performed.

There were no components that were not leaking for which maintenance was initiated as a result of the monitoring during the reporting period.

(iii). Detailed information for each leaking component that was identified in the monitoring campaign, including:

- 1) Component Identifier;
- 2) Type of component;
- 3) Dates and times when the initial repair was completed and follow-up monitoring was conducted;
- 4) If further repairs were needed, dates and times when final repairs were completed and follow-up monitoring conducted, and
- 5) A description of the repair(s) that were completed for the component.

Detailed information for the leaks detected in April, May and June 2024 is provided in the following table.

Detailed Information for Each Leaking Component in Q2 2024 Monitoring Campaigns

Component Identifier (Tag Number)	Type of Component	Repair	Follow-up Monitoring	Repair Method
000394.001	Flange/Uncategorized	4/2/2024 – 10:48 AM	4/5/2024 – 11:29 AM	Tightened Bolts/Replaced Gasket
000392.001	Flange/Uncategorized	4/2/2024 – 10:22 AM	4/5/2024 – 11:27 AM	Replaced Gasket
000674.002	Connector/Threaded	4/5/2024 – 9:47 AM	4/5/2024 – 7:04 PM	Re-Tape and Tightened
000239.001	Flange/Uncategorized	5/1/2024 –	5/1/2024 –	Tightened Bolts

		12:34 PM	1:57 PM	
000437.001	Flange/Uncategorized	5/1/2024 - 3:11 PM	5/2/2024 - 7:32 AM	Tightened Bolts
000445A.001	Flange/Uncategorized	5/2/2024 - 1:25 PM	5/3/2024 - 7:47 AM	Tightened Bolts/Replaced Gasket
000445A.002	Flange/Uncategorized	5/2/2024 - 11:26 AM	5/3/2024 - 7:53 AM	Tightened Bolts/Replaced Gasket
000437.001	Flange/Uncategorized	6/3/2024 - 3:17 PM	6/5/2024 - 1:11 PM	Tightened Bolts/Replaced Gasket
000246.000	Valve/Check	6/3/2024 - 10:30 AM	6/3/2024 - 2:48 PM	Tightened/Torqued Bolts
000439.001	Flange/Uncategorized	6/4/2024 - 12:10 PM	6/5/2024 - 9:22 AM	Tightened Bolts/Replaced Gasket
000464.001	Flange/Uncategorized	6/4/2024 - 7:26 AM	6/4/2024 - 12:51 PM	Tightened Bolts
*000436.000	Valve	5/21/2024 - ~ 4:15 PM	5/21/2024 - ~ 5:15 PM	Tightened

**Leak identified by USEPA during unannounced inspection on May 21, 2024. Identified leak was repaired and monitored the same day. An emissions calculation was performed and added to the quarterly total.*

Fugitive emissions are trending at 36% of the site permit limit. For the first month of third quarter, no leaking components were identified.

Condition 22 (b)(ii):

Notifications for other deviations shall be submitted with the quarterly report.

There were no deviations from the affected component permit conditions in April, May and June 2024.

If there are any questions concerning this report, please do not hesitate to call Gurnee Environmental Engineer, Raymond Doerr, at (847) 249-6374.

Sincerely,



William Nothvogel
Site Manager

7/30/2024

Date