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DEPARTMENT OF ENVIRONMENTAL QUALITY AIR QUALITY DIVISION ACTIVITY REPORT: On-site Inspection

P102872745		
FACILITY: Corteva Agriscience LLC		SRN / ID: P1028
LOCATION: 701 Washington Street, MIDLAND		DISTRICT: Bay City
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Jacqueline Duby , Environmental Group Leader & Specialist		ACTIVITY DATE: 07/19/2024
STAFF: Nathanael Gentle	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU03 Scheduled Onsite Inspection		
RESOLVED COMPLAINTS:		

On July 19, 2024, AQD staff conducted a scheduled onsite inspection of the emission unit (EU) identified as EU03 at Corteva Agriscience, LLC, SRN P1028. The purpose of the inspection was to determine compliance with the Federal Clean Air Act; Article II, Part 55, Air Pollution Control of Natural Resources and Environmental Protection Act, 1994 Public Act 451; Michigan Department of Environment Great Lakes and Energy, Air Quality Division (AQD) Administrative Rules and Renewable Operating Permit, MI-ROP-P1028-2022d. At the time of inspection, the facility was found to be in compliance.

Facility Description and History

Corteva Agriscience, LLC is a megasite located at 701 Washington Street, Midland, Midland County, Michigan 48667. The stationary source consists of Corteva Agriscience LLC (Corteva) (SRN P1028), Clean Harbors Industrial Services (Clean Harbors) (P1028), DDP Specialty Electronic Materials US, Inc. (DDP) (SRN P1027), Nutrition & Biosciences USA 1, LLC (N&B) (P1027), The Dow Chemical Company (Dow Chemical) (SRN: A4033), Dow Silicones (SRN: A4043), and Trinseo, LLC (Trinseo) (SRN: P1025). During the July 19, 2024, inspection, compliance was evaluated for EU03.

EU03 is a 2,4-D (2,4-dichlorophenoxyacetic acid) salt herbicide process with manufacturing equipment located in the 959 building. The emission unit was permitted in PTI No. 147-20A. Equipment in the process includes reactors, distillation equipment, storage tanks, rail car loading and unloading stations, and related equipment. The tank farm and rail car station also support production of the 2,4-D salt in the EU09 process in the 489 building. Process vents for EU03 are treated by the 963THROX located in the 963 building and a backup carbon control system in EU12b. Vents from storage tanks for the 2,4-D salt product and emissions from the rail stations for loading 2,4-D salt product are vented to atmosphere.

EU03 is subject to the requirements of 40 CFR Part 63, Subparts A and MMM. Processes subject to Subpart MMM are also subject to the equipment leak provisions of 40 CFR Part 63, Subpart H, also known as the HON.

Compliance Evaluation

The permittee shall not operate equipment that causes emissions from the process vents in EU03 unless either the afterburner (FG963THROX) or the EU12b carbon adsorber system is installed, maintained, and operated in a satisfactory manner. "Process vents in EU03" includes all vents from EU03 except the following, vents from storage tanks for the 2,4-D salt product, and emissions from the rail stations for loading 2,4-D salt product, S.C.IV.1. Process vents are sent either to 963THROX or the EU12b carbon adsorber system. Vent trains are not able to be partitioned between the two control devices. Staff report process vents are primarily sent to 963THROX for control. The 963THROX is owned and operated by DDP Specialty Electronic Materials US, Inc. (DDP) (SRN P1027). In the event the 963THROX is unavailable or not operating properly, process vents are automatically redirected to the EU12b carbon adsorber system for control.

Satisfactory operation of the 963THROX shall be determined according to the requirements of FG963THROX and FGPESTICIDES and includes at least 99.9 percent destruction of organic compounds exhausted to the device, S.C.IV.1. Special Condition VI.3 states the permittee shall implement and maintain a plan identifying the operating parameters for FG963THROX that shall be obtained from the operator or owner of FG963THROX. All operating parameter data in the plan for FG963THROX shall be obtained within 30 days of the end of the month to which it pertains. A copy of the EU03 Control Device Plan was provided and reviewed. The plan was most recently updated in March 2021. Special Condition VI.3 states the plan shall be amended if the plan fails to provide adequate information to demonstrate 99.9% destruction of organic compounds. Operating parameters of the 963THROX identified to be monitored in the EU03 Control Device Plan include the following, TTU exit gas temperature, combustion air flow, scrubber flow, scrubber pH, 963 upstream vent valve position, and 963 downstream vent valve position. Operating parameters at which the 963THROX must be operated in order to meet the 99.9% destruction efficiency were determined by stack testing. As previously mentioned, 963THROX is owned and operated by DDP. Proper operation in accordance with FG963THROX and ensuring 99.9 percent destruction of organic compounds is maintained by DDP staff. Corteva staff report in the event the 963THROX were not operating properly, the vent pathway to the 963THROX is automatically closed and emissions are redirected the EU12b carbon adsorber system for control.

Operating parameter data for 963THROX for each month is provided at the end of the month to Corteva by DDP in 15-minute intervals. The data is compiled by Corteva staff into a spreadsheet as 24-hour daily averages and reviewed each month. If there are instances in the data in which operating parameter values are not within the specified ranges, Corteva staff verify EU03 vents to 963 THROX were in the closed position during those periods. Records of 963THROX 24-hour daily average operating parameter data were requested and provided for July 2023, October 2023, February 2024, and May 2024, S.C.VI.3. During the period of records reviewed, 963THROX was down for maintenance 5/1/2024 to 5/4/2024. Operating parameter data on those dates displayed 963THROX was not operating. Corteva staff verified valves for EU03 going to 963THROX were in the closed position during this period and emissions were sent to the EU12b carbon adsorber system for control. Parameters were within the ranges specified in the EU03 Control Device Plan during all other dates for the period reviewed.

During periods when the 963THROX is unavailable for emissions control, Process vents in EU03 are sent to the EU12b carbon adsorber system located near the 948 Building for control. The carbon adsorber system consists of 3 carbon beds in parallel. Satisfactory operation of the EU12b carbon adsorber system shall be determined according to the requirements of FGPESTICDES and includes attaining at least 98 percent removal of organic compounds exhausted to the device, S.C.IV.1. The carbon bed adsorption system is a small control device pursuant to the Pesticide MACT. A small control device is defined in 40 CFR 63.1361 as a control device that controls process vents, and the total HAP emissions into the control device from all sources are less than 10 tons of HAP per year. 40 CFR 63.1365 states the controlled emissions for each process vent that is controlled using a small control device, except for a condenser, shall be determined by using the design evaluation described in paragraph (c)(3)(i)(A) of this section, or by conducting a performance test in accordance with paragraph (c)(3)(ii) of this section. Corteva staff report the controlled emissions of the carbon adsorption system were determined by using design evaluation. A new design evaluation would be conducted if changes to the process were to be made. Staff report the most recent design evaluation was conducted in September 2021 as part of the PTI revision for EU03 in which the hours per 12-month rolling time period in which emissions can be sent to the carbon adsorption system were increased. The design evaluation determined under worst case emissions for the carbon adsorption system, 98% removal of organic compounds is achieved with changing the carbon beds every 24 hours of venting.

Each carbon bed in the carbon adsorption system is equipped with a timer that counts the time, in minutes, that the individual carbon bed is online. The timer is used to track when a carbon bed must be

changed. Carbon beds are manually changed out by onsite operators. The system will alarm at 1380 minutes and again at 1425 minutes if the carbon bed has still not been changed. During the onsite inspection the online minutes for the carbon beds were observed. Two of the carbon beds were observed to be at 0 minutes. The third was observed to be at 1160 minutes.

Special Condition III.1. stipulates the permittee shall not exhaust process vents in EU03 to the carbon adsorber system in EU12b for more than 744 hours per 12-month rolling time period. Staff report the system automatically logs the time in which the carbon adsorbers are used each day. Once a month, staff pull the data from the system and input it into a spreadsheet which calculates the monthly and 12-month rolling hours. Staff then review the data. If the 12-month rolling value were to be approaching the limit, plant staff would be notified. Records of the monthly and 12-month rolling time period number of hours that process vents from EU03 exhausted to the carbon adsorber system in EU03 were provided and reviewed. Records of 12-month rolling hours were reviewed for the period of June 2023 to May 2024. During the period of records reviewed, the 12-month rolling hours ranged from 10.0 hours to 12.2 hours per 12-month rolling time period, well below the limit of 744 hours per 12-month rolling time period.

Special Condition III.2. stipulates gases from the choline hydroxide storage tank shall be routed to the FG963THROX for incineration or to the carbon adsorber system in EU12b. Gases from the choline hydroxide storage tank are vented to FG963THROX for incineration as primary control. In the event FG963THROX is not available, gases from the choline hydroxide storage tank are sent to the carbon adsorber system in EU12b. The choline hydroxide storage tank is equipped with an emergency pressure release valve. Staff report if an event were to occur in which the pressure within tank approached dangerous levels, the pressure release valve would automatically open to relieve the pressure. Staff report if such an event were to occur an investigation into the cause would be conducted and staff would calculate the emissions from the release to determine if a deviation occurred. If a deviation were to occur, staff report the deviation would be reported to the AQD in a deviation report.

Storage vessels in EU03 subject to 40 CFR Part 63, Subpart MMM are exempted from the requirement to control emissions with the afterburner (FG963THROX) or the EU12b carbon adsorber system for up to 240 hours per rolling 12-month time period, S.C.IV.1. The 40 CFR Part 63, Subpart MMM allows Group 1 storage tanks to bypass control for up to 240 hours per 12-month rolling time period when the control device is down for maintenance. EU03 contains Group 2 storage vessels only. Staff report as part of their annual reasonable inquiry, the Group 2 status of storage vessels within the process is reviewed and verified.

Section VIII of EU03 lists stacks and vents associated with EU03. At the time of inspection, the stack vent diameters and heights were visually verified for the following stack vents, SV03001A (product storage vent), SV03002A (product storage vent), SV03003 (product rail car atmospheric vent), SV03004 (product rail car atmospheric vent), SV03005 (product rail car atmospheric vent), and SV03006 (product rail car atmospheric vent). The remaining stack vents listed in section VIII. of EU03 are located at other emission units at the facility. These stacks will be visually verified at the time of inspection for those emission units.

MACT Compliance

FGPESTICIDES

This flexible group and its conditions apply to emission units subject to the requirements of 40 CFR Part 63, Subparts A (General Provisions) and MMM (National Emission Standards for Hazardous Air Pollutants for Pesticide Active Ingredient Production). It should be noted that only portions of this flexible group were reviewed in order to verify that EU03 is in compliance with the requirements.

Staff report the facility utilizes workbooks for all processes onsite to review for MACT standard applicability and associated requirements. If changes to the process were to occur, applicability and requirements would be reassessed. Annually, staff conduct an internal environmental review of the process to ensure no changes to applicability have occurred. All process vents in EU03 were reported to have HAP emissions less than 50 ppmv. No HCl or Cl2 emissions are associated with the emission unit. No group one vents are associated with the emission unit. Consequently, the process is not required to have controls pursuant to subpart MMM.

FGHONFUGITIVES

This flexible group and its conditions apply to emission units subject to the requirements of 40 CFR Part 63, Subparts A (General Provisions) and H (HON for Equipment Leaks). Only portions of this flexible group were reviewed in order to verify that EU03 is in compliance with the requirements. EU03 is subject to the requirements of 40 CFR Part 63, Subparts A and MMM. Processes subject to Subpart MMM are also subject to the equipment leak provisions of 40 CFR Part 63, Subpart 64, Su

2,4-D (2,4-dichlorophenoxyacetic acid) is a heavy liquid. EU03 is subject to the requirements for heavy liquids in 40 CFR Part 63, Subpart H. Equipment is inspected for leaks during plant rounds using visual, audible, and olfactory detection. If a leak is identified, the leak is promptly repaired. Onsite staff report the time taken to repair the leak is tracked and verified to have been completed within the applicable timeframe stipulated by Subpart H. In the event a leak was not to be fixed within a required timeframe, the deviation would be reported as such in a deviation report.

OLD MACT

40 CFR Part 63, Subpart EEEE, also known as the OLD MACT, applies to new, reconstructed, or existing Organic Liquid Distribution (OLD) (non-gasoline) operation that is part of an emission unit subject to the requirements of 40 CFR Part 63, Subpart EEEE. EU03 was not listed as being subject to this subpart. As an emission unit with storage tanks and railcar loading, subjectivity of EU03 to this subpart was reviewed as part of the onsite inspection.

40 CFR 63.2406 defines organic liquid as any non-crude oil liquid, non-condensate liquid, or liquid mixture that contains 5 percent by weight or greater of the organic HAP listed in Table 1 to this subpart, as determined using the procedures specified in § 63.2354(c). Under this definition choline hydroxide and 2,4 -D salt are not considered an organic liquid. EU03 is therefore not subject to 40 CFR Part 63, Subpart EEEE at this time.

Summary

On July 19, 2024, AQD staff conducted a scheduled onsite inspection of the emission unit (EU) identified as EU03 at Corteva Agriscience, LLC, SRN P1028. Corteva Agriscience, LLC is a megasite located at 701 Washington Street, Midland, Midland County, Michigan 48667. EU03 is a 2,4-D (2,4-dichlorophenoxyacetic acid) salt herbicide process with manufacturing equipment located in the 959 building. Equipment in the process includes reactors, distillation equipment, storage tanks, rail car loading and unloading stations, and related equipment. EU03 is subject to the requirements of 40 CFR Part 63, Subparts A and MMM. Processes subject to Subpart MMM are also subject to the equipment leak provisions of 40 CFR Part 63, Subpart H, also known as the HON. At the time of inspection, the facility was found to be in compliance.

NAME Mathanael Dente

_{DATE} 9/16/2024

SUPERVISOR -