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

A404370899

FACILITY: Dow Silicones Corporation		**SRN / ID:** A4043
LOCATION: 3901 S Saginaw Rd, MIDLAND		**DISTRICT:** Bay City
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Jim Alger , Midland Area State Air Permitting Specialist		**ACTIVITY DATE:** 02/21/2024
STAFF: Adam Shaffer	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: Partial compliance evaluation of EU501-12 and EU501-49.		
RESOLVED COMPLAINTS:		

A partial compliance evaluation (PCE) consisting of an onsite inspection and records review was conducted by Air Quality Division (AQD) staff Adam Shaffer (AS) of the Dow Silicones Corporation (DSC) site located in Midland, MI. Applicable records were requested on February 13, 2024, to verify compliance with Renewable Operating Permit (ROP) No. MI-ROP-A4043-2019b, specifically for emission units (EU)501-12 and EU501-49. Through these emission units, select records were requested and reviewed for the flexible group (FG)MONMACT. An in-person inspection to verify onsite compliance was later completed on February 21, 2024.

Facility Description

DSC is a chemical processing facility. The facility is a mega-site and is a major source of hazardous air pollutants (HAPs), nitrous oxides (NOx), particulate matter (PM) and volatile organic compounds (VOCs). Additionally, the site is subject to various federal regulations and the site is operating under an EPA Civil Order No. 19-11880.

Offsite Compliance Review

DSC is required to submit semi-annual and annual compliance reports per Part A General Conditions 19-23 of MI-ROP-A4043-2019b. Previous reports were reviewed for select time periods. Several deviations were noted that could possibly be associated with the selected emission units for this inspection, however, were concluded to not be cause for a violation notice.

Based on the timing of the inspection, DSC has not submitted at this time their State and Local Emissions Inventory System (SLEIS) Report for 2023. After the company submits their 2023 SLEIS Report, select portions shall be reviewed and any errors noted addressed.

Compliance Evaluation

A request was sent to Mr. Jim Alger, Midland Area State Air Permitting Specialist, of DSC on February 13, 2024, for records required by ROP No. MI-ROP-A4043-2019b, specifically for EU501-12, EU501-49, FGMONMACT and FGRULE290. The onsite inspection was completed on February 21, 2024. AQD staff AS arrived at the facility at approximately 8:30 am. Weather conditions at the time of the inspection were cloudy skies winds to the north / northeast at 5-10 mph and temperatures in the mid 30's degrees Fahrenheit. During the inspection AS met with Mr. Alger and several other company staff to complete a records review and a tour of the site, specifically of select portions of EU501-12 and EU501-49. Site specific questions were answered by company staff at the time of the inspection.

As mentioned above DSC is a chemical processing facility. During the inspection, various components pertaining to EU501-12 and EU501-49 were reviewed and discussed at length with company staff.

ROP No. MI-ROP-A4043-2019b

EU501-12

This emission unit is for a small emulsion polymer (EP) process. This emission unit is subject to the requirements of 40 CFR Part 63, Subparts FFFF and HHHHH, and to the equipment leak provisions of 40 CFR Part 63, Subpart UU.

Onsite Observations

This emission unit was observed during the course of the site inspection. No concerns were noted and the unit appeared to be being operated in a satisfactory manner.

Three stacks are listed as associated with this emission unit and were unable to be viewed during the site inspection. Photo verification for each stack was later provided by company staff. Though the dimensions were not measured they appeared to be consistent with what is listed in MI-ROP-A4043-2019b.

Records Review

This emission unit is subject to a VOC emission limit of 0.12 tons per year (tpy) per a 12-month rolling time period. It was noted that the emissions for this emission limit do not include fugitive emissions (i.e., emissions from leaking valves, flanges, etc.) from the emission unit. Records were requested and reviewed for select time periods. For the month of December 2023, 1.08 lbs of VOCs were reported emitted. As of December 2023, 20.62 lbs of VOCs (approximately 0.01 tons) of emissions were reported emitted per a 12-month rolling time period which is well within the permitted limit. Previous 12-month rolling time periods reviewed also appeared to be within the permitted limit.

Per Special Condition (SC) VI.2, the permittee shall calculate and record the VOC emission rate from EU501-12 on a monthly / 12-month rolling time period basis. Records were requested and provided for select time periods. Based on the records provided, DSC appears to be keeping track of applicable records.

Per SC IX.1, the permittee shall comply with the applicable provisions of 40 CFR Part 63, Subpart HHHHH (Coatings MACT). Upon review of historical reports emitted it appears that DSC is using the process unit group (PUG) option with the NESHAP Subpart FFFF to demonstrate compliance.

EU501-49

This emission unit is for a low viscosity fluids and 3-component fluids process including reactors, tanks, condensers, and a vacuum system. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF, and the equipment leak provisions of 40 CFR Part 63, Subpart UU.

Onsite Observations

This emission unit was observed during the course of the site inspection. No concerns were noted and the unit appeared to be being operated in a satisfactory manner.

Per SC III.1, the permittee shall not operate EU501-49 unless the exit gas temperature of condenser 15091 is 90 degrees Fahrenheit or less. Exit gas temperature records for

condenser 15091 were requested and reviewed for select time periods during the course of the site inspection. Based on the records reviewed, there appeared to be no times where the condenser 15091 went above the 90 degrees Fahrenheit limit. After further review, the records provided appeared acceptable.

At the time of the inspection the exit gas temperature for condenser 15091 read approximately 77 degrees Fahrenheit which is within the acceptable limit of operation.

Per SC IV.1, the permittee shall not operate EU501-49 unless the condenser is installed, maintained and operated in a satisfactory manner. Based on the records reviewed and observations made at the time of the inspection, DSC appears to be operating this condenser in a satisfactory manner.

Per SC IV.2, the permittee shall equip and maintain the condenser 15091 with a continuous exit gas temperature indicator. The permittee shall calibrate the temperature indicator in a satisfactory manner acceptable to the AQD District Supervisor. The temperature monitor was observed during the site inspection. DSC staff stated that the monitor used to be on a 48-month calibration cycle, however, was recently increased to an annual calibration frequency. The last two calibrations were on 04/22/2020 and 10/23/2023. It was determined that the reasoning for the increased frequency of calibrations was to be consistent with calibration frequencies with other items. This appears acceptable.

Four stacks are listed as associated with this emission unit and were unable to be viewed during the course of the site inspection. Photo verification for each stack was later provided by company staff. Though the dimensions were not measured they appeared to be consistent with what is listed in MI-ROP-A4043-2019b.

Records Review

This emission unit is subject to a 6.30 tpy VOC emission limit per a 12-month rolling time period. This emission limit does not include fugitive emissions (i.e. emissions from leaking valves, flanges, etc.) from the emission unit. Records were requested and provided for select time periods. For the month of December 2023, 163.88 lbs of VOCs were reported emitted. As of December 2023, approximately 0.92 tpy of VOCs were emitted per a 12-month rolling time period which is well within the permitted limit. Previous 12-month rolling time periods reviewed were also within the permitted limit.

Per SC VI.2, the permittee shall monitor and record, on a continuous basis, the exit gas temperature of condenser 15091 with instrumentation acceptable to the AQD. Records were requested and reviewed for select time periods at the time of the inspection. Based on the records reviewed, it appears that DSC is adequately keeping track of the applicable records.

Per SC VI.3, the permittee shall calculate and keep, in a satisfactory, records of monthly and 12-month rolling time period VOC emissions for EU501-49 using production records, operating records, and / or other data acceptable to the AQD District Supervisor. Records were requested and provided for select time periods of VOC emissions. Based on the records provided, DSC appears to be keeping track of VOC emission records.

FGMONMACT

This flexible group applies to miscellaneous organic chemical manufacturing process units (MCPU) that are located at, or are part of, a major source and meet the criteria specific in 40 CFR Part 63 Subpart FFFF (NESHAP Subpart FFFF).

It should be noted that only portions of this flexible group were reviewed to verify that EU501-12 and EU501-49 are in compliance with FGMONMACT. Additional information for each emission unit with regard to the NESHAP Subpart FFFF is discussed below.

EU501-12: This emission unit is part of MCM-A, MCPU-008, MCPU-113, and MCPU-161. Regarding the MCPU-113, DSC stated this group is Group 2, and the estimated OHAP emissions for 2023 and 2024 is 789.755145 lbs. The other three MCPUs potential OHAP emissions are less than 200 lb/yr thus are subject to the NEHSHAP Subpart FFFF, however, would appear to be exempt.

EU501-49: This emission unit is part of MCPU-024, MCPU-076 and MCPU-162. The potential OHAP emissions for all three MCPU's are less than 200 lbs/yr, thus are subject to the NESHAP Subpart FFFF, however, would appear to be exempt.

FGRULE290

This flexible group is for all emission units using the Rule 290 exemption. DSC has approximately nine emission units that they consider exempt per Rule 290 in the 501 building. Records were requested and provided for select time periods for each emission unit. Upon review, one emission unit (EU501-31), contained one carcinogenic component, however, monthly total emissions for the carcinogenic component and the emission unit were well within the respective limits for the Rule 290 exemption. No potential issues were identified in the remaining emission units. After further review, the nine emission units appear to be exempt per Rule 290.

Conclusion

Based on the observations made and records reviewed, DSC appears to be in compliance with MI-ROP-A4043-2019b, specifically the portions related to EU501-12 and EU501-49.

NAME Adam S. Smith DATE 03/08/24 SUPERVISOR C. Hare