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

A404361838

FACILITY: Dow Silicones Corporation		**SRN / ID:** A4043
LOCATION: 3901 S Saginaw Rd, MIDLAND		**DISTRICT:** Bay City
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Amanda Karapas , Air Specialist		**ACTIVITY DATE:** 02/15/2022
STAFF: Gina McCann	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: EU212-01, EU212-02, EU212-03, EU212-05 and EU212-12		
RESOLVED COMPLAINTS:		

DOW Silicones/EGLE-AQD staff present during the inspection:

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Amanda Karpas (DOW-Air Specialist)
- Steve Warner (Production Engineer-212 Building Dow Silicones)
- Benjamin Brandstadt (212 Building Dow Silicones)
- Rochelle Chantaca (Production Coordinator)

This inspection consisted of several emission units at the 212 building, EU212-01, EU212-02, EU212-03, EU212-05, and EU212-12. All were in compliance with their associated permits at the time of the inspection.

EU212-01

This emission unit is a batch reaction process consisting of the 6054 batch kettle (an agitated, jacketed kettle), a heater, a receiver, and a service water cooled heat exchanger located in 212 building. Emissions are controlled by chilled condenser 6060. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF. The most recent PTI for this emission unit is PTI No. 63-14B.

During the updating of emission factors for the consent decree (19-11880) with US EPA, the plant found trace amounts of various constituents in their process. This triggered a permit revision. The PTI was issued September 16, 2021 with a R216(2) minor modification request received September 28, 2021.

Special condition (SC) I.1. restricts VOC emissions to 4.5 ton per year (tpy) based on a 12-month rolling time period as determined at the end of the calendar month. SC VI.3 is the associated monitoring and recordkeeping requirement that requires the plant to calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period VOC emissions for EU212 01 using production records, operating records, and/or other data acceptable to the AQD District Supervisor. For the 12-month rolling time period ending December 2021, VOC emissions were 0.33 tpy.

Emissions are controlled by chilled condenser 6060. The plant shall not operate EU212-01, except for drum off, unless the chilled condenser 6060 exhaust gas temperature is 20°C or less. SC VI.2 is the associated monitoring and recordkeeping requirement that requires the plant to monitor and

record, in a satisfactory manner, the chilled condenser 6060 exhaust gas temperature on a continuous basis with instrumentation acceptable to the AQD District Supervisor, when EU212 01 is venting to chilled condenser 6060. For the purposes of this condition, "on a continuous basis" is defined as an instantaneous data point recorded at least once every 15 minutes. The permittee may record block average values for 15 minute or shorter periods calculated from all measured data values during each period. I viewed the chilled condenser 6060 exhaust gas temperature records for the time period January 1, 2022 through February 12, 2022. The condenser operated within the requirements except for during drum off. One timeframe, November, indicated the condenser temperature was higher than 20°C, however this was during a drum off event.

EU212-02

Emission unit 212-02 is the 20500 polymer process and process emissions are controlled by condenser 20539. 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. The most recent PTI for this emission unit is PTI No. 144-20.

During the updating of emission factors for the consent decree (19-11880) with US EPA, the plant found trace amounts of methanol and toluene in their process. This unit was a previously R336.1290, exempt from permitting process, that triggered the need for a permit. The PTI was issued September 16, 2021 with a R216(2) minor modification request received September 28, 2021.

SC I.1. restricts VOC emissions to 2.0 ton per year (tpy) based on a 12-month rolling time period as determined at the end of the calendar month. SC VI.3 is the associated monitoring and recordkeeping requirement that requires the plant to calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period VOC emissions for EU212 02 using production records, operating records, and/or other data acceptable to the AQD District Supervisor. For the 12-month rolling time period ending December 2021, VOC emissions were 0.23 tpy.

Emissions are controlled by chilled condenser 20539. The plant shall not operate EU212-02, except for product drum off and product transfers to storage tanks, unless the condenser 20539 vapor outlet temperature is 45 degrees Celsius or less. SC VI.2 is the associated monitoring and recordkeeping requirement that requires the plant to monitor and record, in a satisfactory manner, the condenser 20539 vapor outlet temperature with instrumentation acceptable to the AQD District Supervisor. For the purposes of this condition, "on a continuous basis" is defined as an instantaneous data point recorded at least once every 15 minutes. The permittee may record block average values for 15 minute or shorter periods calculated from all measured data values during each period. I viewed the condenser 20539 vapor outlet temperature records for the time period January 1, 2022 through February 12, 2022. The condenser operated as required.

EU212-05

This emission unit is a cold blend mixing process in 6009 Gum Kettle with a man-way loading vent and a product drum-off. No control device is associated with this emission unit. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF, HHHHH, and to the equipment leak provisions of 40 CFR Part 63, Subpart UU. The most recent PTI for this emission unit is PTI No. 108-18A.

During the updating of emission factors for the consent decree (19-11880) with US EPA, the plant found trace amounts of various constituents in their process. This triggered a permit revision. The PTI was issued June 3, 2021 with a R216(2) minor modification request received July 16, 2021.

SC I.1. restricts VOC emissions to 5.80 ton per year (tpy) based on a 12-month rolling time period as determined at the end of the calendar month. SC VI.2 is the associated monitoring and recordkeeping requirement that requires the plant to calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period VOC emissions for EU212-05 using production records, operating records, and/or other data acceptable to the AQD District Supervisor. For the 12-month rolling time period ending December 2021, VOC emissions were 0.44 tpy.

EU212-12

This emission unit is a batch reaction process consisting of the 20400 batch kettle (an agitated, jacketed kettle), a trap, a receiver, and two heat exchangers located in 212 building. Emissions are controlled by chilled condenser HX20407. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF, UU, and HHHHH. The most recent PTI for this emission unit is PTI No. 48-14C.

During the updating of emission factors for the consent decree (19-11880) with US EPA, the plant found trace amounts of various constituents in their process. This triggered a permit revision. The PTI was issued May 25, 2021 with a R216(2) minor modification request received July 9, 2021.

SC I.1. restricts VOC emissions to 1.9 ton per year (tpy) based on a 12-month rolling time period as determined at the end of the calendar month. SC VI.3 is the associated monitoring and recordkeeping requirement that requires the plant to calculate and keep, in a satisfactory manner, records of monthly and 12-month rolling time period VOC emissions for EU212-12 using production records, operating records, and/or other data acceptable to the AQD District Supervisor. For the 12-month rolling time period ending December 2021, VOC emissions were 1.90 tpy. This 12-month rolling VOC emissions data includes emissions reported under a previous permit. Actual emissions relative to this permit limit are likely lower, since the effective date of the limit is the same as the date of the ROP modification, July 9, 2021.

Emissions are controlled by chilled condenser HX20407. The plant shall not operate EU212-12 unless the chilled condenser HX20407 exit gas temperature is 33°C or less. SC VI.2 is the associated monitoring and recordkeeping requirement that requires the plant to monitor and record, in a satisfactory manner, when EU212-12 is venting to chilled condenser HX20407, the exit gas temperature on a continuous basis. Monitoring and recording of data "on a continuous basis" is defined as an instantaneous data point recorded at least once every 15 minutes. The permittee may record block average values for 15 minute or shorter periods calculated from all measured data values during each period. In the event the continuous monitoring and recording system is inoperable, the permittee shall record at least one data point per shift for each data point that is required to be monitored on a continuous basis. For each event in which the continuous monitoring and recording system is inoperable, the permittee shall maintain a record of the date, time, and duration of each event. This record shall also include actions taken to correct and prevent a reoccurrence of each event. I viewed the chilled condenser HX20407 exit

gas temperature records for the time period January 1, 2022 through February 12, 2022. The condenser operated as required.

SC IV.2. does allow the plant to vent EU212-12 through SV212-003, while bypassing chilled condenser HX20407, for up to three hours per day. SC IV.3. allows the plant to vent EU212-12 through SV212-018, while bypassing chilled condenser HX20407, for drum off of final products. SC VI.4. is the associated monitoring and recordkeeping requirement that requires the plant to keep, in a satisfactory manner, daily records of the time that EU212-12 vents through SV212-003 and SV212-018. To comply with these requirements the plant installed a solenoid on the cover of the manway that will send a signal when there is no contact, therefore achieving the number of hours the plant is drumming off product. I viewed records related to these requirements for the time period starting January 1, 2022 through February 12, 2022. The plant operated within the permit requirements during this time period.

During the inspection we viewed each of the control devices that were a part of this inspection. Below are the observed values during the inspection compared to the process/operational restriction in the permit.

EU/FG	Control ID	Process/Operational Restriction	Observed Value	SPA Set Point
EU212-01	Chilled condenser 6060	Exhaust gas temperature <20°C	15.8°C	19.00°C
EU212-12	Chilled condenser HX20407	Exit gas temperature <33°C	26.6°C	32.00°C
EU212-02	Condenser 20539	Vapor outlet temperature is <45C	31.8°C	43.00°C

Each of the emission units require the control devices to perform calibrations on either the associated temperature probes that monitor compliance. Below is the frequency at which the plant is completed these calibrations.

EU212-01 (TT1178 calibration) 6060HX			
	PM	Equipment number	Date of completion

G68	**20015086489**	**H528-212___-6054__-6060-1178-TI**	**2/25/2021**
G68	**20016121076**	**H528-212___-6054__-6060-1178-TI**	**2/4/2022**
EU212-12 (TT6095 calibration) 20407HX			
	PM	**Equipment number**	**Date of completion**
G68	**20015100420**	**H528-212___-20400_-20407-6095-TE**	**3/12/2021**
P25	**20015783426**	**H528-212___-20400_-20407-6095-TE**	**8/2/2021**
G68	**20016139430**	**H528-212___-20400_-20407-6095-TE**	**1/18/2022**
EU212-02 (TT757 calibration) 20539HX			
	PM	**Equipment number**	**Date of completion**
G68	**20014677908**	**H528-212___-20515_-20540-0757-TT**	**09/28/2020**

NAME _____ DATE 3/7/2022 SUPERVISOR _____