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

A404362319			
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: 03/24/2022	
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE	
SUBJECT: EU311-01			
RESOLVED COMPLAINTS:			

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

• Gina McCann-EGLE-AQD, Environmental Quality Specialist

Records reviewed as part of the inspection were:

- ROP Annual report for 2021
- 40 CFR Part 64 CAM excursion/exceedance report for 1/1/2021-12/31/2021

EU311-01

This emission unit is recovers HCI/MeCl and includes scrubbers, tanks, columns, vaporizer, absorber, compressor, and related equipment. Several processes at the on-site vent to this recovery process. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF and Subpart EEEE. EU311-01 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The most recent PTI for this emission unit is PTI No. 1-08a. However, a R336.1216 modification had not been sent to the Department to incorporate into the facility's ROP. Therefore, this inspection covers conditions from the ROP.

Emissions are controlled by absorber 2810 followed by scrubber 2812 which vents to SV310-009 and absorber 24101 followed by scrubber 24102 which vents to SV311-005. The absorbers and scrubbers are CAM subject devices for Hydrogen Chloride and Methyl Chloride.

Special condition (SC) I.2. restricts hydrogen chloride (HCl) emissions to less than 4.0 ton per year (tpy) based on a 12-month rolling time period as determined at the end of each calendar month. SC I.5. restricts methyl chloride (MeCl) emissions to 2.5 tpy based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.2. is the associated monitoring and recordkeeping requirement that requires the plant to calculate and record emissions from the process for the previous calendar month to demonstrate compliance with the 12-month rolling time period emission limits specified in this table.

Pollutant	Limit	Actual Emissions	
	(tpy)	(tpy)	
HCI	4.0	0.007	
MeCl	2.5	0.55	

*Actual emissions are based on the 12-month rolling period ending February 2022.

Emissions are controlled by absorber 2810 followed by scrubber 2812 which vents to SV310-009 and absorber 24101 followed by scrubber 24102 which vents to SV311-005. These control devices have process/operational restrictions which are defined parameters within the permit to ensure emissions are controlled to their specified control efficiencies. SC III.1. requires the liquid flow rate of the absorber (2810) to be 4.0 gallons per minute (gpm) or greater. SC III.2. requires the liquid flow rate of the packed bed scrubber (2812) to be 2.4 gpm or greater. SC III.3. requires the liquid flow rate of the absorber (24101) to be 2.5 gpm or greater and SC III.4. requires the liquid flow rate of packed bed scrubber 24102 to be 1.0 gpm or greater.

Each of the process/operational described above have monitoring and recordkeeping associated with them to ensure the plant is in compliance with the HCl and MeCl emission limits. I viewed liquid flow rates of the absorbers (2810 and 24101) and packed bed scrubbers (2812 and 24102) for the time period starting January 2021 through March 21, 2022. The plant operated within the process/operational restrictions while the process was in operation.

During the inspection we toured the plant and observed each of the control devices. Each control device has a flow transmitter (FT) associated with it that monitors the flow. This identification is checked between control screens and devices in the field. The plant records flow in pounds per hour (pph). The table below records the values observed and the secure process alarm (SPA) in place.

Pollution Control Device	Process/Operational Restriction	Observed Value	SPA
Absorber 2810 (FT 1502)	Liquid flow rate ≥ 4.0 gpm or 2000 pph	2785 pph	2005 pph
Scrubber 2812 (FT 1501)	Liquid flow rate ≥ 2.4 gpm or 1200 pph	1497 pph	1205 pph
Absorber 24101 (FT 31160)	Liquid flow rate ≥ 2.5 gpm or 1250 pph	1790 pph	1255 pph
Scrubber 24102 (FT 31166)	Liquid flow rate ≥ 1.0 gpm or 500 pph	991 pph	505 pph

Additionally, these control devices are all subject to federal CAM requirements, which place additional compliance assurance measures in the permit to ensure satisfactory operation. If each of the control devices do not operate within the prescribed operating parameters, the facility shall implement corrective action and maintain a record of action taken to prevent reoccurrence. An excursion is defined as operating less than the required liquid flow rate in the ROP or demonstrated during testing. Upon detecting an excursion, the permittee shall restore operation of the control device to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing emissions.

I reviewed the 2021 annual CAM reports. No excursions were reported for EU311-01 for the reviewed time periods.

Special condition III.7 restricts operation of EU311-01, when in vent down maintenance mode, to less than 120 hours per year. I reviewed differential pressure for distillation columns 2890 and 24195 for 2021 and 2022. Maintenance vent down mode did not occur during 2022 to date and occurred for 22 hours in 2021.

Special condition III.9 requires the facility to calibrate the liquid flow indicator for absorbers 2810 and 24101 and scrubbers 2812 and 24102 in a satisfactory manner. Calibration records were requested during records review. Occurrence of calibrations is listed below. For calibration of these flow transmitters: the plant would trip the flow valve and confirm that the FT reads 0 pph, and then once the valve is opened again they would confirm that a certain % of the valve opening would correspond to the expected flow reading for that valve size.

Equipment	Calibration Date Completion	
24102		9/11/2020
24102		9/14/2021
24101		9/11/2020
24101		9/14/2021
2810		5/27/2020
2810		5/28/2021
2812		5/27/2020

2812 5/28/2021

The plant was in compliance with the conditions defined in MI-ROP-A4043-2019 for EU311-01 at the time of the inspection.

NAME

3/30/2022

SUPERVISOR Chris Hare