

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

A404362580

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: 04/13/2022
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU505-01		
RESOLVED COMPLAINTS:		

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

- Gina McCann (EGLE-AQD, Environmental Quality Specialist)
- Adam Shaffer (EGLE-AQD, Environmental Quality Analyst)
- Amanda Karapas (Dow Air Specialist)
- Brandon Bishop (Dow Environmental Specialist)
- Jeffrey Elliott (Production Engineer)

This inspection consisted of viewing one emission unit, EU505-01. At the time of the inspection the unit was in compliance with the associated permit requirements.

EU505-01 manufacturers resins and coatings and the emission unit consist of reactors, kettles, condensers, scrubber, drum off, vacuum system and related equipment. This emission unit is subject to the requirements of 40 CFR 61 Subparts A, J and V and 40 CFR 63 Subpart FFFF. Tanks 508 and 509 are subject to Subpart FFFF. The most recent PTI for this emission unit is PTI No. 169 -12B

Emissions are controlled by chilled condensers 6553 and the 16092/25094 pair, which operate in parallel. This unit manufacturer's all Group 2 products as classified by 40 CFR Part 63 Subpart FFFF (MON). Routine operations utilize the site thermal oxidizer, FGTHROX, in conjunction with the condensers. This unit does have the ability to bypass FGTHROX and vent to atmosphere. This operating scenario would occur if there were circumstances within the system or at FGTHROX that prevented venting to FGTHROX. Emissions are always routed through condensers first venting to atmosphere or FGTHROX.

Special condition (SC) I.2 restricts VOC emission to 8.67 ton per year (tpy) based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.3 is the associated monitoring and recordkeeping requirement that requires the plant to keep, in a satisfactory manner, records of monthly and 12-month rolling time period VOC emissions for EU505-01 using production records, operating records, and/or other data acceptable to the AQD District Supervisor. I reviewed VOC emissions for the 12-month rolling time period ending February 2021. Total VOC emissions for this time period were 2.03 tpy. Post control, this unit vented 4010.88 pounds through the THROX bypass stack and 39.59 pounds out THROX.

Proper operation of the condensers is required to efficiently control VOC emissions. SC III.1 restricts operation of the equipment in EU505-01 that exhausts to chilled condenser 6553 unless the coolant exit temperature of the condenser is 7°C or less. During the inspection the coolant exit temperature of condenser 6553 was -17.4°C with a secure process alarm (SPA) set at 2°C. Temperature transmitter (TT) 1575 is the device that monitors the coolant exit temperature.

SC III.2. restricts operation of the equipment in EU505-01 that exhausts to chilled condenser 16092 or chilled condenser 25094, whichever is in use, unless the coolant exit temperature of whichever condenser is in use is 0°C or less. During the inspection the coolant exit temperature of condenser 16092 was -9.9°C with a secure process alarm (SPA) set at -2°C. The coolant exit temperature of condenser 25094 was -17.4°C with a secure process alarm (SPA) set at -2°C. Temperature transmitter (TT) 1574 is the device that monitors the coolant exit temperature for condenser 16092 and TT 41426 monitors the coolant exit temperature for condenser 25094. Condenser 1574 was not receiving process gas at the time of the inspection.

SC III.3. allows operation of equipment in EU505-01 that exhausts to one of the chilled condensers (condenser 6553 and either condenser 16092 or condenser 25094) when the chilled condenser to which the equipment exhausts is not operating in a satisfactory manner, as long as the equipment exhaust is routed to FGTHROX or FGSITESCUBBERS and FGTHROX or FGSITESCUBBERS (whichever is receiving exhaust from EU505-01) is installed, maintained, and operated in a satisfactory manner. SC VI.2 is the associated monitoring and recordkeeping requirement that requires the plant to monitor and record, on a continuous basis, the coolant exit temperature of chilled condenser 6553 and either chilled condenser 16092 or chilled condenser 25094, whichever is in use, with instrumentation acceptable to the AQD. For the purpose 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 reviewed coolant exit temperatures for all condensers for the time period January 1, 2021, through April 11, 2022. During a previous inspection I received FGTHROX offline times and combustion chamber temperatures. When comparing FGTHROX offline times to condenser online times it appears the condensers operated within the process/operational restrictions of the permit.

SC IV.2 requires the plant to equip and maintain each of the chilled condensers with a device to continuously monitor and record the condenser coolant exit temperature. The permittee shall calibrate the coolant exit temperature indicator in a satisfactory manner acceptable to the AQD District Supervisor. The table below displays the times these units were last calibrated. Note condenser 25094 was not calibrated annually as required by internal DSC procedures. However, upon calibration on April 11, 2022, the unit certified the temperature transmitter was appropriately calibrated.

TT	Condenser	Date calibrated 1	Date Calibrated 2
1574	16092	6/28/2021	6/19/2020
1575	6553	9/27/2021	10/7/2020
41426	25094	4/11/22*	

*Deviation will be included in upcoming semi-annual report. Next calibration scheduled for Fall 2022.

NAME



DATE

4/29/22

SUPERVISOR


