

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

A404366195

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: 01/24/2023
STAFF: Adam Shaffer	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: Partial Compliance Evaluation for Dow Silicones specifically of EU325-03.		
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 of the Dow Silicones Corporation (DSC) site located in Midland MI. Applicable records were requested on January 17, 2023, to verify compliance with Renewable Operating Permit (ROP) No. MI-ROP-A4043-2019a, specifically for emission unit (EU) 325-03. An in-person inspection to verify onsite compliance was later completed on January 24, 2023.

Facility Description

DSC is a chemical processing facility. The facility is a mega-site and is a major source of hazardous air pollutants (HAPs), nitrox 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 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-A4043-2019a. Previous reports were reviewed for select time periods. After further review there appeared to be no issues specifically for EU325-03 in the ROP compliance reports reviewed.

Based on the timing of the inspection, the 2021 Michigan Air Emissions Reporting System (MAERS) Report, specifically emissions for EU325-03 were reviewed. Speaking with company staff it was determined that DSC reports emissions from EU325-03 into RG-TCS. Upon review of the 2021 MAERS Report, emissions from EU325-03 would appear to be reported, though the quantity of emissions could not be identified based on the supporting documentation provided. DSC appears to use "Emission Master" when determining emissions for each product. After further review, this appears acceptable at this time.

Compliance Evaluation

A request was sent to Mr. Jim Alger, Midland Area State Air Permitting Specialist, of DSC on January 17, 2022, for records required by ROP No. MI-ROP-A4043-2019a, specifically for EU325-03. The onsite inspection of the facility was later completed on January 24, 2023.

AQD staff AS arrived at the facility at 9:56am. Weather conditions at the time of the inspection were partly cloudy skies, winds to the east at 5-10mph and temperatures in the low 30's degrees Fahrenheit. AS met with Mr. Alder and several other company staff initially to go over records and site operations. Following this AS checked in with security staff and was provided a tour of the site, specifically, of EU325-03 by company staff who also answered site specific questions at the time. Requested records were provided by Mr. Alger.

As mentioned above DSC is a chemical processing facility. During the inspection, the components of EU325-03 were reviewed and discussed at length with company staff.

ROP No. MI-ROP-A4043-2019a

EU325-03

This emission unit is for a solids recovery system. EU325-03 receives vents from different processes to recover silicon. EU325-03 is located in building 348 and the most recent permit to install (PTI) for this emission unit is PTI No. 44-06.

Onsite observations

Per special condition (SC) III.1, if the liquid flow rate of venturi scrubber 16810 is less than 40 gallons per minute, the permittee shall implement corrective action and maintain a record of actions taken to prevent a reoccurrence. It was verified by company staff that during select time periods reviewed that there has been instances where the liquid flow rate has dropped below 40 gallons per minute for the venturi scrubber 16810. Responses to the reasoning and actions taken were provided. In follow up discussions with company staff, it was explained that during operation there is an interlock switch from the vent process line to the venturi scrubbers that may, depending on the situation, be closed to the scrubbers if they are determined to not be operating properly. Additionally, there appears to be a delay on the interlock switch so it will not unnecessarily be continually closed. Records were provided and reviewed for select time periods that verified the operations and instances it was closed. The venturi scrubbers were also observed during the course of the inspection. Based on the records reviewed and onsite observations, it appears that overall, the venturi scrubbers are being operated in a satisfactory manner.

Per SC III.2, the permittee shall not operate the process serviced by the spent silicon material handling operation, including recovery of direct process residue solid/fines tank and spent bed tanks, hereinafter "system", unless the 348 building scrubbers (16810, 16811) are installed and operating properly. The process and control equipment were observed during the course of the site inspection and appeared to be operating properly.

Per SC III.3, the permittee shall equip and maintain scrubber 16810 with a liquid flow indicator. A liquid flow indicator was observed on the 16810 scrubber at the time of the inspection. At the time of the inspection the flow rate read 108.7 gallons per minute.

One stack is listed in association with this emission unit and was noted during the inspection. Though the dimensions were not measured based on discussion with company staff and observations made, there would appear to be no issues.

Records

Per SC VI.1, the permittee shall monitor and record, on a continuous basis, the liquid flow rate of venturi scrubber no. 16810 and the liquid level of the scrubber tank. Records were requested and provided for select time periods. Based on the records reviewed, DSC appears to be keeping track of applicable records.

Additional Observations

In the pollution control equipment section of EU325-03, along with the two venturi scrubbers (16810, 16811) the permit also lists FG337SCRUBBER, however, there are no special

conditions that relate to the emission unit being controlled by this flexible group. Speaking with company staff and review of historical information it was determined that in the original PTI No. 44-06, EU325-003 is not controlled by FG337SCRUBBER but the two venturi scrubbers. Process feed into EU325-03 was historically from EU325-01 and several other vents, but presently the only process feed into EU325-03 is from EU325-01. During normal operations EU325-01 may shut off feed rates into EU325-03, and if several criteria are met, emissions from EU325-01 would be controlled by FG337SCRUBBER. It was verified that EU325-01 can be operated without venting to EU325-03, however, if the spent metal beds of EU325-01 are full the unit will need to be shut down unless it can vent to EU325-03. It was concluded that since the units can operate independently that they would be separate emission units. The exact reasoning of the listing of FG337SCRUBBER in the pollution control equipment section of EU325-03 is unknown, however, since this is not a permitted condition, this is not an issue and can be removed during the next ROP renewal.

At the time of the inspection, the scrubber tank was observed. A level meter on the tank read 21.72% at the time of the inspection. Speaking with company staff it appears that DSC tries to keep the liquid level for the scrubber tank at a minimum of 12-15%.

Conclusion

Based on the observations made and records reviewed, DSC appears to be in compliance with MI-ROP-A4043-2019a, specifically for the portion of EU325-03.

NAME Adam Shapiro DATE 03/10/23 SUPERVISOR Chris Kane