

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

A404361947

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: 02/24/2022
STAFF: Gina McCann	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU322-01, EU322-02, and EU322-04		
RESOLVED COMPLAINTS:		

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

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Amanda Karpas (Dow-Air Specialist)
- Brandon Bishop (Plant Production Coordinator)
- Matt Ludwig (322 bldg Production Engineer)

This inspection consisted of three emission units, EU322-01, EU322-02, and EU322-04. Each of these units were once a part of flexible group (FG) FG322-01. As part of the re-permitting effort required by the Consent Decree (19-11880) with US EPA, each unit was re-permitted and a ROP R336.1216(2) modification was received to void FG322-01. Each of these units share a common control device, scrubber (22452), but have separate pound per hour (pph) and 12-month ton per year (tpy) 12-month rolling VOC emission limits. All emission units were in compliance with their associated permits at the time of the inspection.

EU322-01

The LP-1 process including reactors, distillation equipment, storage tanks, condensers, and related equipment. Emissions are controlled by Scrubber 22452. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF as well as the equipment leak provisions in 40 CFR 63, Subpart UU. The most recent PTI for this emission unit is PTI No. 134-20. This PTI was issued on June 28, 2021 and the ROP R336.1216(2) minor modification was received on September 20, 2021.

Special condition (SC) I.1. restricts VOC emissions to 32.5 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 EU322-01 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 2.25 tpy.

EU322-02

The HP-7 process producing silane products. Emissions are controlled by scrubber 22452. This emission unit is subject to the requirements of 40 CFR Part 63, Subparts FFFF and to the equipment leak provisions of 40 CFR Part 63, Subpart UU. The most recent PTI for this emission unit is PTI No. 132-20. This PTI was issued on June 28, 2021 and the ROP R336.1216(2) minor modification was received on August 20, 2021. A subsequent PTI was issue, 132-20a, on February

11, 2022. The subsequent PTI was issued due to the EPA consent decree. Emission units EU322-02 and 04 required further changes (to vent acetylene emissions to FGTHROX) and were re-submitted. These ROP Mod applications have not been submitted to EGLE yet since the date the vents will be connected is unknown at this time.

SC I.1. restricts VOC emissions to 36.35 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 EU322-02 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 7.56 tpy.

EU322-04

The HP-6 process producing silane products. Emissions are controlled by scrubber 22452. This emission unit is subject to the requirements of 40 CFR Part 63, Subparts FFFF and to the equipment leak provisions of 40 CFR Part 63, Subpart UU. The most recent PTI for this emission unit is PTI No. 133-20. A subsequent PTI was issued, 133-20a, on February 11, 2022. The subsequent PTI was issued due to the EPA consent decree. Emission units EU322-02 and 04 required further changes (to vent acetylene emissions to FGTHROX) and were re-submitted. These ROP Mod applications have not been submitted to EGLE yet since the date the vents will be connected is unknown at this time.

SC I.1. restricts VOC emissions to 36.99 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 EU322-04 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 9.11 tpy.

Currently, **SC I.3** restricts Dimethylvinylchlorosilane (CAS No. 1719-58-0) emissions to 0.21 tpy based on a 12-month rolling time period as determined at the end of the calendar month. PTI 133-20a removes this limit, because DSC is installing an additional glycol condenser prior to scrubber 22452 in an effort to recover material. EU322-04 will then be similar to EU322-02. **SC VI.4** 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 Dimethylvinylchlorosilane (CAS No. 1719-58-0) emissions for EU322-04 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, Dimethylvinylchlorosilane (CAS No. 1719-58-0) emissions were 0.05 tpy.

Each of these emission units use scrubber 22452 to reduce VOC emissions. **SC III.1** restricts operation of each emission unit unless the liquid flow rate of scrubber 22452 is at a minimum of 10.0 gallons per minute (gpm). **SC VI.2.** is the associated monitoring and recordkeeping requirement that requires the plant to monitor and record, on a continuous basis, the liquid flow rate of scrubber 22452 with instrumentation acceptable to the AQD. 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. During the inspection I viewed the process in operation. Scrubber 22452 flow was 22.3 gpm, with a secure process alarm (SPA) set at 12 gpm. I reviewed scrubber flow data for the time period starting January 1, 2021 through February 22, 2022. The scrubber flow was generally above 15 gpm. There were two times identified, June 18, 2021 and July 24, 2021 when the scrubber flow was below 10 gpm. The process was shutdown during these times and not in operation.

SC IV.2 requires the plant to calibrate the liquid flow indicator of scrubber 22452. Calibrations are done on a four-year cycle as illustrated in the table below. There are two flow transmitters (FT), which are totalized to determine the gpm flow.

Recent Calibrations

<u>Unit</u>	<u>Equipment</u>	<u>Date</u>
Scrubber 22452	FT-16833	3/29/2018
		2/3/2014
Scrubber 22452	FT-16832	2/8/2010
		2/22/2006

Compliance Reporting

No deviations were reported for the reporting period January 1, 2020 through December 31, 2020 or January 1, 2021 through June 30, 2021.

NAME 

DATE 3/7/2022

SUPERVISOR 