

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

A404361056

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: 12/02/2021
STAFF: Gina McCann	COMPLIANCE STATUS: Non Compliance	SOURCE CLASS: MEGASITE
SUBJECT: EU800-01		
RESOLVED COMPLAINTS:		

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

- Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)
- Amanda Karapas (Air Specialist, DOW Silicones)
- Elizabeth Petschar (DOW MiOPS, Environmental Technician)

Records reviewed as part of the inspection were:

- ROP Annual report for 2020

EU800-01

This emission unit consists of the 800 block tank farm consisting of storage and transfer operations for on-site waste liquids. Four (4) 10,000 gallon tanks for mixed solvents and two (2) 10,000 gallon tanks dedicated to a methoxy stream and code B. Emissions are controlled by a nitrogen blanket. Waste is collected from various operations on-site and then trucked to tanks that ship them off site for disposal via tankers. The most recent PTI for this emission unit is PTI No. 334-88D.

A violation notice was sent for non-compliance with special conditions (SC) III.1. and VI.2.

SC I.1 restricts VOCs emissions to less than 0.76 ton per year (tpy) based on a 12-month rolling time period as determined at the end of each calendar month. SC VI.4. is the associated monitoring and recordkeeping requirement that requires the plant to maintain records of monthly and 12-month rolling time period VOC emissions for EU800-01. Liquids are either pumped into the tanks or pumped out of the tanks. This activity is done under a vapor balance closed loop system. Emissions occur when there is a leak, unplanned event or if maintenance occurs there may be some calculated due to release of a pressure relief valve.

Preemptive calculations are done for each of the pollutants. Emission factors times the number of tanks is used to calculate emissions that could occur. No emissions were lost for the 12-month rolling time period ending October 2021 and VOC emissions were 0.0 tpy.

SC IV.1. restricts operation of EU800-01 unless the N₂ pressure blanket is installed, maintained, and operated in a satisfactory manner acceptable to the AQD District Supervisor, which includes meeting the requirement of SC III.1. SC III.1. requires the plant to properly operate the N₂ pressure blanket, which means that it will have a pressure differential of not less than 5 psig between the N₂ inlet and tank exhaust regulator pressures. During the inspection we viewed each of the pressure gauges at the tops of the tanks. Pressure

difference was recorded as follows:

Tank ID	Pressure Differential (psi)	PROCESS/OPERATIONAL RESTRICTION(S) (psig)
19781	1	>5
19782	1	>5
19783	2	>5
19784	15	>5
19785	3	>5
19786	3	>5

Tanks 19781, 19782, 19783, 19785, and 19786 were below the required not less than 5 psig. Plant staff theorized it may appear lower than actual due to the sizing on the gauges. A violation notice was written for SC III.1. but could have also included SC IV.1. for operating EU800-01 while not meeting the requirements of SC III.1.

SC VI.2 requires the plant to monitor and record, on a per shift basis, the N₂ pressure blanket differential (i.e., difference between the N₂ inlet and tank exhaust regulator pressures). A records request for the time period January 2021 through November 2021 was requested. While on-site we discussed how the plant performs a daily RCRA inspection to ensure the tanks are operating properly, including the N₂ pressure blanket. However, the requirement is to record the pressure differential and the plant does not record a value. During the last inspection, February 26, 2020, the plant was made aware of this requirement and had included it in the January 1, 2020 through June 30, 2020 semi-annual deviation report, but it did not get carried forward into the second semi-annual deviation report for 2020.

The deviation, including corrective action, was reported as follows:

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1. Group or Source Wide ID EU800-01	2. Table/Condition No. SC VI.1	3. Date(s) of Occurrence 1/1/2020	4. Previously reported ? ☐ Yes ☒ No If Yes, Date	5. Duration of Deviation 181 Days
6. Method Used to Determine Compliance Status (if different from method specified in RO Permit) EGLE Inspection		7. Description of Deviation Condition requires 800 Block to monitor and record, on a per shift basis, the N2 pressure blanket differential (i.e., difference between the N2 inlet and tank exhaust regulator pressures). This record was not maintained by the facility.		
8. Reason for Deviation and Description of Corrective Action Taken Reason for deviation: Pressure regulators are mechanical devices with fixed setpoints. The N2 inlet regulators are set at 3 PSI and the tank vent outlet regulators are set at a minimum of 8 PSI, as indicated by stamped metal tags affixed to the regulators. Recording the value stamped on these metal tags on a per shift basis was deemed ineffective at actually confirming the N2 pad is working as desired. Technically, this cannot readily be measured so it is calculated based on regulator set points of 3 psig on the inlet nitrogen regulator minus 8 psig on the outlet pressure regulator equals a pressure differential of 5 psig. Corrective Action: Implement process to record, on a per shift basis, the difference between the N2 inlet and tank exhaust regulator pressures. Revise permit language to better reflect the desired pressure differential measurement.				

1. Group or Source Wide ID EU800-01	2. Table/Condition No. SC VI.2	3. Date(s) of Occurrence 1/1/2020	4. Previously reported ? ☐ Yes ☒ No If Yes, Date	5. Duration of Deviation 181 Days
6. Method Used to Determine Compliance Status (if different from method specified in RO Permit) Self-Assessment		7. Description of Deviation Unit did not record the type of transfer (e.g., dempster, tank truck, drum, vacuum transfer, etc.) for each transfer of liquid waste to and from each storage tank, and for each dempster depressurization.		
8. Reason for Deviation and Description of Corrective Action Taken Reason for deviation: Although 800 block maintains a record to demonstrate compliance with most of the requirements of this condition, the record does not specifically document the type of transfer. There is only one type of transfer used at 800 block, transfer by pump. Corrective Action: Language was added to the tank log to document that pumping is the only type of transfer used at the 800 block tank farm.				

Corrective action was to implement a process to record, on a per shift basis, the difference between the N₂ inlet and tank exhaust regulator pressures and revise the permit language to better reflect the desired pressure differential measurement. PTI 334-88D was issued October 20, 2021 and an ROP modification, to incorporate this PTI into the ROP, was received on November 17, 2021. It does not appear that the suggested corrective action was implemented.

SC VI.2. requires the plant to record the date, amount of liquid waste transferred, and the type of transfer (e.g. dempster, tank truck, drum, vacuum transfer, etc.) for each transfer of liquid waste to and from each storage tank and for each dempster depressurization. These records were reviewed on-site and the plant appeared to be meeting the requirement.

Compliance Reporting

The following deviations were reported for this unit for the first semi-annual report of 2020, however it was not carried forward into the second half of 2020 and the violation notice could have included a citation for General Condition 22 for omitting the deviation in the second half of 2020 semi-annual reporting. The plant had some change in key personnel and it appears the plant may have considered the deviation return to compliance.

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6. Method Used to Determine Compliance Status (if different from method specified in RO Permit) EGLE Inspection		7. Description of Deviation Condition requires 800 Block to monitor and record, on a per shift basis, the N2 pressure blanket differential (i.e., difference between the N2 inlet and tank exhaust regulator pressures). This record was not maintained by the facility.		
8. Reason for Deviation and Description of Corrective Action Taken Reason for deviation: Pressure regulators are mechanical devices with fixed setpoints. The N2 inlet regulators are set at 3 PSI and the tank vent outlet regulators are set at a minimum of 8 PSI, as indicated by stamped metal tags affixed to the regulators. Recording the value stamped on these metal tags on a per shift basis was deemed ineffective at actually confirming the N2 pad is working as desired. Technically, this cannot readily be measured so it is calculated based on regulator set points of 3 psig on the inlet nitrogen regulator minus 8 psig on the outlet pressure regulator equals a pressure differential of 5 psig. Corrective Action: Implement process to record, on a per shift basis, the difference between the N2 inlet and tank exhaust regulator pressures. Revise permit language to better reflect the desired pressure differential measurement.				

1. Group or Source Wide ID EU800-01	2. Table/Condition No. SC VI.2	3. Date(s) of Occurrence 1/1/2020	4. Previously reported ? ☐ Yes ☒ No If Yes, Date	5. Duration of Deviation 181 Days
6. Method Used to Determine Compliance Status (if different from method specified in RO Permit) Self-Assessment		7. Description of Deviation Unit did not record the type of transfer (e.g., dempster, tank truck, drum, vacuum transfer, etc.) for each transfer of liquid waste to and from each storage tank, and for each dempster depressurization.		
8. Reason for Deviation and Description of Corrective Action Taken Reason for deviation: Although 800 block maintains a record to demonstrate compliance with most of the requirements of this condition, the record does not specifically document the type of transfer. There is only one type of transfer used at 800 block, transfer by pump. Corrective Action: Language was added to the tank log to document that pumping is the only type of transfer used at the 800 block tank farm.				

NAME



DATE 12/07/2021

SUPERVISOR

