DEPARTMENT OF ENVIRONMENTAL QUALITY
AIR QUALITY DIVISION
ACTIVITY REPORT: Scheduled Inspection

A404346809

FACILITY: Dow Silicones Corporation		**SRN / ID:** A4043
LOCATION: 3901 S Saginaw Rd, MIDLAND		**DISTRICT:** Saginaw Bay
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Jennifer Kraut , Air Specialist		**ACTIVITY DATE:** 10/24/2018
STAFF: Gina McCann	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: Compliance inspection of EU 207-01, EU 207-02 and EU 207-03. All three units were in compliance at the time of the inspection. glm		
RESOLVED COMPLAINTS:		

Inspection Date: 10/24/2018
Inspection Started: 8:30
Inspection Ended: 12:00

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

- **Gina McCann (MDEQ-AQD, Senior Environmental Quality Analyst)**
- **Jennifer Kraut (Air Specialist, DOW Silicones)**
- **Leah Olson-Perry (Environmental Specialist, DOW Silicones)**
- **Logan Miller (Production Engineer for 207 Building, DOW Silicones)**
- **Alec Cielinski (Production Engineer for 207 Building, DOW Silicones)**

Records reviewed as part of the inspection were:

- **ROP Annual report for 2017**
- **ROP Semi-Annual report for 1/1/2018-6/30/2018**
- **2017, 40 CFR Part 64 CAM excursion/exceedance reports**
- **40 CFR Part 64 CAM excursion/exceedance report for 1/1/2018-6/30/2018**
- **40 CFR Part 63 Subpart FFFF (MON MACT) semiannual compliance report**
- **Permit evaluation for PTI 156-06D**

This site visit included the inspection of the following emission units: EU 207-01, EU 207-02 and EU 207-03. At the time of the inspection the facility was in compliance with the units' active permits, applicable state and federal applicable regulations.

EU 207-01: Compliant
EU 207-01 is a silicone rubber manufacturing process. The most recent PTI issued for this process is 134-08. EU 207-01 is controlled by a condenser (19251) and baghouse (12912), which are both subject to CAM requirements of 40 CFR Part 64 for VOCs and particulate, respectively. This emission unit is also subject to the requirements of 40 CFR Part 63, Subpart FFFF, MON MACT.

During the inspection we viewed both the condenser and baghouse operating parameters. There is a north and south baghouse that run in parallel. The process was operating at the time of the inspection. The south baghouse was not operating, but had a differential pressure (dP) of 6.02 "W.C. The pulse jets could be heard when we viewed locations of magnehelics for the baghouses. The facility calibrates the monitoring system on an appropriate basis to comply with VI.8.

The table below shows the observations at the time of the inspection.

Condenser (19251)			Baghouse (12912)		
Exit gas temperature (Fahrenheit)	Alarm set point (Fahrenheit)	Operational Restriction (Fahrenheit)	dP ("W.C.)	Alarm set point ("W.C.)	Operational Restriction ("W.C.)
29.6 F	39.50 F	40 F	3.4 "W.C.	18.00 "W.C.	0.5 -10

Special Condition VI.1. requires the facility to monitor and record on a continuous basis, the exit gas temperature of the glycol condenser (19251). Continuous basis is defined as at least once every 15 minutes. I viewed records from May 21, 2017 and 2018, October 19, 2017 and 2018 and October 24, 2018. Values were below 40 degrees Fahrenheit and continuously recorded.

Special Condition VI.2. requires the facility to monitor and record, on a per shift basis, the dP across the baghouse (12912). I viewed records for the month of October 2017 and October 2018 and the values were in compliance with the process and operational restrictions in the permit.

I did not ask for monthly production records of non-PL bases, PL bases and LSR's combined during the inspection as these are considered business confidential. These records are used to comply with special condition VI.4. The facility provided an overview of how records are managed and emissions calculated. An internal program, Emission Master, generates emission factors based off chemical formulas and modeling of the data. The factors generated in pounds of emission per pounds of product, is used in their Environmental Reporting Database (ERD) to calculate total pounds of emissions.

Within 30 days following the end of each calendar month, the facility shall calculate and record emissions from the process for the previous calendar month to demonstrate compliance with VOC and Ammonia 12-month rolling time period emission limits. I reviewed the 12-month rolling time period ending September 2017 and September 2018. The table below compares emissions to the limits in ton per year (tpy).

Pollutant	September 2017 (tpy)	September 2018 (tpy)	Limit (tpy)
VOC	11.01	11.41	18.4
Ammonia	20.01	19.68	30.0

Compliance Reporting

In the 40 CFR Part 63 Subpart FFFF (MON MACT) semiannual compliance report for reporting period January 1, 2018 through June 30, 2018, one deviation was noted for EU-207. It was discovered on 11/10/2017 during an EHS audit under Michigan Audit Immunity Statute. RCRA tank and container inspection forms were being used to demonstrate compliance with the MON Waste Water Management Unit (WMU) inspection requirements. Corrective action was to implement MACT waste management unit inspection forms in addition to the RCRA inspection forms. The facility explained the choice of wording on the RCRA form was not consistent with the MON requirements. Wording was updated to align with the MON MACT requirements.

Condenser (19251) and baghouse (12912) are both subject to CAM requirements of 40 CFR Part 64 for VOCs and particulate, respectively. Excursions, for the condenser (19251), occur when the exit gas temperature exceeds 40F. No excursions were reported for the time period reviewed.

EU 207-02: Compliant

This is the treated filler process. This process uses a mixer from EU 207-01 to make a product that is not covered by the PTI 134-08. Emissions from this process are controlled by a packed column scrubber (19298) and a water condenser (19296), which are subject to CAM requirements of 40 CFR Part 64 for VOCs, methanol, and particulate and VOCs and methanol, respectively. This emission unit is also subject to the requirements of 40 CFR Part 63, Subpart FFFF, MON MACT.

During the inspection we viewed the process, however it was not operating at the time of the inspection.

Special conditions III.1 and III.2 restricts the exit gas temperature from the chilled water condenser to remain below 15C and to maintain a steady scrubbing liquid flow rate, respectively. I viewed records from December 6, 2017 and October 1, 2018. The liquid flow rate ranged from 50.6 pounds per minute (lb/min) on October 1, 2018 to 54.1 lb/min. on December 6, 2017. The glycol condenser gas temperature remained below 15C during times of operation when the plant was treating product. The facility calibrates the monitoring system on an appropriate basis to comply with III.6.

The permit also requires the packed column scrubber (19298) to be equipped with a low flow switch with a minimum flow rate alarm of 20 lbs/min. During the inspection, we viewed the low flow alarm set at 20 lbs/min.

I did not ask for records of the number of batches processed on a monthly basis, as these are considered business confidential. These records are used to comply with special condition VI.3. The facility provided an overview of how records are managed and emissions calculated. An internal program, Emission Master, generates emission factors based off chemical formulas and modeling of the data. The factors generated in pounds of emission per pounds of product, is used in their Environmental Reporting Database (ERD) to calculate total pounds of emissions.

Within 30 days following the end of each calendar month, the facility shall calculate and record emissions from the process for the previous calendar month to demonstrate compliance with VOC, Methanol and Isopropyl Alcohol (IPA) 12-month rolling time period emission limits. I reviewed the 12-month rolling time period ending September 2017 and September 2018. The table below compares emissions to the limits in ton per year (tpy).

Pollutant	September 2017 (tpy)	September 2018 (tpy)	Limit (tpy)
VOC	0.71	0.81	8.7
Methanol from vent 207-014	0.03	0.03	3.7
IPA from vent 207-014	0.56	0.65	4.9

Compliance Reporting

In the 40 CFR Part 63 Subpart FFFF (MON MACT) semiannual compliance report for reporting period January 1, 2018 through June 30, 2018, one deviation was noted for EU-207. It was discovered on 11/10/2017 during an EHS audit under Michigan Audit Immunity Statute. RCRA tank and container inspection forms were being used to demonstrate compliance with the MON Waste Water Management Unit (WMU) inspection requirements. Corrective action was to implement MACT waste management unit inspection forms in addition to the RCRA inspection forms. The facility explained the choice of wording on the RCRA form was not consistent with the MON requirements. Wording was updated to align with the MON MACT requirements.

The packed column scrubber (19298) and water condenser (19296) are both subject to CAM requirements of 40 CFR Part 64. The packed column scrubber (19298) is a subject device for VOCs, methanol, and particulate and the water condenser (19296) is a subject device for VOCs and methanol, respectively.

Excursions, for the water condenser (19296), occur when the exit gas temperature exceeds 15C. No excursions were reported for the time period reviewed.

EU 207-03: Compliant

This is the liquid silicone rubber manufacturing batch mixer process, which consists of 4 batch mixers. The process is controlled by scrubbers, a venturi scrubber (22426) and water scrubbers (22412 and 23828). The venturi scrubber (22426) is subject to 40 CFR Part 64 CAM requirements for VOC and particulate pollutants. The water scrubbers (22412 and 23828) are subject to 40 CFR Part 64 CAM requirements for VOCs. This emission unit is also subject to the requirements of 40 CFR Part 63, Subpart FFFF, MON MACT.

PTI 156-06D is the latest permit issued for this process. The version "D" revision, removed the annual Octamethylcyclo-tetrasiloxane (D4) emission limit. According to the permit evaluation the previous permit files did not give a reason for the annual emission limit. Since D4 had a 24-hour average screening level, there did not appear to be a need for an annual emission limit, as the applicable requirement given was Rule 225. Removing the annual limit did not change the air toxics review, as that was based on the lb/hr emission limit, which did not change during the PTI 156-06D revision.

PTI 156-06D also lists dust collectors (19313, 19314, 19328, 22409, 22419) as pollution control equipment. Previous compliance inspections discussed how the facility believes the dust collectors should be considered process equipment. The PTI does not list monitoring or recordkeeping requirements for these

collectors and the collectors precede the water scrubbers prior to discharge to the atmosphere. However, special condition IV.2 restricts operation of EU 207-03 unless the fumed silica and crystalline silica dust collectors Nos. 19314, 22409, 22419, 19313, and 19328 are installed and operating properly. This condition cites R336.1331 and R336.1201 as the underlying applicable requirements.

During the inspection we viewed both the venturi scrubber (22426) and the water scrubber (22412 and 23828). Water scrubbers 22412 and 23828 run in parallel flow and temperature parameters. The table below shows the observations at the time of the inspection.

Water Scrubber (22412)		Water Scrubber (23828)						Venturi Scrubber (22426)	
Water Makeup (gpm)		Recycle Liquid Flow (gpm)		Water Makeup (gpm)		Temperature of Recycle Water entering 23828 (Fahrenheit)		Recycle Liquid Flow (gpm)	
Limit	Observed	Limit	Observed	Limit	Observed	Limit	Observed	Limit	Observed
>0.2	0.88	>20	24.96	>0.7	0.99	<68F	60.34	>15	24.01

The facility is required to monitor and record, on a continuous basis, the following parameters:

- water make-up rate for water scrubbers Nos. 22412 and 23828
- recycle liquid temperature of water scrubber No. 23828
- recycle liquid flow rate for water scrubber No. 23828
- recycle liquid flow rate of venturi scrubber No. 22426

"On a continuous basis" is defines as an instantaneous data point recorded at least once every 15 minutes. The facility may also record block average values for 15 minutes of shorter periods calculated from all measured data values during each period.

I reviewed data for the following dates: October 19, 2017 and 2018 and May 21, 2017 and 2018. The facility is maintaining appropriate documentation to ensure compliance. All parameters viewed were within the appropriate range.

Within 30 days following the end of each calendar month, the facility shall calculate and record emissions from the process for the previous calendar month to demonstrate compliance with VOC 12-month rolling time period emission limits. I reviewed the 12-month rolling time period ending September 2017 and September 2018. The table below compares emissions to the limits in ton per year (tpy).

Pollutant	September 2017 (tpy)	September 2018 (tpy)	Limit (tpy)
VOC	1.89	1.73	2.9

Compliance Reporting

In the 40 CFR Part 63 Subpart FFFF (MON MACT) semiannual compliance report for reporting period January 1, 2018 through June 30, 2018, one deviation was noted for EU-207. It was discovered on 11/10/2017 during an EHS audit under Michigan Audit Immunity Statute. RCRA tank and container inspection forms were being used to demonstrate compliance with the MON Waste Water Management Unit (WMU) inspection requirements. Corrective action was to implement MACT waste management unit inspection forms in addition to the RCRA inspection forms. The facility explained the choice of wording on the RCRA form was not consistent with the MON requirements. Wording was updated to align with the MON MACT requirements.

The venturi scrubber (22426) is subject to 40 CFR Part 64 CAM requirements for VOC and particulate pollutants. The water scrubbers (22412 and 23828) are subject to 40 CFR Part 64 CAM requirements for VOCs.

Excursions for water scrubber (22412) occur when the water makeup rate is less than 0.2 gpm. Excursions for the venturi scrubber (22426) occur when the recycle liquid flow rate is less than 15

gpm. Excursions of water scrubber (23828) occur when the water makeup rate is less than 0.7 gpm or the recycle liquid flow rate is less than 20 gpm or the temperature of the recycle liwuid entering the water scrubber exceeds 60 degrees Fahrenheit. No excursions were reported for the time period reviewed.

At the time of the inspection the emission units inspected, were in compliance with their appropriate PTIs and applicable state and federal regulations.

NAME Ulina L. McCann DATE 10/31/18 SUPERVISOR C. Hare