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

A404348828

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:** 05/08/2019
STAFF: Gina McCann	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: EU303-01,EU303-02 and EU303-06		
RESOLVED COMPLAINTS:		

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

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

- **Gina McCann (EGLE-AQD, Senior Environmental Quality Analyst)**
- **Jennifer Kraut (Air Specialist, DSC)**
- **Pranavi Aradhyula (Production Engineer for 303 Building, DSC)**
- **Ben Wieber (Production Engineer for 303 Building, DSC)**

Records reviewed as part of the inspection were:
- **ROP Annual report for 2018**
- **40 CFR Part 64 CAM excursion/exceedance 2018 Annual Report**
- **40 CFR Part 63 Subpart FFFF (MON MACT) 2018 Annual compliance report**

EU303-01
Phenyl methyl fluids and resin hydrolysis and polymerization. This emission unit vents to either the 337 wet scrubber, the THROX, or the site wide scrubbers. This emission unit is subject to 40 CFR Part 63, Subpart FFFF. EU303-01 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The most recent PTI for this emission unit is PTI No. 804-92D.

- **Condenser 3469. This is a CAM subject device for VOC, Benzene, and Toluene**
- **337 wet scrubbers (9950, 9960 – scrubbers typically alternate in operation but can operate in parallel and vent to SV337-001/002, respectively)**
- **FGTHROX**
- **FGSITESCRUBBERS**

Special Condition (SC) III.1. restricts operation of equipment in EU303-01 unless the vent steams from the equipment are exhausted to the associated emission control devices as listed below.

Equipment in EU303-01	Emission control device
a. Chlorosilanes blend and feed tanks	FG337SCRUBBER
b. DV3463 when exhausted through SV303-024	Condenser No. 3469
c. DV3463 when not exhausted through SV303-024	FGTHROX or FGSITEBLOWER or FGSITESCRUBBERS

At the time of the inspection the facility appeared to be meeting this condition.

SC III.2. restricts the outlet glycol temperature of condenser No. 3469 to less than 40 degrees F, when DV3463 is exhausting through SV303-001, SV303-024, or SV303-055. This is also a CAM requirement per

40 CFR Part 64. An excursion is defined as operating when the outlet glycol temperature of condenser 3469 when DV3463 is exhausting through SV303-001, SV303 024, or SV303-055, exceeds 40 degrees F.

At the time of the inspection we viewed condenser No. 3469 and outlet glycol temperature in the control room. See table below.

Condenser #	Process/Operational Restriction	Alarm set point	Outlet Glycol Temperature	Time of Observation
3469	40F or 4.44C (when DV3463 is exhausting through SV303-001, SV303-024, or SV303-055)	2.5 C	-10.1 C	14:39

SC VI.1. is the associated monitoring and recordkeeping requirement to monitor and record, on an continuous basis, the outlet glycol temperature of condenser 3469. During the inspection I reviewed the outlet glycol temperature of condenser No. 3469 from April 1, 2018 through April 1, 2019. One apparent exceedance was identified as the condenser temperature being greater than 40F and the THROX was not in operation. However, the process was not in operation as identified by the kettle level at 0%.

SC IV.1. requires the plant to equip and maintain condenser 3469 with an outlet glycol temperature indicator. They are required to calibrate the temperature indicator in a satisfactory manner. The condenser temperature indicator has a 48 month required preventative maintenance (PM). The condenser was replaced in 2017 and calibrated on September 1, 2018. The subsequent calibration will occur in 2022.

SC VI.2. requires the plant to keep records as required to demonstrate compliance with the emission limit specified in SCI.2. SC I.2. limits VOC emissions to less than 5.4 ton per year (tpy), based on a 12-month rolling time period as determined at the end of each calendar month. I reviewed VOC emissions records for the 12-month rolling time period ending March 2019. VOC emissions were 0.03 tpy.

SC VI.3. through SC VI.6. are CAM monitoring and recordkeeping requirements. See the Compliance Reporting section below for discussion surrounding CAM excursions.

SC VII.1. through VII.6. reporting requirements are discussed under the compliance reporting section of this report.

Compliance Reporting

As part of the records review, the ROP Annual report for 2018, 40 CFR Part 64 CAM excursion/exceedance 2018 Annual Report, and 40 CFR Part 63 Subpart FFFF (MON MACT) 2018 Annual compliance report were all reviewed.

1/1/2018 MON MACT
After a third-party consultant evaluated approximately 1,400 products or other materials, it was determined that several process units, products and distribution operations were either subject to a 40 CFR Part 63 reg not previously identified or subject to a different subpart of 40 CFR Part 63. Corrective action: By April 30, 2019 submit to EPA for approval a CAA Compliance Plan with proposed schedule, including milestones, for all process units, products, and distribution operations to achieve compliance with 40 CFR Part 63. The schedule for compliance will be enforceable as part of the final Consent Decree.

11/1/2018 EU303-01, EU303-02, EU3-03-06 and EU303-07
Environmental calculations for the month of September were performed two days late. Engineer failed to complete the calculations. Corrective Action: Electronic reminder created.

7/30/2018- EU303-MON
Mixer 22400 (agitator) not previously in the LDAR program. Decided should be included in LDAR, added to program, requires visual inspections. During the inspection, I requested weekly AVO LDAR pump and agitator inspection logs following discovery of this deviation. In a follow up email

from J. Kraut on May 10, 2019 discussed that "After the inspection, it was determined that mixer/agitator 22400 was not in-service August 2018 through November 30, 2018. Therefore, attached are the weekly inspection logs for December 2018 through May 2019. Based upon these logs, it doesn't appear AI22400 (agitator 22400) was added to the log until January 2019. At this time, it's unknown as to why it wasn't added to the December 2018 log. A root cause investigation will be conducted, and corrective action will be implemented."

I questioned the logs that they provided for February 2019. There were no leaks identified during the weekly inspection. However on the "leak form submitted" column the operator marked "yes". The reason was the leak was not identified during the weekly inspection, but during routine walk through of the plant.

10/14/2018 Reported as a deviation for clarity, due to reporting in PEAS call. Benzene and toluene leak discovered while loading at trailer at 303 building. Loading operation shut down and the trailer dome was repaired, stopping the leak.

No CAM excursions were reported for in the 2018 annual CAM excursion/exceedance report.

EU303-02

Polymer and resin surge, mixing, filtration, and blending. This emission unit is subject to the requirements of 40 CFR Part 63, Subpart FFFF. EU303-02 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The most recent PTI for this emission unit is PTI No. 804-92B.

- **Condenser (3400). This device a CAM subject unit for VOCs, Benzene, and Toluene**

According to the PTI associated with EU303-02, 804-92B, this process is equipped with the following air pollution control equipment: condenser 3400. During the inspection, DSC informed me that condenser 3400 no longer exists as it was replaced with FGTHROX and FGSITESCRUBBERS. Condenser 3400 was removed from service in 2013. DSC further explained that replacement of the condenser with the THROX and the site-wide scrubbers was done under AQD Rule 285. I did not inspect FGTHROX or FGSITESCRUBBERS (flexible groups associated with EU303-02) during this inspection. However, FGSITESCRUBBERS does not control the emissions related with this emission unit, because they are solvents and not readily absorbed.

The plant follows the SSM plan for FGTHROX and the operators follow a checklist to shut down this unit in the event THROX goes down. The operators manually isolate the kettle (process) by shutting the valve that goes to the THROX and the nitrogen coming into the kettle. The plant can provide electronic data on the kettle level, however valve positions on this unit are not electronic. I could not verify that the valves were shut to isolate the kettle when the THROX has an SSM event. I am also working to determine if the unit can meet the emission limits in SC.1. if uncontrolled for the hour allowed by the approved THROX MAP/SSM plan. I have contacted permits section and asked for their assistance in making this determination.

This PTI should be revised to reflect the current operating conditions at EU303-02. The ROP was renewed on February 20, 2019. On August 22, 2018 the AQD granted an extension on the ROP working draft to October 31, 2018. DSC cited reasons of complexity for the extension request. During the renewal additional CAM language for condenser 3400, even though it had not been installed since 2013.

SC.III.2. restricts operation of EU303-02 unless the control equipment (condenser 3400) is installed and operating properly. This PTI should be revised to reflect the current operating conditions at EU303-02.

SC III.3. requires the plant to equip and maintain condenser 3400 with a coolant flow indicator. Condenser 3400 was removed in 2013. SC VI. 1. is the associated recordkeeping requirement to monitor and record, on a continuous basis, the coolant flow rate of condenser 3400. Condenser 3400 was removed in 2013. This PTI should be revised to reflect the current operating conditions at EU303-02.

SC VI.1. requires the plant to monitor and record, on a continuous basis, the coolant flow rate of condenser 3400. Condenser 3400 was removed in 2013. This PTI should be revised to reflect the current operating conditions at EU303-02.

SC VI.2. requires the plant to keep records are required to demonstrate compliance with the emission limits specified in the emission limits table. SC.I.1. restricts VOC emissions to 4.0 tpy based on a 12-month rolling time period as determined at the end of each calendar month. I reviewed VOC emissions for the 12-month rolling time period ending March 2019. VOC emissions were 0.052 tpy when controlled through FGTHROX.

SC VI.3. through SC VI.6. are CAM requirements for condenser 3400. The facility cannot be meeting these requirements as the condenser was removed in 2013. The ROP should be modified to reflect the current operating conditions at EU303-02.

Discussion regarding the special conditions listed under section VII. Reporting, in EU303-02, is below in the compliance reporting section.

Compliance Reporting
As part of the records review, the ROP Annual report for 2018, 40 CFR Part 64 CAM excursion/exceedance 2018 Annual Report, and 40 CFR Part 63 Subpart FFFF (MON MACT) 2018 Annual compliance report were all reviewed.

No CAM or ROP deviations were reported for this unit. In my opinion, there are several deviations to report regarding compliance with condenser 3400's conditions as it doesn't exist, therefore the plant is not meeting requirements related to this condenser.

1/1/2018 MON MACT
After a third-party consultant evaluated approximately 1,400 products or other materials, it was determined that several process units, products and distribution operations were either subject to a 40 CFR Part 63 reg not previously identified or subject to a different subpart of 40 CFR Part 63. Corrective action: By April 30, 2019 submit to EPA for approval a CAA Compliance Plan with proposed schedule, including milestones, for all process units, products, and distribution operations to achieve compliance with 40 CFR Part 63. The schedule for compliance will be enforceable as part of the final Consent Decree.

11/1/2018 EU303-01, EU303-02, EU3-03-06 and EU303-07
Environmental calculations for the month of September were performed two days late. Engineer failed to complete the calculations. Corrective Action: Electronic reminder created.

7/30/2018- EU303-MON
Mixer 22400 (agitator) not previously in the LDAR program. Decided should be included in LDAR, added to program, requires visual inspections. This agitator is part of EU303-01, see the discussion under EU303-01.

10/14/2018 Reported as a deviation for clarity, due to reporting in PEAS call. Benzene and toluene leak discovered while loading at trailer at 303 building. Loading operation shut down and the trailer dome was repaired, stopping the leak.

EU303-06
Batch and semi continuous polymer and resin processing including reactors, distillation columns, strippers, receivers, storage tanks, accumulators, separators, vacuum pumps, condensers, adsorbers, filters and related equipment. This emission unit is subject to the requirements of 40 CFR Part 61, Subparts A, J, and V, and 40 CFR Part 63, Subpart FFFF. EU303-06 is a CAM subject emission unit subject to the requirements of 40 CFR Part 64. The most recent PTI for this emission unit is PTI No. 420-84E.

- **Condensers (1637, 3458, 3475, 1623, 1645, 3303, 3307). These devices are CAM subject units for VOCs and Benzene.**
- **Carbon drum. This device is a CAM subject unit for VOCs and Benzene.**

There is a note under the pollution control equipment section that states: Prior to discharge of process exhaust to the air through vent no. SV303-050, process gas passes through either the adsorber (1655) or a carbon drum. The adsorber (1655) was removed. This revision should be made to the ROP to reflect actual operations at the plant.

SC III.1. restricts the exhaust gas temperature at the outlet of condenser 3475 to less than 36F. An excursion of the exhaust gas temperature is the exceedance of the operational parameter limit or acceptable range defined in this condition or demonstrated during testing. SC VI.1. is the associated monitoring and recordkeeping requirement to monitor and record, on a continuous basis, the exhaust gas temperature of condenser 1637, 3458, 3475, 1623, 1645, 3303, and 3307, respectively, with instrumentation acceptable to the AQD. During the inspection we reviewed data from April 1, 2018 through April 1, 2019. The plant was in compliance with this condition during this time period.

SC III.2. restricts the exhaust gas temperature at the outlet of condenser 3458 on the silicone mixing process to less than 50F or 10C. An excursion of the exhaust gas temperature is the exceedance of the operational parameter limit of acceptable range defined in this condition or demonstrated during testing. SC VI.1. is the associated monitoring and recordkeeping requirement to monitor and record, on a continuous basis, the exhaust gas temperature of condenser 1637, 3458, 3475, 1623, 1645, 3303, and 3307, respectively, with instrumentation acceptable to the AQD. During the inspection we reviewed data from April 1, 2018 through April 1, 2019. The plant was in compliance with this condition during this time period.

SC III.3. restricts the exhaust gas temperature at the outlet of condenser 1637 to less than 50F or 10C. An excursion of the exhaust gas temperature is the exceedance of the operational parameter limit of acceptable range defined in this condition or demonstrated during testing. SC VI.1. is the associated monitoring and recordkeeping requirement to monitor and record, on a continuous basis, the exhaust gas temperature of condenser 1637, 3458, 3475, 1623, 1645, 3303, and 3307, respectively, with instrumentation acceptable to the AQD. During the inspection we reviewed data from April 1, 2018 through April 1, 2019. The plant was in compliance with this condition during this time period.

SC III.4. restricts the exhaust gas temperature at the outlet of condenser no. 1623, no. 1645, no. 3303 and no. 3307 to less than 50F or 10C. An excursion of the exhaust gas temperature is the exceedance of the operational parameter limit of acceptable range defined in this condition or demonstrated during testing. SC VI.1. is the associated monitoring and recordkeeping requirement to monitor and record, on a continuous basis, the exhaust gas temperature of condenser 1637, 3458, 3475, 1623, 1645, 3303, and 3307, respectively, with instrumentation acceptable to the AQD. During the inspection we reviewed data from April 1, 2018 through April 1, 2019. The plant was in compliance with this condition during this time period.

SC III.5. restricts the weight of the carbon drums to less than 36 pounds. An excursion of the weight of the carbon drum is the exceedance of the operational parameter limit or acceptable range defined in this condition or demonstrated during testing. SC VI.2. is the associated monitoring and recordkeeping requirement to monitor and record the drum weight once every 8 hours. During the inspection we reviewed data from April 1, 2018 through April 1, 2019. The plant was in compliance with this condition during this time period.
During the inspection the values were observed.

Condenser #	Process/Operational Restriction (exhaust gas temp)	Alarm set point (SPA)	Observed Instantaneous Temperature (Celsius)	Time of Observation
1637	< 50F or 10C	8.0	-11	14:44
3458	< 50F or 10C	8.0	0.1	14:46
3475	< 36F or 2.2C	0.2	-5.4	14:48
1623	< 95F or 35C	33	27.6	14:49
1645	< 95F or 35C	33	27.4	14:51
3303	< 95F or 35C	33	28.9	14:51
Carbon Drum Weight				
Process/ Operational Restriction	Observed Weight			Time of Observation
<36 pounds or 16.3 kg	East drum -0.2 kg West drum 9.8 kg			Didn't record

SC.III.6. restricts operation of the process unless the condenser (3458) is installed and operating properly. The plant discussed calibrations that had occurred on 6/29/2017 and 4/01/2013. The condenser is on a 48 month preventative maintenance cycle. At the time of the inspection the plant appeared to be meeting this requirement.

SC III.7 restricts operation of the process unless the carbon drum is installed and operating properly. The plant provided dates of scale calibrations for 3/09/2019 and 3/27/2018. At the time of the inspection the plant appeared to be meeting this requirement.

SC III.8 restricts operation of the toluene stripper and phenyl fluid stripper under vacuum unless the vacuum pump (3473) is vented through a seal fluid tank (3474) followed by a condenser (3475). Noncondensible gases from the condenser (3475)/receiver (3477) shall be vented through the adsorption system. At the time of the inspection the plant appeared to be meeting this requirement.

SC VI.4. through SC VI.7. are CAM monitoring and recordkeeping requirements. See the Compliance Reporting section below for discussion surrounding CAM excursions.

SC VII.1. through VII.6. reporting requirements are discussed under the compliance reporting section of this report.

Compliance Reporting
11/1/2018 EU303-01, EU303-02, EU3-03-06 and EU303-07
Environmental calculations for the month of September were performed two days late. Engineer failed to complete the calculations. Corrective Action: Electronic reminder created.

7/30/2018- EU303-MON
Mixer 22400 (agitator) not previously in the LDAR program. Decided should be included in LDAR, added to program, requires visual inspections.

8/22/2018 EU303-MON; THROX SSM event. The flake resin process operated while THROX was down. The site THROX malfunctioned. The flake resin routed emissions to condenser 24697. Not documented as a MON MACT Group 1 control device. Operated within permitted parameters. Corrective action: Condenser DV24697 will be stack tested in 2019 to show it meets MON group 1 emission control.

1/1/2018 EU303-06 SC VIII.1.
Vent stack SV303-01 is oriented downward, should be oriented upwards. Plant plans to re-permit

10/14/2018 Reported as a deviation for clarity, due to reporting in PEAS call. Benzene and toluene leak discovered while loading at trailer at 303 building. Loading operation shut down and the trailer dome was repaired, stopping the leak.

NAME Lisa R. McCann DATE 5/23/19 SUPERVISOR C. Hare