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

P102749208

FACILITY: DDP Specialty Electronic Materials US, Inc.		**SRN / ID:** P1027
LOCATION: 633 Washington Street, MIDLAND		**DISTRICT:** Saginaw Bay
CITY: MIDLAND		**COUNTY:** MIDLAND
CONTACT: Sara Bennett , Environmental, Health, & Safety Specialist		**ACTIVITY DATE:** 06/20/2019
STAFF: Kathy Brewer	**COMPLIANCE STATUS:** Compliance	**SOURCE CLASS:** MEGASITE
SUBJECT: EU89 inspection		
RESOLVED COMPLAINTS:		

EU89 inspection 6-20-2019
The ownership of EU89 assets were recently transferred from Dow Chemical to DDP.

DDP contact: Sara Bennett
During the inspection we met with production employees, reviewed on site records, viewed the TOX, wet venturi scrubber, environmental monitoring equipment, operator control room continuous monitoring read out panels, and two cyclone exhaust vents. AQD records were also reviewed.

EU89 is subject to the MON (40 CFR Part 63, Subpart FFFF) and OLD (40 CFR Part 63, Subpart EEEE). By virtue of being subject to Subpart FFFF, this emission unit is also subject to the equipment leak provisions of 40 CFR Part 63, Subpart H.

EU89 is a CAM-subject emission unit subject to the requirements of 40 CFR Part 64. The CAM-subject pollutant for this emission unit is VOC.

Based on the site visit and records review the facility appears to be in compliance with the ROP Special conditions for EU89.

On site records review
VE records
12 month rolling emission records and calculations
TOX temperature records
TOX thermocouple calibration records

AQD File review
March 2018, September 2018, March 2019
- **Annual and semi annual ROP Deviation reports**
- **Annual and semi annual CAM reports**
- **40 CFR Part 63 Subpart H Semi annual reports**
- **40 CFR Part 63 Subpart FFFF Semi Annual Reports**

Release reports
PTI 190-12 and 190-12A EVAL forms
MAERS 2018 emissions

EU89 is a copolymer process with reactors, distillation/fractionation columns, separators, storage tanks/silos and related equipment located within the 719/774 block. Raw material is provided by pipeline, rail, or from tanks. There are 4 trains that operate as batch processes. The materials are mixed, sent to a reactor, then either to slurry followed by dewatering/drying, or, to a washing/still operation followed by condensing and decanting then sent to slurry, dewatering, and drying. Packing also performed. There are also some isoctane recovery units.

Sources of emissions include the 4 batch train operations that are vented directly to the TOX and several material handling activities for intermediate and final product that may emit directly to atmosphere. The TOX is a dedicated TOX and does not receive process vents from any other emission unit. Several cyclones are operated to control emissions prior to venting to atmosphere. To reduce in plant particulate, a wet venturi scrubber was installed as a 285 exempt emission unit after PTI 190-12A was issued.

Emission limits
Records reviewed indicate the facility is in compliance with the emission limits

Parameter	Limit (12-month rolling)	date	Value (12-month rolling)
SC I.2 VOC	10.8 tpy	Feb 2018	6.17 tpy
		Aug 2018	5.49

		April 2019	5.21
SC I.3 styrene	3.5 tpy	Feb 2018	2.08 tpy
		Aug 2018	1.67
		April 2019	1.39
SCI.4 PM	2.1 tpy	Feb 2018	1.44 tpy
		Aug 2018	1.35
		April 2019	1.12

Material limits
Material limits are included for one product category, low conversion gel products (LCP). The LCP production is limited to 50% of the annual LCP production capacity to restrict styrene emissions to a level that met the IRSL. Records review indicate the facility is compliance with the material limits.

Date	LCP production capacity (batches/year)	50% of LCP production capacity	Batches in month	12 month rolling LCP production	% 12 month rolling LCP production
Feb 2018	2161	1080	49	612	28
Aug 2018	2161	1080	32	613	28
April 2019	2161	1080	67	515	24

Process/Operational Restrictions
SC III.1 prohibits the facility from operating the portion of the process connected to the TOX unless the TOX is preheated to the minimum temperature demonstrated during stack testing and with a minimum retention time of 0.5 seconds.

The July 2011 stack test TOX temperature established was 717 C (1323 F). A review of TOX operating temperatures found all values to be above 717 C.

Date	TOX preheat temp degrees C (instantaneous)	Time
Feb 10, 2018	755.4	4:39 AM
Aug 10, 2018	754.7	3:06 PM
April 10, 2019	755.3	3:07 PM
June 20, 2019	755.7	7:47 AM
June 20, 2019	754 (AI719) 744 (AI729)	1:38 PM

SC III.2 requires the permittee to maintain the TOX with a temperature monitoring device. The TOX has two temperature probes (AI719 & AI729). Calibration is performed on each probe on an alternating 24 month frequency. Calibration records reviewed showed the temperature probes to be properly calibrated. Calibration records for 2017 -2019 are attached.

The ROP for EU89 contain no specified Design/Equipment or Testing/sampling special conditions

Monitoring/Recordkeeping
SC VI.1 requires the permittee to continuously monitor the preheated temperature of the TOX. Records of TOX operating temperatures were available and reviewed and indicate the facility was incompliance with this condition. The TOX preheat temperatures for February 10 and August 10, 2018 and for April 10 and a portion of June 20, 2019 are attached. During the walk through we observed the TOX unit including the installed temperature monitoring device.

SC VI.2 require the permittee to calculate and record emissions from the process for the previous calendar month to demonstrate compliance with the 12-month rolling time period emission limits in SC I.2, I.3, and I.4. Emission records and calculations were available and reviewed and indicate the facility was incompliance with this condition.

The emissions are based on the number of batches for each product type and an emission factor for the product batch. The emission calculations are based on the information provided with the most recent PTI (No. 190-12A). "Essential" is used the track the emissions based on production information.

Some of the production vents have the option to bypass the TOX vent. The facility tracks the VOC and non VOC emissions not vented to the thermal oxidizer (TOX) or the wet venturi scrubber and includes them in emission calculations and records required by the permit.

There are many sources of VOC emissions that are short in duration, or highly variable in rate, or both and are difficult to control. PTI 190-12A EVAL stated that the TOX provides 99% control for the VOC emissions sent to it, met BACT, Rule 702(a)) for VOC emissions by use of the TOX for as much of the VOC emissions as can practically be done.

The VOC emission rate from the TOX was verified during a July 2011 stack test conducted to demonstrate CAM compliance.

Non-VOC emitting operations vent to atmosphere directly, or after a cyclone, and/or wet venturi scrubber. The wet venturi scrubber was added after the PTI was issued as a 285 exempt emission unit installed to reduce in building particulate. For calculating emissions, the site does not include a reduction attributed to vents sent to the wet venturi scrubber but uses the emission assumptions included in the PTI 190-12A application, submitted and approved prior to the installation of the wet venturi scrubber.

Emission records reviewed for VOC, styrene, and PM were similar to emissions reported in MAERS for 2018.

12 month rolling emissions for February and August 2018, April 2019, and monthly values used for the April 2019 calculation are attached.

SC VI. 3 requires the permittee to conduct quarterly VEs on several vents and either inspect or take corrective action in response to the presence of any VEs. The facility conducts monthly VEs and has added the stack from the wet venturi scrubber to the items to observe. On site records were reviewed for January 2018 through May 2019. No VEs were present in the vents observed. A copy of the VE observation procedure is attached. The instructions require the VE to be conducted during periods of operation. The VE procedure is reviewed with new operators.

Based on the records reviewed the facility appears to be in compliance with this condition.

	Vent	Description	Q1-2018	Q2-2018	Q3-2018	Q4-2018	Q1-2019	Q2-2019
1	SV89012	Feed hopper cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
2	SV89014	C fluid bed dryer cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
3	SV89015	B fluid bed dryer cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
4	SV89016	A fluid bed dryer cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
5	SV89017	H-801 cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
6	SV89018	624 feed hopper cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
7	SV89019	604 feed hopper cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
8	SV89020	614 feed hopper cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
9	SV89044	C-600 dryer cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
10	SV89046	C-550 addback cyclone	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
11	SV89032	(outdoor vented)	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
12	SV89034	(outdoor vented)	No VEs	No VEs	No VEs	No VEs	No VEs	No VEs
13	SV89041 Bulk trailer	(outdoor vented) Not in production since <2017	Not done	Not done	Not done	Not done	Not done	Not done
14	SV89042	(outdoor vented) Not in production since <2017	Not done	Not done	Not done	Not done	Not done	Not done
NA	NA	Wet scrubber						

No VEs	No VEs	No VEs	No VEs	No VEs	No VEs

Reporting

The September 2018 ROP Semi annual reported that the facility determined through an internal audit that an NOCS report update was needed to include the correct number of LDAR subject components.

No other Deviations or CAM excursion or exceedances were reported.

Stack/Vent Restrictions
The following descriptions were provided during the inspection:

Stack & Vent ID	Maximum Exhaust Diameter/Dimensions (inches)	Minimum Height Above Ground (feet)	Description
1. SV89001	36^2	30^2	TOX vent stack
2. SV89014	16^2	45.75^2	C fluid bed dryer cyclone
3. SV89015	16^2	45.75^2	B fluid bed dryer cyclone
4. SV89016	16^2	45.75^2	A fluid bed dryer cyclone
5. SV89044	36^2	139^2	C-600 dryer cyclone
6. SV89055	6^2	40.9^2	Slurry tank vent
7. SV89056	6.5^2	34.5^2	Slurry tank vent
8. SV89057	6^2	40.9^2	Slurry tank vent
9. SV89060	14^2	100^2	Dewatering equipment
10. SV89066	2^2	45^2	Reactor nitrogen purge
11. SV89077	2^2	60^2	Monomer tank
The following stacks and vents are not required to discharge unobstructed vertically upwards.			
12. SV89058	15.3^2	Not restricted^2	Slurry Tank
13. SV89061	8^2	0.75^2	Dewatering equipment
14. SV89074	3^2	50^2	Monomer Tank
15. SV89075	2^2	17^2	Monomer Tank
16. SV89076	2^2	6^2	Monomer Tank
17. SV89089	4^2	25^2	TOX header bypass
18. SV89090	2^2	4^2	Ethyl Benzene Dempster Station

NAME [signature] DATE 6/21/2019 SUPERVISOR C. Hare