

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

A404326098

FACILITY: Dow Corning - Midland Plant		SRN / ID: A4043
LOCATION: 3901 S Saginaw Rd, MIDLAND		DISTRICT: Saginaw Bay
CITY: MIDLAND		COUNTY: MIDLAND
CONTACT: Mike Gruber , Air & Water Team Leader		ACTIVITY DATE: 07/23/2014
STAFF: Jennifer Lang	COMPLIANCE STATUS: Compliance	
SUBJECT: EU212-01, EU212-12, EU2703-17 & FGRULE290 - Scheduled Inspection		SOURCE CLASS: MEGASITE
RESOLVED COMPLAINTS:		

Inspection date: 7/23/14
 Inspection started: 9:00 am
 Inspection ended: 12:00 pm

Dow Corning and MDEQ-AQD staff present during the inspection.

Jenny Lang (MDEQ-AQD, Environment Engineer Specialist)
 Kathy Brewer (MDEQ-AQD, Environmental Quality Analyst)
 Steve Moser (Dow Corning, Assistant General Council)
 Mike Gruber (Dow Corning, Air & Water Team Leader)

EU212-01

Compliance Status: Compliance

Items noted during the inspection.

- EU212-01 covers a batch reaction process consisting of the 6054 Batch Kettle (an agitated, jacketed kettle), a heater, a receiver, and a service water cooled heat exchanger located in 212 building. Emissions are controlled by chilled condenser 6060.
- Air PTI No. 63-14 covers EU212-01. This permit was issued on 5/12/14. ROP modification application no. 201400083 was received by the MDEQ-AQD on 5/19/14. This application covers the addition of PTI 63-14 to the ROP. To date, the PTI has not been rolled into the ROP. PTI 63-14 was used during the inspection for the purpose of determining compliance with air quality rules and regulations.
- Condition no. VI.1 of table EU212-01 of PTI 63-14 states, in part, Dow Corning (hereinafter "DC") shall monitor and record, on a continuous basis (i.e., at least once every 15-minutes), the chilled condenser 6060 coolant temperature. Condition no. III.1 of the same table in the PTI states, while EU212-01 is venting to chilled condenser 6060, DC shall not operate EU212-01 unless the chilled condenser 6060 coolant temperature is -10 degrees C or less.

At approximately 11:10 am, I observed the following operational parameter data for the glycol feed supply line for condenser 6060 in the Building 212 break room via. Brian Nimmo's (DC Manufacturing Engineer) laptop computer. Condenser 6060 controls emissions from 6054 kettle and a process condenser. DC was operating equipment which vents to condenser 6060 at the time of my inspection.

Operational Parameter	Observed Value	Alarm Set Point**
Condenser 6060 coolant temperature	-11.8 C (Instantaneous) -12.7 C (15-minute rolling average)	Hi-Hi ≥ -9.50 degrees C Hi ≥ -10.00 degrees C Lo ≤ -56.00 degrees C Lo-Lo ≤ -56.00 degrees C

**All alarm set points are based on a 15-minute rolling average.

- Condition no. VI.3 of table EU212-01 of PTI 63-14 states, DC shall keep monthly and 12-month rolling time

period records of the VOC emission rate from EU212-01. Condition no. I.1 of the same table in the PTI limits VOC emissions from EU212-01 to 0.88 tpy. During the inspection, DC provided me with the 12-month rolling total VOC emissions through May 2014 (see attached). According to the information provided by DC, the 12-month rolling total VOC emissions through May 2014 were 0.26 tpy.

EU212-12

Compliance Status: Compliance

Items noted during the inspection.

1. EU212-12 covers a batch reaction process consisting of the 20400 Batch Kettle (an agitated, jacketed kettle), a trap, a receiver, and two service water cooled heat exchangers located in 212 building. Emissions are controlled by chilled condenser HX20407.
2. Air PTI No. 48-14 covers EU212-12. This permit was issued on 4/18/14. ROP modification application no. 201400082 was received by the MDEQ-AQD on 5/19/14. This application covers the addition of PTI 48-14 to the ROP. To date, the PTI has not been rolled into the ROP. PTI 48-14 was used during the inspection for the purpose of determining compliance with air quality rules and regulations.
3. Condition no. VI.1 of table EU212-12 of PTI 48-14 states, in part, DC shall monitor and record, on a continuous basis (i.e., at least once every 15-minutes), the chilled condenser HX20407 coolant temperature. Condition no. III.1 of the same table in the PTI states while EU212-12 is venting to chilled condenser HX20407, the permittee shall not operate EU212-12 unless the chilled condenser HX20407 coolant temperature is -10 degrees C or less.

At approximately 11:10 am, I observed the following operational parameter data for the glycol feed supply line for condenser HX20407 in the Building 212 break room via. Brian Nimmo's (DC Manufacturing Engineer) laptop computer. Condenser HX20407 controls emissions from 20400 kettle and process condensers. DC was operating equipment which vents to condenser HX20407 at the time of my inspection.

Operational Parameter	Observed Value	Alarm Set Point***
Condenser HX20407 coolant temperature**	-11.8 C (instantaneous) -12.7 C (15-minute rolling average)	Hi-Hi ≥ -9.50 degrees C Hi ≥ -10.00 degrees C Lo ≤ -56.00 degrees C Lo-Lo ≤ -56.00 degrees C

**This is the same coolant supply line that feeds condenser 6060 at EU212-01.

***All alarm set points are based on a 15-minute rolling average.

4. Condition no. VI.3 of table EU212-12 of PTI 48-14 states, DC shall keep monthly and 12-month rolling time period records of the VOC emission rate from EU212-12. Condition no. I.1 of the same table in the PTI limits VOC emissions from EU212-12 to 4.05 tpy. During the inspection, DC provided me with the 12-month rolling total VOC emissions through May 2014 (see attached). According to the information provided by DC, the 12-month rolling total VOC emissions through May 2014 were 0.36 tpy.
5. Condition no. VI.4 of table EU212-12 of PTI 48-14 states, DC shall keep daily records of the time that EU212-12 vents through SV212-003. Condition no. IV.2 of the same table in the PTI states, DC may vent EU212-12 through SV212-003 while bypassing chilled condenser HX20407 for up to one hour per day. During the inspection on 7/23/14, DC provided me with daily bypass records for the month of May 2014 (see attached). According to the records, DC did not vent through SV212-003 for more than one hour on a daily basis in May 2014.

EU2703-17

Compliance Status: Compliance

Items noted during the inspection.

1. EU2703-17 covers a dedicated waste tank in 2703 building. This emission unit vents to the site THROX and,

when the THROX is not operating, scrubbers 9390A and 9390B. Emissions from transfers from the tank to tank trucks will be controlled by vapor balance back to the tank.

I did not inspect FGTHROX during my inspection as I previously inspected it on 11/13/13 and found it to be in compliance with air quality rules and regulations. FGTHROX was operational at the time of my inspection.

2. Air PTI No. 26-14 covers EU2703-17. This permit was issued on 3/24/14. ROP modification application no. 201400073 was received by the MDEQ-AQD on 5/5/14. This application covers the addition of PTI 26-14 to the ROP. To date, the PTI has not been rolled into the ROP. PTI 26-14 was used during the inspection for the purpose of determining compliance with air quality rules and regulations.
3. Condition no. VI.1 of table EU2703-17 of PTI 26-14 states, in part, DC shall monitor and record, on a continuous basis (i.e., at least once every 15-minutes), the total scrubber water flow rate for scrubber 9390A or B (dependent upon which scrubber is receiving process exhaust). Condition no. III.1 of the same table in the PTI states, while EU2703-17 is venting to either scrubber 9390 A or B, DC shall not operate EU2703-17 unless the total scrubber water flow rate for scrubber 9390 A&B is not less than 6.0 gallons per minute.

At approximately 11:40 am, I observed the following operational parameter data for scrubber nos. 9390 A and B in the control room for EU2703-17 at Building 2703. Pat Horner (DC Manufacturing Engineer) provided the data. Scrubber nos. 9390 A and B are setup in parallel, however, only one scrubber treats emissions at a time. The scrubbers control working and breathing emissions from the 9025C dedicated waste tank at 2703 building when the THROX is down. The waste tank was operational and the THROX was running at the time of my inspection. However, I still noted the following operational parameters with regard to the scrubbers.

Operational Parameter	Observed Value**	Alarm Set Point***
Scrubber nos. 9390 A and B total water flow rate	0 gpm (instantaneous)	Lo ≤ 7 gpm Lo-Lo ≤ 6 gpm

**This is an acceptable water flow rate since the tank was venting to the THROX.

***All alarm set points are instantaneous.

4. Condition no. VI.3 of table EU2703-17 of PTI 26-14 states, DC shall keep monthly and 12-month rolling time period records of the VOC emission rate from EU2703-17. Condition no. I.1 of the same table in the PTI limits VOC emissions from EU2703-17 to 5.72 tpy. During the inspection, DC provided me with the 12-month rolling total VOC emissions through May 2014 (see attached). According to the information provided by DC, the 12-month rolling total VOC emissions through May 2014 were 0.029 tpy. It should be noted that this tank was not operational until 5/1/14.
5. Condition no. VI.4 of table EU2703-17 of PTI 26-14 states, DC shall keep monthly and 12-month rolling time period records of the number of hours that EU2703-17 vents to either scrubber 9390 A or B rather than the THROX. Condition no. IV.2 of the same table in the PTI states, DC may operate EU2703-17 up to 2,000 hours per 12-month rolling time period, as determined at the end of each calendar month, while the THROX is shut down or experiencing a malfunction and venting to either scrubber 9390 A or B. During the inspection, DC provided me with the 12-month rolling total hours that EU2703-17 was venting to either scrubber 9390 A or B through June 2014 (see attached). According to the information provided by DC, the 12-month rolling total hours through June 2014 were 59.5 hours.
6. Condition no. IV.1 of table EU2703-17 of PTI 26-14 states, DC shall not operate EU2703-17 unless the emissions are routed to the THROX and the THROX is installed, maintained, and operated in a satisfactory manner, except as allowed by SC IV.2 of PTI 26-14 (discussed above). I did not inspect the THROX during my inspection as I previously inspected it on 11/13/13 and found it to be in compliance with air quality rules and regulations.

FGRULE290

Compliance Status: Compliance

Items noted during the inspection.

- As described in my inspection report for the inspection conducted on 6/24/14, DC provided emission estimates for emission units EU109-07, EU2505-01, EU3104-16, EU324-10 and EU501-52 on 7/22/14 (see attached). Based upon these estimates, the maximum monthly emissions from June 2013 through May 2014 were as follows:

Emission Unit	Controlled/Uncontrolled	Total lb/mo Air Contaminant Emission Limit	Total Air Contaminants Emitted Per Month**	Categorical lb/mo Emission Limit (e.g., 10/20 lb/mo)	Total Categorical Emissions Per Month**
EU109-07	Controlled	500	57.3	NA	NA
EU2505-01	Uncontrolled	1000	263.4	NA	NA
EU3104-16	Uncontrolled	1000	0	NA	NA
EU324-10	Controlled	500	106.9	NA	NA
EU501-52	Uncontrolled	1000	2	NA	NA

**On 7/22/14, DC provided monthly emission estimates for June 2013 through May 2014. The total air contaminant emissions specified in the table above were the maximum monthly emissions reported during this time period.

- Based upon the information stated in the table above and information provided on 7/22/14 (see attached), DC is in compliance with the emission limits and monitoring/recorkdkeeping requirements outlined in condition nos. I.1 & 2 and VI.1 of table FGRULE290 in the ROP.
- None of the aforementioned emission units emit particulate. Therefore, condition nos. I.3, VI.2.b and VI.3 don't apply.
- With regard to the requirements of condition no. VI.2.a and the requirement to maintain a written description of each emission unit, DC provided me with their written description (including process diagram) for each of the aforementioned emission units during the inspection on 7/23/14. I did not request a copy of this information as it's considered confidential.
- During my inspection on 7/23/14, DC also provided me with a copy of their Rule 290 exemption request worksheet for each of the aforementioned emission units. These worksheets are attached to my inspection report.
- I also confirmed during the inspection on 7/23/14 that there are no IRSL compounds emitted from the aforementioned emission units, and that an "unlisted ann (ITSL)" value of 0.1 is a default value that's used when the AQD hasn't developed a screening level for a particular compound.

NAME Jonny King DATE 7/28/14 SUPERVISOR C. Hail

Recent Permit Compliance Information:

- ✓ EU212-01 (PTI 63-14) – SC No. VI.3 – 12-month rolling total VOC emission calculations through May 2014 are 522.8 lbs./yr or .26 TPY
- ✓ EU212-12 (PTI 48-14) – SC No. VI.3 - 12-month rolling total VOC emission calculations through May 2014 are 727.2 lbs./yr or .36 TPY
- ✓ EU212-12 (PTI 48-14) – SC No. VI.4 – Daily records for May 2014.

Date:	Time SV212-003 Manway Opened	Time SV212-003 Manway Closed	Total Time Open
5/6/2014	10:55	11:18	0.38
5/7/2014	12:30	13:10	0.67
5/10/2014	2:00	2:30	0.50
5/12/2014	2:10	2:31	0.35
5/13/2014	17:15	17:44	0.48
5/14/2014	17:45	18:07	0.37
5/16/2014	3:10	3:35	0.42
5/19/2014	4:03	4:25	0.37
5/21/2014	4:30	4:50	0.33
5/22/2014	12:46	13:04	0.30
5/24/2014	1:49	2:15	0.43
5/26/2014	16:04	16:22	0.30
5/30/2014	17:15	17:40	0.42
5/31/2014	2:10	2:30	0.33

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RCVD BY MDEQ AOD ON 7/23/14

Dow Corning Midland Plant

July 23, 2014

- ✓ EU2703-17 (PTI 26-14) – SC No. VI.3 - 12-month rolling total VOC emission calculations through May 2014 are 57.2 lbs or .029 TPY
- ✓ EU2703-17 (PTI 26-14) – SC No. VI.4 – Monthly and 12-month rolling time period records through May 2014 of the hours that EU2703-17 vents to either scrubber 9390 A or B rather than the THROX.

✓

9025 Tank Vent Tracking												
Count number of hours vent to 9390 is open for last year, max 2000 hr / year												
Date Range:												
Start:	7/9/13 0:00					Total Hours to 9390:						
End:	7/9/14 0:00					59.5						
Hours by Month:												
Jul - 2013	Aug - 13	Sep - 13	Oct - 13	Nov - 13	Dec - 13	Jan - 14	Feb - 14	Mar - 14	Apr - 14	May - 14	Jun - 14	
0	0	0	0	0	0	0	0	0	0	26	33.5	

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Lang, Jennifer (DEQ)

From: steve.moser@dowcorning.com
Sent: Tuesday, July 22, 2014 11:03 AM
To: Lang, Jennifer (DEQ)
Cc: mike.gruber@dowcorning.com
Subject: Information Requested
Attachments: DC006156 - Follow up Information to 6-24-2014 Inspection.pdf; DC006155 - Corrected List of Rule 290 Units_as of 7-11-2014.pdf; DC006154 - EU601-01 Condition VI.7._Visible Emissions Checks.pdf; DC006157 - DC006159 - Rule 290 Units Records_selected units.pdf

Jennifer,

Attached is the information you requested during the most recent inspection, June 24, 2014 (see Documents DC 006154-6156). Also attached, in anticipation of tomorrow's meeting, is the information you requested on selected Rule 290 Units (see Documents DC 006157-6159).

Mike and I look forward to seeing you and Kathy Brewer tomorrow morning. Because of a meeting at the Corporate Center, I will not get to the Midland Plant Site until 9:15am. Mike Gruber, however, will be able to meet you at 9:00am. He has compiled and will have ready for your review information you requested concerning some units permitted and put into operation within the last few months.

As always, thank you for your patience and cooperation.

Steve

Stephen V. Moser
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Rev'd by MDEQ-ADD
on 7/22/14

July 22, 2014

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Information Requested During 06/24/2014 Inspection

- A. **EU601-01 (ROP Mark-up Condition VI.5.)**
VOC Emissions (12-month rolling total as of end of April 2014): 13.79 TPY (27,582.2 lbs/yr)
HCl Emissions (12-month rolling total as of end of April 2014): 0.003 TPY (6.8 lbs/yr)

- B. **EU2703-01 (ROP Mark-up Condition VI.2.)**
VOC Emissions (12-month rolling total as of end of April 2014): 0.23 TPY (455.2 lbs/yr)

- C. **EU601-01 (ROP Mark-up Condition VI.7.)**
Visible Emissions Checks
See attached Document DC006154

- D. **EU601-01 (ROP Mark-up Condition VI.4.)**
Hours of MeViDES production (12-month rolling total as of end of April 2014): 0 hours

- E. **Updated Rule 290 List**
See attached Document DC006155

RCVD BY MDEC-AQD 00 7/22/14

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 Page: 1 OF 1 MDEC-AQD

SITE: MIDLAND PLANT ORGANO SUPPLY CHAIN

Title: 601 CHECKLIST - FILLER TRANSFER SYSTEM EMISSION CHECK SHEET

Document Type:	Checklist
Document Sub-Class:	601 Building Operators
Document Number:	0052.CK.601OP.00014
Version Number: (manual entry)	1.0

When this form is filled out, please give to Operations Leader to fill. Do not send to EVS.

Month/Year: June, 2014

Day	Initials & Time	Vent 20 emitting? (Y/N)	Vent 21 emitting? (Y/N)	Comments
1	Hc 1400	N	N	
2	Hc 1500	N	N	
3	Hc 1300	N	N	
4	Hc 1400	N	N	
5	HCP 0900	N	N	
6	HCP 1230	N	N	
7	Om 0800	N	N	
8	Om 1000	N	N	
9	Om 1100	N	N	
10	Hc 0900	N	N	
11	Hc 1130	N	N	
12	Hc 1330	N	N	
13	Hc 1220	N	N	
14	Hc 1420	N	N	
15	Hc 1300	N	N	
16	Hc 0800	N	N	
17	Om 0900	N	N	
18	Om 1200	N	N	
19	Om 0800	N	N	
20	Om 1300	N	N	
21	Hc 1200	N	N	
22	Hc 1500	N	N	
23	Hc 1230	N	N	
24				
25				
26				
27				
28				
29				
30				
31				

- When Filler Transfer System is being used, vents 20 & 21 must be checked daily for visible emissions.
- If emissions are visible, notify supervision and note maintenance action under comments.

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Current and most complete list of Rule 290 Units (Updated July 11, 2014)

EU106-01	EU2602-01	EU321-02	EU501-10
EU106-02	EU2602-03	EU321-05	EU501-11
EU106-04	EU2703-02	EU321-06	EU501-12
EU106-05	EU2703-04	EU321-07	EU501-13
EU106-06	EU2703-05	EU321-09	EU501-14
EU106-07	EU2703-06	EU321-10	EU501-20
EU106-08	EU2703-07	EU321-11	EU501-22
EU106-09	EU2703-08	EU321-12	EU501-23
EU106-10	EU2703-09	EU321-13	EU501-24
EU106-11	EU2703-10	EU321-14	EU501-29
EU106-12	EU2703-12	EU321-16	EG501-30
EU108-02	EU2703-13	EU321-17	EU501-31
EU109-01	EU2703-14	EU321-18	EU501-32
EU109-02	EU2901-02	EU322-05	EG501-33
EU109-03	EU2901-04	EU322-08	EU501-34
EU109-04	EU2901-05	EU322-09	EG501-36
EU109-05	EU2901-06	EU322-10	EU501-37
EU109-06	EU2901-10	EU324-02	EG501-42
EU109-07	EU2901-14	EU324-03	EG501-44
EU109-09	EU2901-15 *	EU324-04	EU501-47
EU207-04	EU2901-16	EU324-06 *	EU501-48
EU212-02	EU303-10	EU324-09	EU501-50
EU212-03	EU303-12	EU324-10	EU501-51
EU212-04	EU303-13	EU324-11	EG501-52
EU212-05	EG303-14	EU324-12	EU502-02
EU212-06	EU304-01	EU324-13	EU502-04
EU212-07	EU305-01	EU324-14	EU505-04
EU212-08	EU3101-01	EU324-15	EU505-05
EU212-09	EU3102-02	EU324-16	EU602-01
EU212-10	EU3102-05	EU324-17	EU602-02
EU212-11	EU3102-09	EU325-02	EU602-03
EU212-15	EU3104-02	EU325-07	EU602-04
EU212-19	EU3104-06	EU325-08	EU602-05
EU2504-06	EU3104-08	EU340-03	EU602-06
EU2504-07	EU3104-09	EU340-04	EU602-07
EU2504-08	EU3104-14	EU501-03	EU602-08
EU2504-09	EU3104-15	EU501-05	EU602-12
EU2505-01	EU3104-16	EU501-07	EU602-13
EU2505-02	EU3113-02 **	EU501-08	EU602-14

* Equipment removed per ERD

** Moved to 2602, became EU2602-03

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DC 006155

RCVD By MDEQ-AOD on 7/22/14

290 Unit Records:

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EU109-07: subject to air pollution control

chem_name	cas_no	voc	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	itsl	avg_per_itsl
			lbs.													
Cyclic Dimethylsiloxane, D4	556672	N	2.2	0.7	4.9	1.5	0.5	0	1.7	2.1	0.7	1.9	0	2.1	75	24hr
Methyl isobutyl ketone	108101	Y	1.2	0.4	2.7	0.9	0.5	0	0.9	1.5	0.4	1.1	0	1.4	3000	24hr
Toluene	108883	Y	3.3	1.2	7.2	2.3	0.5	0	2.5	3	1.2	2.8	0	2.9	5000	24hr
Toluene	108883	Y	50.6	47.1	24.2	46.1	10.8	19.9	29.2	38.7	36	22.9	36.6	49	5000	24hr
		Totals	57.3	49.4	39	50.8	12.3	19.9	34.3	45.3	38.3	28.7	36.6	55.4		

EU3104-16: no air pollution control

No emissions in 12 month rolling period between Jun 2013 and May 2014

RCvB BY MDEO-ADD 7/22/14

EU324-10: subject to pollution control

chem_name	cas_no	voc	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	itsl	avg_per_itsl
			lbs.													
Cyclic Dimethylsiloxane, D3	541059	N	3.3	1.9	2.8	1.8	2.7	1.5	1.6	2.5	2.1	2.6	2	3.2	50	ann (ITSL)
Cyclic Dimethylsiloxane, D4	556672	N	8.1	4.9	7.2	4.8	6.9	3.6	4	6.6	4.9	6.4	5.7	9	75	24hr
Heptane	142825	Y	30.6	0	0	10.1	29.5	0	85.2	20.8	60.4	50.4	65.3	20.9	3500	8hr
Hexamethyl-disiloxane	107460	N	1.3	0	0	0	0	0	1.3	0	2.6	2	1.3	2.6	240	ann (ITSL)
Tetramethyldi-hydrogendisiloxane	3277267	Y	34.3	23.4	35.5	27.2	31	14.4	14.8	33.9	17.4	21.4	17.2	46.3	120	ann (ITSL)
		Totals	77.6	30.2	45.5	43.9	70.1	19.5	106.9	63.8	87.4	82.8	91.5	82		

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EU501-52: no air pollution control

chem_name	cas_no	voc	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	itsl	avg_per_itsl
			lbs.													
Cyclic Dimethylsiloxane, D4	556672	N	1	1.2	0.8	1	1.2	1	1.2	1	0.9	1.2	1.3	1.2	75	24hr
Dimethylsiloxane, hydroxyl-terminated	70131678	Y	0.5	0.6	0.4	0.5	0.6	0.5	0.6	0.5	0.5	0.6	0.7	0.6	0.1	ann (ITSL)
		Totals	1.5	1.8	1.2	1.5	1.8	1.5	1.8	1.5	1.4	1.8	2	1.8		

EU2505-01: no air pollution control

★ Per Mike Greber on 7/23/14

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RCVD BY MDEQ-AOD ON 7/22/14

chem_name	cas_no	voc	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	itsl	avg_per_it sl
			lbs.													
2,2,4,6,6-pentamethylheptane	13475826	Y	0	2.1	0	2.6	2.1	3	1.7	2.6	1.7	2.2	6	3.1	0.1	unlisted ann (ITSL)
3-octylheptamethyl trisiloxane	17955883	Y	0.8	0	0.3	0.8	0.8	1.6	0.8	0.8	0.4	0.4	0	0	0.1	unlisted ann (ITSL)
Cyclic Dimethylsiloxane, D4	556672	N	4.9	3.8	4.3	3	4.6	2.7	3	4.1	2.7	4.4	4.4	4.4	75	24hr
Cyclic Dimethylsiloxane, D5	541026	N	73.3	58.4	61.6	47.1	69.3	41.1	44.9	63.1	41.7	67.2	67.6	68.4	200	24hr
Dimethyl Siloxane, trimethylsiloxy terminated	63148629	N	0	0.2	0	0	0	0.6	0	0	0	0	0	0.6	2	ann (ITSL)
Dimethylcyclosiloxanes - CARN 69430246 D6 & higher	DUM000181	★ N	0	0	0	0	0	0	0	0.1	0	0.1	0.1	0.1	0.1	unlisted ann (ITSL)
Hexadiene	592427	Y	2.5	2.2	2.3	1.6	2.4	1.5	1.6	2.1	1.5	2	2.2	2.4	264	ann (ITSL)
Hexamethyldisiloxane	107460	N	0	0	0.2	0	0	0	0	0	0	0	0.1	0	240	ann (ITSL)
Linear dimethyl siloxane, MD2M, Decamethyltetrasil	141628	N	0	0	4.5	0	1.1	0	0	1.1	0	1.1	2.2	0	0.1	ann (ITSL)
Linear dimethyl siloxanes, MD3M and higher	141639	N	0	1.1	0.3	0.3	0.2	3.7	0.3	0	0	0.3	0	4	0.1	ann (ITSL)
Tetramethylcyclotetra-siloxane- 1,3,5,7	DUM000049	Y	25.9	21.5	24.3	16.1	25	15.6	17.9	21.2	15.1	20.3	21.4	19.3	0.1	ann unlisted (ITSL)
Tetramethyldivinyl-di-siloxane	2627954	Y	1.3	1	1.2	0.9	1.3	1	1	1.1	0.7	0.8	0.9	0.8	16	ann (ITSL)
Tetramethyltetra vinyl-cyclotetrasiloxane	2554065	Y	0	0	0.1	0	0	0.1	0	0	0	0	0.1	0.1	0.1	unlisted ann (ITSL)
Cyclic Dimethylsiloxane, D4	556672	N	7.3	6.7	7	4.3	7.4	4.9	2.9	7.8	5.5	7.7	6.8	7.8	75	24hr
Cyclic Dimethylsiloxane, D5	541026	N	109.6	101.4	104.8	64.2	112	74.7	43	118.6	83.5	116	102.9	117.7	200	24hr
Dimethylcyclosiloxanes - CARN 69430246 D6 & higher	DUM000181	★ N	0.2	0.1	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.2	0.1	0.2	0.1	unlisted ann (ITSL)
Hexadiene	592427	Y	3	2.8	2.8	1.7	3.1	2	1.1	3.3	2.3	3.2	2.9	3.2	264	ann (ITSL)
Tetramethylcyclotetra-siloxane- 1,3,5,7	DUM000049	Y	28.2	26.1	27	16.6	28.9	19.3	11	30.6	21.5	29.9	26.5	30.4	0.1	unlisted ann (ITSL)
Tetramethyldivinyl-di-siloxane	2627954	Y	0.9	0.8	0.8	0.5	0.8	0.6	0.4	1	0.7	0.9	0.8	0.9	16	ann (ITSL)
Totals			257.9	228.2	241.7	159.9	259.2	172.5	129.7	257.7	177.4	256.7	245	263.4		

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DOW CORNING MIDLAND PLANT RULE 290 EXEMPTION REQUEST

Consider using exemption Rule 290 if your process fits one or more of the categories below. Work with Environmental Services to confirm eligibility, documentation, and recordkeeping procedures.

CATEGORY	REQUIREMENTS
1) Non-carcinogen non-VOCs with an ITSL greater than or equal to 2.0 ug/m ³ and non-carcinogenic VOCs. (A)(B)(C)(D)(E)	a) Process may not emit more than 500 lbs/month if control efficiencies are used in determining emissions. OR b) Process may not emit more than 1000 lbs/month if no control efficiencies are used in determining emissions.
2) Carcinogens or non-carcinogenic air contaminants with an ITSL greater than or equal to 0.04 and less than 2.0 ug/m ³ and/or air contaminants with an IRSL greater than or equal to 0.04 ug/m ³ . (A)(B)(C)(D)(E)	a) Process may not emit more than 10 lbs/month of category 2 components if control efficiencies are used in determining emissions. OR b) Process may not emit more than 20 lbs/month of category 2 components if no control efficiencies are used in determining emissions.
3) Particulates with an ITSL greater than 2.0 ug/m ³ . (A)(E)	a) Particulate concentrations must be controlled by appropriately designed and operated fabric filter collector or equivalent to less than/equal to 0.01 lbs of particulate/1000 lbs of exhaust gases b) Exhaust gas flow rate must be less than 30,000 cfm c) Opacity less than or equal to 5% opacity

- (A) Particulates may be considered as an air contaminant under category 1 or 2, or independently under category 3. If, however, they are considered under 1 or 2, Part 3 rules still apply.
- (B) Monthly limitations are NOT rolling averages.
- (C) Processes that have emissions in both categories 1 and 2 can not exceed 500 lbs/month (1000 lbs/month).
- (D) Processes may not emit air contaminants (excluding non-carcinogenic VOCs) with an ITSL less than 0.04 ug/m³, or carcinogens with an IRSL less than 0.04 ug/m³.
- (E) Emissions must be reported by process group in year-end emissions reporting.

Please complete the following as appropriate:

Circle all of the categories that your process meets: (1a) (1b) (2a) (2b) (3a,b,c)

Circle the category where particulates are being considered: (1 or 2) (3) **No Particulates**

Have the following items been completed or submitted?

- Group/description added to GROUP EDIT screen. Start description with "(RULE 290)"
- Equipment and vents added to EQUIPMENT DATA and VENT DATA screen
- Equipment/vent/group/exempt status attachment built in GROUP RELATIONSHIP screen
- Process drawing in CADD format added to EST files
- Control equipment specifications added to EST files
- Calculations in sufficient detail to show compliance to limits described above added to EST files
- Calculations of emissions/batch, emissions/lb of throughput or other added to EST files
- Records of batches, throughput or other available upon request to verify compliance

CALC OF BATCH EMISSIONS IN SPREAD SHEET IN 100 pg. 14 of 18

MIDLAND PLANT RULE 290 EXEMPTION SUMMARY

Consider using exemption Rule 290 if your process fits one or more of the categories below. Work with Environmental Services to confirm eligibility, documentation, and recordkeeping procedures.

CATEGORY	REQUIREMENTS
1) Non-carcinogen VOCs, acetone, completely methylated siloxane, and perchlorobenzotrifluoride. OR Non-carcinogenic air contaminants with an ITSL $\geq 2.0 \text{ ug/m}^3$.	a) Controlled emissions $\leq 500 \text{ lb./month.}$, OR b) Uncontrolled emissions $\leq 1000 \text{ lb./ month.}$
2) Non-carcinogenic non-VOCs with an ITSL $\geq 0.04 \text{ ug/m}^3$ and $< 2.0 \text{ ug/m}^3$.	a) Controlled emissions $\leq 10 \text{ lb./month,}$ OR b) Uncontrolled emissions $\leq 20 \text{ lb./ month.}$
3) Carcinogens with an IRSL $\geq 0.04 \text{ ug/m}^3$.	a) Controlled emissions $\leq 10 \text{ lb./month,}$ OR b) Uncontrolled emissions $\leq 20 \text{ lb./ month.}$
4) Particulate with an ITSL $> 2.0 \text{ ug/m}^3$.	a) Particulate concentrations must be controlled by appropriately designed and operated fabric filter collector or equivalent to $\leq 0.01 \text{ lb. of particulate/1000 lb. of exhaust gases.}$ b) Exhaust gas flow rate must be $\leq 30,000 \text{ cfm.}$ c) Opacity must be $\leq 5\% \text{ opacity.}$

- (A) Particulate may be considered as an air contaminant under categories 1, 2 or 3, or independently under category 4. If they are considered under categories 1, 2 or 3, Part 3 of the administrative air rules still apply.
- (B) Monthly limitations are NOT rolling averages.
- (C) The emissions in categories 1, 2, and 3 may not exceed a total of 500 lb./month, controlled (1000 lb./month, uncontrolled). "Uncontrolled" means that control equipment efficiencies are not used in calculations when determining if the source meets the lbs/month requirements.
- (D) Processes may not emit air contaminants (excluding non-carcinogenic VOCs) with an ITSL less than 0.04 ug/m^3 or carcinogens with an IRSL less than 0.04 ug/m^3 . Initial Threshold Screening Levels (ITSL) are exposure limit for non-carcinogens. IRSLs are screening levels for known or suspected carcinogens. ITSL and IRSL values can be located in the Environmental Reporting Database under COMPONENT DETAILS.
- (E) Emissions must be reported by process group in year-end emissions reporting.
- (F) N_2 , O_2 , CO_2 , Ar, Ne, He, H_2 and water vapor are naturally occurring components of air and are not considered air contaminants. These compounds are not counted toward the emission limitations of this rule.

Please complete the following as appropriate:

Circle all of the categories that your process meets: (1a) (1b) (2a) (2b) (3a) (3b) (4a,b,c)

Circle the category where particulate are being considered: (1, 2 or 3) (4) No Particulates

Have the following items been completed or submitted?

- Group/description added to GROUP EDIT screen. Start description with "(RULE 290)"
- Equipment and vents added to EQUIPMENT DATA and VENT DATA screen
- Equipment/vent/group/exempt status attachment built in GROUP RELATIONSHIP screen
- Process drawing in CADD format added to EST files
- Control equipment specifications added to EST files
- Calculations in sufficient detail to show compliance to limits described above added to EST files
- Calculations of emissions/batch, emissions/lb. of throughput or other added to EST files
- Records of batches, throughput or other available upon request to verify compliance

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MICHIGAN AREA RULE 290 EXEMPTION SUMMARY

Dow Corning INTERNAL
VIDEO-ACD

Consider using exemption Rule 290 if your process fits one or more of the categories below. Work with Environmental Services to confirm eligibility, documentation, and recordkeeping procedures.

Building: 3104 Equipment Group: EU3104-16 Product: IT Z-6084

CATEGORY	REQUIREMENTS
1) Non-carcinogen VOCs, acetone, completely methylated siloxane, and perchlorobenzotrifluoride. OR Non-carcinogenic air contaminants with an ITSL ≥ 2.0 ug/m ³ .	a) Controlled emissions ≤ 500 lb./month., OR b) Uncontrolled emissions ≤ 1000 lb./ month.
2) Non-carcinogenic non-VOCs with an ITSL ≥ 0.04 ug/m ³ and < 2.0 ug/m ³ .	a) Controlled emissions ≤ 10 lb./month, OR b) Uncontrolled emissions ≤ 20 lb./ month.
3) Carcinogens with an IRSLS ≥ 0.04 ug/m ³ .	a) Controlled emissions ≤ 10 lb./month, OR b) Uncontrolled emissions ≤ 20 lb./ month.
4) Particulate with an ITSL > 2.0 ug/m ³ .	a) Particulate concentrations must be controlled by appropriately designed and operated fabric filter collector or equivalent to ≤ 0.01 lb. of particulate/1000 lb. of exhaust gases. b) Exhaust gas flow rate must be $\leq 30,000$ cfm. c) Opacity must be $\leq 5\%$ opacity.

(A) Particulate may be considered as an air contaminant under categories 1, 2 or 3, or independently under category 4. If they are considered under categories 1, 2 or 3, Part 3 of the administrative air rules still apply.

(B) The emissions in categories 1, 2, and 3 may not exceed a total of 500 lb./month, controlled (1000 lb./month, uncontrolled). "Uncontrolled" means that control equipment efficiencies are not used in calculations when determining if the source meets the lbs/month requirements.

(C) Processes may not emit air contaminants (excluding non-carcinogenic VOCs) with an ITSL less than 0.04 ug/m³, or carcinogens with an IRSLS less than 0.04 ug/m³. Initial Threshold Screening Levels (ITSL) are exposure limits for non-carcinogens. IRSLS are screening levels for known or suspected carcinogens. ITSL and IRSLS values can be located in the Environmental Reporting Database under COMPONENT DETAILS

(D) N₂, O₂, CO₂, Ar, Ne, He, H₂, and water vapor are naturally occurring components of air and are not considered air contaminants. These compounds are not counted toward the emission limitations of this rule.

(E) Monthly emission totals must be calculated each month to demonstrate compliance. Annual emissions must be reported by process group in year-end emissions reporting.

Please complete the following as appropriate:

Circle all of the categories that your process meets: (1b) (2a) (2b) (3a) (3b) (4a,b,c)

Circle the category where particulate are being considered: (1, 2 or 3) (4) No Particulates

Have the following items been completed or submitted?

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- Process drawing in CADD format added to EST files and Building Files
- Control equipment specifications added to EST files and Building Files
- Calculations in sufficient detail to show compliance to limits described above added to EST files and Building Files

Record Keeping Requirements:

- A) A description of the emission unit must be maintained throughout the life of unit.
- B) Monthly calculations identifying the quality, nature, and quantity of the air contaminant emissions must be maintained sufficient to demonstrate compliance with the emission limits outlined in this rule.
- C) The records are maintained on file for the most recent 2-year period and are made available to the air quality division upon request.

Name: *[Signature]* Date: 1/15/14

Author: Kathy Gillard-Skornia	Effective Date: April 7, 2000
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MICHIGAN AREA RULE 290 EXEMPTION SUMMARY

Dow Coming Internal
9/14/00

Consider using exemption Rule 290 if your process fits one or more of the categories below. Work with Environmental Services to confirm eligibility, documentation, and recordkeeping procedures.

Building: 324 Equipment Group: 324-10

1-5121, 1T-3030, 1T-8140, Q2-35675, 1T-4
1-8180, 1-8114, 2-5057, 2-50575, 2-7107, F1
Cleanout-D4, Toluene, & Heptane

CATEGORY	REQUIREMENTS
1) Non-carcinogen VOCs, acetone, completely methylated siloxane, and perchlorobenzotrifluoride. <p style="text-align: center;">OR</p> Non-carcinogenic air contaminants with an ITSL $\geq 2.0 \text{ ug/m}^3$.	a) Controlled emissions $\leq 500 \text{ lb./month.}$ OR b) Uncontrolled emissions $\leq 1000 \text{ lb./ month.}$
2) Non-carcinogenic non-VOCs with an ITSL $\geq 0.04 \text{ ug/m}^3$ and $< 2.0 \text{ ug/m}^3$.	a) Controlled emissions $\leq 10 \text{ lb./month,}$ OR b) Uncontrolled emissions $\leq 20 \text{ lb./ month.}$
3) Carcinogens with an IRSL $\geq 0.04 \text{ ug/m}^3$.	a) Controlled emissions $\leq 10 \text{ lb./month,}$ OR b) Uncontrolled emissions $\leq 20 \text{ lb./ month.}$
4) Particulate with an ITSL $> 2.0 \text{ ug/m}^3$.	a) Particulate concentrations must be controlled by appropriately designed and operated fabric filter collector or equivalent to $\leq 0.01 \text{ lb. of particulate/1000 lb. of exhaust gases.}$ b) Exhaust gas flow rate must be $\leq 30,000 \text{ cfm.}$ c) Opacity must be $\leq 5\% \text{ opacity.}$

- (A) Particulate may be considered as an air contaminant under categories 1, 2 or 3, or independently under category 4. If they are considered under categories 1, 2 or 3, Part 3 of the administrative air rules still apply.
- (B) The emissions in categories 1, 2, and 3 may not exceed a total of 500 lb./month, controlled (1000 lb./month, uncontrolled). "Uncontrolled" means that control equipment efficiencies are not used in calculations when determining if the source meets the lbs/month requirements.
- (C) Processes may not emit air contaminants (excluding non-carcinogenic VOCs) with an ITSL less than 0.04 ug/m^3 , or carcinogens with an IRSL less than 0.04 ug/m^3 . Initial Threshold Screening Levels (ITSL) are exposure limits for non-carcinogens. IRSLs are screening levels for known or suspected carcinogens. ITSL and IRSL values can be located in the Environmental Reporting Database under COMPONENT DETAILS
- (D) N_2 , O_2 , CO_2 , Ar, Ne, He, H_2 and water vapor are naturally occurring components of air and are not considered air contaminants. These compounds are not counted toward the emission limitations of this rule.
- (E) Monthly emission totals must be calculated each month to demonstrate compliance. Annual emissions must be reported by process group in year-end emissions reporting.

Please complete the following as appropriate:

Circle all of the categories that your process meets: (1a) (1b) (2a) (2b) (3a) (3b) (4a,b,c)

Circle the category where particulate are being considered: (1, 2 or 3) (4) No Particulates

Have the following items been completed or submitted?

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- Control equipment specifications added to EST files and Building Files
- Calculations in sufficient detail to show compliance to limits described above added to EST files and Building Files

Record Keeping Requirements:

- A) A description of the emission unit must be maintained throughout the life of unit.
- B) Monthly calculations identifying the quality, nature, and quantity of the air contaminant emissions must be maintained sufficient to demonstrate compliance with the emission limits outlined in this rule.
- C) The records are maintained on file for the most recent 2-year period and are made available to the air quality division upon request.

Name: _____ Date: _____

Author: Kathy Gillard-Skomin	Effective Date: April 7, 2000
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MICHIGAN AREA RULE 290 EXEMPTION SUMMARY

Down Coming INTERNAL
ST HQ Q AOC

Consider using exemption Rule 290 if your process fits one or more of the categories below. Work with Environmental Services to confirm eligibility, documentation, and recordkeeping procedures.

Building: 501 Equipment Group: E6501-0052 Product: C21-3563

CATEGORY	REQUIREMENTS
1) Non-carcinogen VOCs, acetone, completely methylated siloxane, and perchlorobenzotrifluoride. <p style="text-align: center;">OR</p> Non-carcinogenic air contaminants with an ITSL $\geq 2.0 \text{ ug/m}^3$.	a) Controlled emissions $\leq 500 \text{ lb./month.}$ <p style="text-align: center;">OR</p> b) Uncontrolled emissions $\leq 1000 \text{ lb./ month.}$
2) Non-carcinogenic non-VOCs with an ITSL $\geq 0.04 \text{ ug/m}^3$ and $< 2.0 \text{ ug/m}^3$.	a) Controlled emissions $\leq 10 \text{ lb./month,}$ <p style="text-align: center;">OR</p> b) Uncontrolled emissions $\leq 20 \text{ lb./ month.}$
3) Carcinogens with an IRSL $\geq 0.04 \text{ ug/m}^3$.	a) Controlled emissions $\leq 10 \text{ lb./month,}$ <p style="text-align: center;">OR</p> b) Uncontrolled emissions $\leq 20 \text{ lb./ month.}$
4) Particulate with an ITSL $> 2.0 \text{ ug/m}^3$.	a) Particulate concentrations must be controlled by appropriately designed and operated fabric filter collector or equivalent to $\leq 0.01 \text{ lb. of particulate/1000 lb. of exhaust gases.}$ b) Exhaust gas flow rate must be $\leq 30,000 \text{ cfm.}$ c) Opacity must be $\leq 5\% \text{ opacity.}$

- (A) Particulate may be considered as an air contaminant under categories 1, 2 or 3, or independently under category 4. If they are considered under categories 1, 2 or 3, Part 3 of the administrative air rules still apply.
- (B) The emissions in categories 1, 2, and 3 may not exceed a total of 500 lb./month, controlled (1000 lb./month, uncontrolled). "Uncontrolled" means that control equipment efficiencies are not used in calculations when determining if the source meets the lbs/month requirements.
- (C) Processes may not emit air contaminants (excluding non-carcinogenic VOCs) with an ITSL less than 0.04 ug/m^3 , or carcinogens with an IRSL less than 0.04 ug/m^3 . Initial Threshold Screening Levels (ITSL) are exposure limits for non-carcinogens. IRSLs are screening levels for known or suspected carcinogens. ITSL and IRSL values can be located in the Environmental Reporting Database under COMPONENT DETAILS
- (D) N_2 , O_2 , CO_2 , Ar, Ne, He, H_2 and water vapor are naturally occurring components of air and are not considered air contaminants. These compounds are not counted toward the emission limitations of this rule.
- (E) Monthly emission totals must be calculated each month to demonstrate compliance. Annual emissions must be reported by process group in year-end emissions reporting.

Please complete the following as appropriate:

Circle all of the categories that your process meets: (1a) (1b) (2a) (2b) (3a) (3b) (4a,b,c)

Circle the category where particulate are being considered: (1, 2 or 3) (4) No Particulates

Have the following items been completed or submitted?

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- Equipment/vent/group/exempt status attachment built in GROUP RELATIONSHIP screen
- Process drawing in CADD format added to EST files and Building Files
- Control equipment specifications added to EST files and Building Files *no control eq. for this E6*
- Calculations in sufficient detail to show compliance to limits described above added to EST files and Building Files

Record Keeping Requirements:

- A) A description of the emission unit must be maintained throughout the life of unit.
- B) Monthly calculations identifying the quality, nature, and quantity of the air contaminant emissions must be maintained sufficient to demonstrate compliance with the emission limits outlined in this rule.
- C) The records are maintained on file for the most recent 2-year period and are made available to the air quality division upon request.

Name: *Kathy Gillard* Date: 11/20/2012

Author: Kathy Gillard-Skornia	Effective Date: April 7, 2000
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