

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

A404325150

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: 05/06/2014
STAFF: Jennifer Lang	COMPLIANCE STATUS: Compliance	SOURCE CLASS: MEGASITE
SUBJECT: Scheduled Inspection - EU108-01, EU311-01, EU340-01 & EU340-03		
RESOLVED COMPLAINTS:		

Inspection date: 5/6/14
 Inspection started: 9:00 am
 Inspection ended: 11:15 pm

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

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

EU108-01

Compliance Status: Compliance

Items noted during the inspection.

- EU108-01 covers the platinum catalyst manufacturing process. Catalyst manufactured in this process is used at other production facilities on-site. EU108-01 is equipped with the following air pollution control (APC) equipment: refrigerated condenser (20729), carbon adsorption system, and a hydrogen chloride scrubber (tank 20734).
- Condition no. VI.1 of table EU108-01 of ROP No. MI-ROP-A4043-2008 (hereinafter "ROP") states, while producing Platinum IV, Dow Corning (DC) shall monitor and record, once per hour, the refrigerated condenser (20729) coolant inlet temperature. Condition no. III.1 of the same table in the ROP states, DC shall not produce Platinum IV unless the refrigerated condenser is installed and operating properly. Proper operation of the refrigerated condenser includes maintaining a coolant inlet temperature of -20 degrees F (-28.9 degrees C) or less. At approximately 9:58 am, I observed the following operational parameter data for the refrigerated condenser (20729) in the control room for EU108-01 at Building 108. Nate Bussiere (DC Manufacturing Engineer) provided the data. The refrigerated condenser controls emissions from a tank and a reactor. DC was operating equipment which vents to the condenser at the time of my inspection.

Operational Parameter	Observed Value	Alarm Set Point**
Refrigerated condenser 20729 coolant inlet temperature	-35.1 degrees C (instantaneous)	≥ -29 degrees C

**All alarm set points are instantaneous. This is a secured process alarm (SPA) which cannot be changed by an operator.

It should be noted that DC operators also record the coolant inlet temperature for condenser 20729 on an hourly basis. However, they are also monitoring and recording this data continuously in DCS and PI.

During the inspection, DC informed me that they would be revising their PTI with regard to the condenser temperature limit as they've had some reportable deviations in their Title V report associated with it. According to Mike Gruber, these were paperwork deviations as they were no emissions during the reported time periods.

According to DC's Title V deviation report received on 3/14/14, the condenser temperature for 20729 condenser exceeded -20 degrees F on 12/5/13 for 1.5 hours at EU108-01. The maximum condenser temperature was 17 degrees F. This occurred during a non-emitting step and calculations showed no increase in emissions. The deviation occurred when the kettle was loaded and began the heat up step before the condenser was below the required temperature. The written procedures in the SOP were not followed. The building followed up with the operator. The building is in the process of modifying the control logic so that the process cannot be started until the condenser temperature is within permitted limits.

3. Condition no. VI.2 of table EU108-01 of the ROP states, within 30 days following the end of each calendar month, DC shall calculate and record emissions from the process for the previous calendar month to demonstrate compliance with the 12-month rolling time period emission totals specified in table EU108-01. Condition no. I.2 of the same table in the ROP limits VOC emissions from EU108-01 to 1.4 tpy (based on a 12-month rolling time period as determined at the end of each calendar month). During the inspection, I asked for the 12-month rolling total VOC emissions through March 2014 for EU108-01. On 5/16/14, I received the requested information. According to data provided by DC (see attached), the 12-month rolling total VOC emissions through March 2014 for EU108-01 was 0.352 tpy.
4. Condition no. VI.3 of table EU108-01 of the ROP states, DC shall maintain records of carbon replacement for the carbon adsorption system. Condition no. VI.4 of the same table in the ROP states, DC shall maintain batch production records in sufficient detail to demonstrate compliance with condition number IX.2 of table EU108-01 in the ROP. Condition no. IX.2 of table EU108-01 in the ROP states, DC shall replace the activated carbon before the sum of the Platinum II and IV batches would exceed 45 pounds of 1,3-butadiene loading to the carbon control system. During the inspection, Nate Bussiere showed me their log regarding 1,3-butadiene loading to the carbon adsorption system (see attached). A copy of this log was provided to me on 5/16/14. The log indicated change out dates for carbon drums A and B (or 1 and 2) on 4/18/14 and 11/29/13, respectively. DC is currently using a "points system" based on number of batches produced in order to determine when they've reached the 45 pound 1,3-butadiene loading limit. The carbon adsorption system is comprised of two carbon drums in series (drum nos. 1 & 2). Since the original PTI was issued, DC has installed scales on both carbon drums, so they're also tracking the weight of the drums. DC is planning to submit a revision to their PTI to revise the monitoring and recordkeeping elements of the permit to reflect the use of the scales as opposed to the current "point system". During the inspection at approximately 10:08 am, I observed weights of 3.6 and 1.1 kilograms for drum nos. 1 and 2, respectively, in the control room for EU108-01 at Building 108. Nate Bussiere provided the data. DC was operating equipment which vents to the carbon system at the time of my inspection. Nate indicated most of the process vents to this system.
5. Condition no. IX.3 of table EU108-01 of the ROP states, DC shall not produce Platinum II unless the HCl scrubber (tank 20734) is installed and operating properly. Condition no. IX.4 of the same table in the ROP states, if the permittee does not replace the scrubbing solution in the HCl scrubber before each batch production of Platinum II, the permittee shall implement corrective action and maintain a record of action taken to prevent reoccurrence. According to Nate, fresh water and bicarbonate are added to the tank before each batch production of Platinum II. During the inspection, Nate showed me the log of the last time the scrubbing solution in tank 20734 was changed out. Based on the log, the last time the scrubbing solution in the tank was changed was on 4/9/14. According to Nate, they only produce Platinum II a couple of times a month. Batch time for Platinum II is approximately 30 hours. Nate indicated that the reaction vessel is vented to tank 20734.

EU311-01

Compliance Status: Compliance

Items noted during the inspection.

1. EU311-01 covers the HCl/MeCl recovery process including, scrubbers, tanks, columns, vaporizer, absorber, compressor and related equipment. Several processes at DC vent to this recovery process. EU311-01 is equipped with the following APC equipment: absorber 2810 and packed bed scrubber 2812 (in series with vent to atmosphere), and absorber 24101 and packed bed scrubber 24102 (in series with vent to atmosphere). According to Dan Theimer (DC Manufacturing Engineer), absorber 2810/scrubber 2812 was installed first, and absorber 24101/scrubber 24102 was installed later. Dan further stated that emissions from the process are vented to the fluidized bed reactors (FBR) at EU325-01 approximately 95% of the time. The remaining 5% of the time, emissions are vented to the absorbers/scrubbers. EU311-01 was venting to the

FBR at the time of my inspection. However, they continue to run the absorbers and scrubbers due to storage tank emissions. Condition no. IX.1 of table EU311-01 of ROP No. MI-ROP-A4043-2008 (hereinafter "ROP") states, in part, DC shall not operate the process unless either the air pollution control equipment is installed and operating properly or the vent stream is sent to the FBR at EU325-01.

- Condition no. VI.1 of table EU311-01 of the ROP states, in part, DC shall monitor and record, on a continuous basis (i.e., at least once every 15-minutes), the liquid flow rate of absorbers 2810 and packed bed scrubber 2812. Condition no. III.1 of the same table in the ROP states, if the liquid flow rate of absorber 2810 is less than 4.0 gallons per minute (gpm) (2000 lbs/hr), the permittee shall implement corrective action and maintain a record of action taken to prevent reoccurrence. Condition no. III.2 of the same table in the ROP states, if the liquid flow rate of packed bed scrubber 2812 is less than 2.4 gpm (1200 lbs/hr), the permittee shall implement corrective action and maintain a record of action taken to prevent reoccurrence. At approximately 10:30 am, I observed the following operational parameter data for absorber 2810/scrubber 2812 in the control room for EU311-01 at Building 311. Dan Theimer (DC Manufacturing Engineer) provided the data. At the time of my inspection, 2890 column vent was exhausting to the FBR (EU325-01), however, storage tank emissions were being exhausted to the absorber/scrubber.

Operational Parameter	Observed Value	Alarm Set Point**
Absorber 2810	2705 lbs/hr (instantaneous)	≤ 2000 lbs/hr
Packed bed scrubber 2812	1698 lbs/hr (instantaneous)	≤ 1200 lbs/hr

**All alarm set points are instantaneous. This is a secured process alarm (SPA) which cannot be changed by an operator. It should also be noted that if the liquid flow rate drops below the allowed limits for the absorber/scrubber, the process is equipped with a valve interlock to cut off vent feed.

- Condition no. VI.1 of table EU311-01 of the ROP states, in part, DC shall monitor and record, on a continuous basis (i.e., at least once every 15-minutes), the liquid flow rate of absorbers 24101 and packed bed scrubber 24102. Condition no. III.3 of the same table in the ROP states, if the liquid flow rate of absorber 24101 is less than 2.5 gallons gpm (1250 lbs/hr), the permittee shall implement corrective action and maintain a record of action taken to prevent reoccurrence. Condition no. III.4 of the same table in the ROP states, if the liquid flow rate of packed bed scrubber 24102 is less than 1.0 gpm (500 lbs/hr), the permittee shall implement corrective action and maintain a record of action taken to prevent reoccurrence. At approximately 10:30 am, I observed the following operational parameter data for absorber 24101/scrubber 24102 in the control room for EU311-01 at Building 311. Dan Theimer (DC Manufacturing Engineer) provided the data. At the time of my inspection, 24195 column vent was exhausting to the FBR (EU325-01), however, storage tank emissions were being exhausted to the absorber/scrubber.

Operational Parameter	Observed Value	Alarm Set Point**
Absorber 24101	2312 lbs/hr (instantaneous)	≤ 1250 lbs/hr
Packed bed scrubber 24102	1774 lbs/hr (instantaneous)	≤ 500 lbs/hr

**All alarm set points are instantaneous. This is a secured process alarm (SPA) which cannot be changed by an operator. It should also be noted that if the liquid flow rate drops below the allowed limits for the absorber/scrubber, the process is equipped with a valve interlock to cut off vent feed.

- Condition no. VI.2 of table EU311-01 of the ROP states, within 30 days following the end of each calendar month, DC shall calculate and record emissions from the process for the previous calendar month to demonstrate compliance with the 12-month rolling time period emission totals specified in table EU311-01. Condition no. I.2 of the same table in the ROP limits HCl emissions from EU311-01 to 4.0 tpy (based on a 12-month rolling time period as determined at the end of each calendar month). Condition no. I.5 of the same table in the ROP limits methyl chloride emissions to 2.5 tpy (based on a 12-month rolling time period as determined at the end of each calendar month). During the inspection, I asked for the 12-month rolling total HCl and methyl chloride emissions through March 2014 for EU311-01. On 5/16/14, I received the requested information. According to data provided by DC (see attached), the 12-month rolling total HCl and methyl chloride emissions through March 2014 for EU311-01 was 0.001 and 0.074 tpy, respectively.
- Condition no. VII.4 of table EU311-01 of the ROP states, each semiannual report of deviations shall include summary information on the number, duration and cause of CAM excursions and/or exceedances and the

corrective actions taken. Condition no. VII.5 of the same table in the ROP states, each semiannual report of deviations shall include summary information on the number, duration and cause (including unknown cause, if applicable) for CAM monitor downtime incidents (other than monitor downtime associated with zero and span or other daily calibration checks, if applicable). According to the latest ROP deviation report received on 3/14/14 for reporting period 1/1/13 through 12/31/13, there were no CAM excursions and/or exceedances or monitor downtime incidents for EU311-01.

6. Condition no. IX.3 of table EU311-01 of the ROP states, DC shall not operate EU311-01 in vent down maintenance mode for more than 120 hours per year. During the inspection, Dan provided me with DC's year-to-date maintenance mode total for 2014. According to Dan, for January through March 2014, DC ran 27 hours, 10 minutes in maintenance mode. Valve no. FV1509 is the maintenance valve. DC tracks the time the valve is in the open position in order to determine compliance with the 120 hour limit. Dan said that DC never valved up the new side (i.e., the side which can vent to absorber 24101/scrubber 24102) to vent to valve no. FV1509 during maintenance. Therefore, the total number provided by DC only includes the older side (i.e., the side which can vent to absorber 2810/scrubber 2812).
7. During the inspection, Dan informed me that they lost city water to the absorbers/scrubbers on 4/11/14. This loss affected other emission units on site. Mike said affected processes were able to respond (i.e., shutdown, etc.) so that there were no excess emissions which required reporting pursuant to AQD Rule 912. The duration of the city water loss was from 4/11/14 through 4/12/14.

EU340-01

Compliance Status: Compliance

Items noted during the inspection.

1. EU340-01 covers the calcium chloride process including condensers, scrubbers, columns, vaporizers, storage tanks, compressor and related equipment. EU340-01 is equipped with the following APC equipment: absorber (8745A), scrubber (8745B).
2. Air PTI No. 34-04B covers EU340-01. This permit was issued on 7/9/13. ROP modification application no. 201300123 was received by the MDEQ-AQD on 7/22/13. This application covers the addition of PTI 34-04B to the ROP. To date, the PTI has not been rolled into the ROP. PTI 34-04B was used during the inspection for the purpose of determining compliance with air quality rules and regulations.
3. Condition no. VI.1 of table EU340-01 of PTI no. 34-04B states, DC shall maintain a record of the date, time and duration of every low flow alarm, as well as, the actions taken to restore proper flow for scrubber no. 8745B and absorber 8745A. Condition nos. IX.1 through 3 of the same table in the ROP state:
 - Condition no. IX.1 – DC shall not operate the process unless absorber no. 8745A and scrubber no. 8745B are installed and operating properly. Proper operation for scrubber no. 8745B means the scrubbing water flow always exceeds 2.5 gallons per hour. (Note: Although the permit states gallons per hour, I think it's supposed to be gpm as condition no. IX.3 below specifies gpm for scrubber 8745B, and it also agrees with DC's alarm setpoint.)
 - Condition no. IX.2 – DC shall equip and maintain absorber no. 8745A with a liquid flow indication device. An alarm shall warn the operator whenever the coolant flow rate drops below 50 gpm.
 - Condition no. IX.3 – DC shall equip and maintain scrubber no. 8745B with a liquid flow indication device that shall warn the operator whenever the scrubbing water flow rate is less than 2.5 gpm (1250 lbs/hr).

At approximately 10:45 am, I observed the following operational parameter data for absorber 8745A/scrubber 8745B in the control room for EU340-01 at Building 311. Dan Theimer (DC Manufacturing Engineer) provided the data. At the time of my inspection, the process was not running as they were preparing to do maintenance. Dan indicated that although the process was not running, emissions from the storage tanks were still being directed to the absorber/scrubber prior to discharge to the atmosphere.

Operational Parameter	Observed Value	Alarm Set Point**
Absorber 8745A	74.3 gpm (instantaneous)	Lo –Lo ≤ 50 gpm

Scrubber 8745B	7028 lbs/hr (instantaneous)	Lo-Lo \leq 1250 lbs/hr
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**All alarm set points are instantaneous. This is a secured process alarm (SPA) which cannot be changed by an operator.

4. Condition no. VI.2 of table EU340-01 of PTI no. 34-04B states, within 30 days following the end of each calendar month, DC shall calculate and record emissions from the process for the previous calendar month to demonstrate compliance with the 12-month rolling time period emission totals specified in table EU340-01. Condition no. I.4 of the same table in the PTI limits methyl chloride emissions from EU340-01 to 2.6 tpy (based on a 12-month rolling time period as determined at the end of each calendar month). Condition no. I.7 of the same table in the PTI limits VOC emissions to 5.0 tpy (based on a 12-month rolling time period as determined at the end of each calendar month). During the inspection, I asked for the 12-month rolling total methyl chloride and VOC emissions through March 2014 for EU340-01. On 5/16/14, I received the requested information. According to data provided by DC (see attached), the 12-month rolling total methyl chloride and VOC emissions through March 2014 for EU340-01 was 0 and 0.006 tpy, respectively.
5. Condition no. VII.1 of table EU340-01 of PTI no. 34-04B states, each semiannual report of deviations shall include summary information on the number, duration and cause of CAM excursions and/or exceedances and the corrective actions taken. Condition no. VII.2 of the same table in the PTI states, each semiannual report of deviations shall include summary information on the number, duration and cause (including unknown cause, if applicable) for CAM monitor downtime incidents (other than monitor downtime associated with zero and span or other daily calibration checks, if applicable). According to the latest ROP deviation report received on 3/14/14 for reporting period 1/1/13 through 12/31/13, there were no CAM excursions and/or exceedances or monitor downtime incidents for EU340-01.

EU340-03

Compliance Status: Compliance

Items noted during the inspection.

1. EU340-03 (or tank T53) is an AQD Rule 290 emission unit subject to the requirements of 40 CFR Part 63, Subpart EEEE (OLD MACT), and 40 CFR Part 60, Subpart Kb. Tank T53 is a 100,000 gallon methanol storage tank. Methanol stored in the tank is used at the following buildings on-site: 601, 505, 2703, 321 and 324. The storage and distribution of methanol is controlled from 311 building. Methanol was being fed to various processes during my inspection.
2. According to DC's latest notification of compliance status report (NOCSR) for the OLD MACT dated 10/4/07, tank T53 uses vapor balancing to control emissions. DC is also monitoring and recording the pressure within the tank on a continuous basis (although this is not required by the MACT). Tank T53 is equipped with a pressure control valve that is set to open at 10 psig. At approximately 11 am, I observed the following operational parameter data associated with the tank in the control room for EU340-03 located in 311 Building. Dan Theimer (DC Manufacturing Engineer) provided the data.
 - Tank T53 was 60% full.
 - The internal pressure within the tank was 5.1 psig (instantaneous).
 - The Lo-Lo pressure alarm was set at \leq 1 psig (presumed to be instantaneous).
 - The Hi - Hi pressure alarm was set at \geq 13 psig (presumed to be instantaneous).
 - The nitrogen blanket pressure within the tank is kept between 5 - 10 psig.
 - The nitrogen pressure was 5.1 psig (instantaneous).
3. On page 1 of DC's OLD MACT NOCSR dated 10/4/07, it states tank 53 is currently controlled as required by 40 CFR Part 60, Subpart Kb or 60.112b and as required by the OLD MACT. However, during the inspection, Mike stated that tank 53 is only controlled as required by the OLD MACT. Steve Moser of DC pointed out that condition no. IX.2 in table EU340-03 of the ROP states, for a storage tank assigned to the OLD 40 CFR Part 63, Subpart EEEE affected source that is subject to control under 40 CFR Part 60 (NSPS), Subpart Kb, Dow Corning may elect to comply only with the requirements of 40 CFR Part 63, Subpart EEEE for storage tanks meeting the applicability criteria for control in Table 2 of Subpart EEEE. Therefore, this supports DC's decision to only comply with the OLD MACT.

4. Mike stated that previously under NSPS Subpart Kb, tank 53 was controlled with a closed vent system and a control device (i.e., a carbon control system). Mike further stated that the closed vent and carbon control are still in place, however, DC does not use it as they're using vapor balancing under the OLD MACT to control emissions.

NAME *Jerry [Signature]*

DATE *5/16/14*

SUPERVISOR *C. [Signature]*

Lang, Jennifer (DEQ)

From: steve.moser@dowcorning.com
Sent: Friday, May 16, 2014 11:42 AM
To: Lang, Jennifer (DEQ)
Cc: mike.gruber@dowcorning.com
Subject: Information Requested During May 6 Inspection
Attachments: DC006105 EU108-01, EU311-01 and EU340-01 Rolling Emissions.pdf; DC006106 EU108-01 Carbon Drum Record.pdf

Jennifer,

Attached is the follow up data you requested during your inspection last week. I apologize for not getting this to you sooner. Mike provided me the information almost right away, and I just forgot to mark it and send it on.

See you next Monday. My recollection is that we agreed to start at 10:00am to give me a little more time for my trek back from Grand Rapids. I hope that still works for you. Thanks.

Steve

Stephen V. Moser
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Dow Corning Midland Plant

May 16, 2014

Data Requested During 05/06/2014 Inspection

A.	EU108-01 (ROP Mark-up Condition VI.2.) VOC Emissions (12-month rolling total as of end of March 2014):	0.352 TPY (704.6 lbs/yr)
B.	EU311-01 (ROP Mark-up Condition VI.2.) HCl Emissions (12-month rolling total as of end of March 2014): MeCl Emissions (12-month rolling total as of end of March 2014):	0.001 TPY (1.74 lbs/yr) 0.074 TPY (147.6 lbs/yr)
C.	EU340-01 (ROP Mark-up Condition VI.2.) VOC Emissions (12-month rolling total as of end of March 2014): MeCl Emissions (12-month rolling total as of end of March 2014):	0.006 TPY (12.9 lbs/yr) 0 TPY (0 lbs/yr)

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EU108-01
SC VI.4.

RCVD BY HDEG AOD
on 5/16/14.

Carbon Drum Changeout Record

These records must be kept for 5 years as part of the ROP reporting guidelines.

Change Drum 'A' after Accumulating 15 pts
Plat IV (2-0707) = 1 pt
Plat II (3-8015) = 2 pts

Date Drum 'A' put into service 4-18-14
Initial Weight of drum 'A' (before service) 110 lbs kg
Date Drum 'A' removed from service _____
Final Weight of drum 'A' (after service) _____ lbs kg
Drum 'A' Number A2
Drum 'A' Batch Number 000 7733473

Initial weight of vent drum 'B'
(may need to be carried over from previous log sheet) 113.3 lbs kg
Date vent drum 'B' put into service 11-29-13
Drum 'B' Number B2
Drum 'B' Batch Number 7540425

Drum 'A' - 1st in line, on 15 point schedule
Drum 'B' - 2nd in line, final drum before atmospheric vent, on scale

Product Name	Batch Number	Running Total of Points	2nd drum weight, lbs*	Initials
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	0007770432	1	0	MF
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	7759556	1	.3	ME
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	7702556	3	.4	ME
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	772087	4	.4	ME
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	7724726	5	.4	ME
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	775289	6	.4	MD
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	7778915	9	.4	MD
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	0007780440	10	1.0	MF
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	0007788120	11	1.1	MF
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	7789820	12	1.1	ME
<input checked="" type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015	1196027	13	1.1	ME
<input type="checkbox"/> 2-0707 <input type="checkbox"/> 3-8015				
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As of 6/1/2006, the brine chiller unit does not need to be running during a Plat II campaign. Vent permit is updated to reflect this change. SOP's/run sheets reflect this change also. Verify brine pump is running though or interlocks will shut system down.

- * Drum weight of 2nd drum in line ('B') for vent not to exceed 45 lbs initial weight, if greater than 45 lbs, change out with fresh carbon drum so as to not exceed vent permit requirements.