Permit Reference Number: BR9685IX
Operator: Dow Corning Ltd
Installation: Barry Silicon-Based Manufacturing Installation
Form Number: Agency Form / BR9685IX / A2 / Form Dated 1st March 2010

Quarterly Reporting of Emissions to Air for the period from: Q3 2016

Emission Point	Substance / Parameter	Emission Limit Value	Result [1]	Units	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
A26	Class B VOC's	No limit applies	3.1281	kg/hr	Gas chromatography	09/08/2016 14:25	In House Validated Method	3.6%
A26	Siloxanes	Agreed limit(6)	1.4132	kg/hr	Gas chromatography	09/08/2016 14:25	In House Validated Method	3.6%
A27	Siloxanes	Agreed limit(6)	0.3333	kg/hr	Gas chromatography	09/08/2016 14:12	In House Validated Method	3.6%
A43	Hydrogen chloride	10mg/m3	5.5247	mg/m3	Ion chromatography	09/08/2016 11:47	In House Validated Method	3.6%
A44	Hydrogen chloride	10mg/m3	See note 8	mg/m3	Ion chromatography	N/A	In House Validated Method	3.6%
A57	Hydrogen chloride	10mg/m3	See note 10	mg/m3	Ion chromatography	N/A	In House Validated Method	3.6%
A60	Class B VOC's	5000 kg/year(7)	0.0001	kg/hr	Gas chromatography	17/08/2016 14:30	In House Validated Method	3.6%
			88.1515	Kg YTD				
A65	Siloxanes	Agreed limit(6)	0.5498	kg/hr	Gas chromatography	09/08/2016 10:07	In House Validated Method	3.6%
A68	Class B VOC's	5000 kg/year(7)	0.7674	kg/hr	Gas chromatography	09/08/2016 09:56	In House Validated Method	3.6%
			2801.7690	Kg YTD				
A68	Siloxanes	Agreed limit(6)	2.1031	kg/hr	Gas chromatography	09/08/2016 09:56	In House Validated Method	3.6%
A78	Class A VOC's	No limit. Temperature (°C)	35.3730	°C	RTD	22/09/2016 07:16	Internally Calibrated	0.02%
A79	Siloxanes	Agreed limit(6)	1.3385	kg/hr	Gas chromatography	10/08/2016 14:58	In House Validated Method	3.6%
A85	Siloxanes	Agreed limit(6)	0.0614	kg/hr	Gas chromatography	10/08/2016 14:30	In House Validated Method	3.6%

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.
[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.
[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.
[6] Emission limit to be agreed following completion of IP14. This was deferred for consideration with IP25. No limit applies.
[7] Emission limit agreed following completion of IP4 (5000 kg/year).

Dow Corning Notes:
(8) A44 is now decommissioned (vent is released via A43).
(9) Releases modelled as part of IP16. Agency agreed that releases do not require abatement and that limit no longer applies. Instead the vent temperature will be recorded on form A2 quarterly to ensure vent condenser performance does not deteriorate. A new temperature transmitter was installed in 2009 to give continuous temperature monitoring with operator alarm for elevated condenser outlet temperature to trigger condenser cleaning operations. Result recorded is the maximum temperature value obtained during the reporting period.
(10) Unable to sample A57 this quarter due to access restrictions for safety reasons – NRW informed on 17th August 2016.

Signed  Insert name Judith Sartor Date…..26th October 2016

(authorised to sign as representative of Operator)

Permit Reference Number: BR9685IX
Installation: Barry Silicon-Based Manufacturing Installation
Form Number: Agency Form / BR9685IX / W1 / Form Dated 1st March 2010

Operator: Dow Corning Ltd

Quarterly Reporting of Emissions to Water (other than to Sewer) for the period from Q3 2016

Emission Point	Substance / Parameter	Emission Limit Value	Result [1]	Units	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty [5]
W1 via M1	Flow	11 000 m^3/day	7997	m^3/day	Agreed(10)	03/08/2016	MCERT Approved	+/- 0.5%
W1 via M1	Flow	625 m^3/hour	599	m^3/hour	Agreed(10)	26/09/2016	MCERT Approved	+/- 0.5%
W1 via M1	Temperature	40 °C [6]	32.13	°C	RTD(12)	21/9/16	MCERTS Equiv(12)	+/- 0.55 °C
W1 via M1	pH – Min pH - Max	≥ 6 ≤ 9	6.82 8.36		To be agreed(11)	21/8/16 3/7/16	Under Review(11)	+/- 4%
W1 via M1	Suspended solids	30 mg/l [6]	25.10	mg/l	SCA Blue Book 105	2/8/16	Under Review	+/- 6mg/l
W1 via M1	BOD_5	20 mg/l [16]	3.00	mg/l	SCA Blue Book 130	8/7/16	UKAS	+/- 21%
W1 via M1	Copper	0.1 mg/l [6]	0.14	mg/l	Inductively Coupled Plasma	2/8/16	In house validated method	+/- 0.0096 mg/l
W1 via M1	Zinc	0.5 mg/l [6]	0.10	mg/l	Inductively Coupled Plasma	31/8/16	In house validated method	+/- 0.02 mg/l
W1 via M1	Hydrocarbon oil	No visible sheen	None		Visual Check	Quarter	N/A	N/A
W2	pH – Min pH - Max	≥ 6 ≤ 9	7.67 8.4		pH probe	21/8/16 2/8/16	In house validated method	+/- 4%
W2	Suspended solids	30 mg/l [16]	21.875	mg/l	SCA Blue Book 105	3/8/16	Under Review	+/- 6mg/l
W2	BOD_5	20 mg/l [16]	1	mg/l	SCA Blue Book 130	9/8/16	UKAS	+/- 21%
W2	COD	125 mg/l [16]	31.4	mg/l	Offsite Analysis	25/8/16	UKAS	Unknown
W2	Copper	0.15 mg/l [7,16]	0.0238	mg/l	Inductively Coupled Plasma	2/8/16	In house validated method	+/- 0.0096 mg/l
W2	Zinc	0.25 mg/l [7,16]	0.1214	mg/l	Inductively Coupled Plasma	2/8/16	In house validated method	+/- 0.02 mg/l
W2	Hydrocarbon oil	No visible sheen	None		Visual Check	Quarter	N/A	N/A

[1] The result given is the maximum value (or the minimum value in the case of a limit that is expressed as a minimum) obtained during the reporting period, expressed in the same terms as the emission limit value. Where the emission limit value is expressed as a range, the result is given as the 'minimum – maximum' measured values.
[2] Where an internationally recognised standard test method is used the reference number is given. Where another method that has been formally agreed with the Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, e.g. gas chromatography.
[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.
[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.
[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.
[6] Not more than 5% of measurements in the reporting period shall exceed the limit value.
[7] To be reported for each effluent transfer from W809 to W413.

Dow Corning Notes:
(8) The result is the 95%ile reading for the reporting period to demonstrate compliance with the emission limit value stated, which is a 95%ile limit.
(9) Old note now removed (not applicable).
(10) Instrument and measurement technique has been reviewed under improvement item IP8. The final treated effluent Danfloss flow meter FT5098 has been MCERT approved. It has been agreed that from 1 October 2009 onwards that the dry flow rate discharge limit of 11,000 m3/day will apply and that reported flow data will relate purely to treated effluent with storm water flow (from W952 penstock valve) excluded from the totalised discharge from release point W1.
(11) Instrument and measurement technique has been reviewed under improvement item IP10. Existing pH meters will be replaced by MCERT certified pH meter upon failure. Current meters deemed satisfactory in the interim.
(12) Instrument and measurement technique was reviewed under Note 7 Table 2.2.5 and Agency responded. A New MCERT equivalent resistance thermometer was installed by Dow Corning in Q4 2007.
(13) Note in DC permit; 'No spot sample can exceed the limit value by more than 50%'.
(14) pH breach reported 12 Feb 2014
(15) BOD breach reported 23 Jan 2014
(16) no spot sample shall exceed the emission limit value by more than 50%

Comments~:
1. **There were 3 instances where copper exceeded the daily limit. Quarterly averages are below permit limits.**

Signed  Insert name Judith Sartor Date…..26th October 2016
(authorised to sign as representative of Operator)