

Reference Number: BU21101S

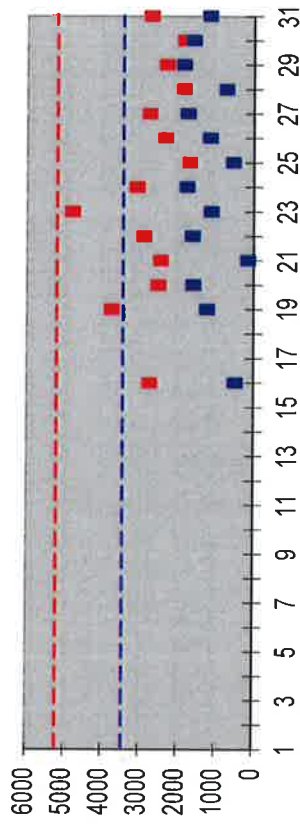
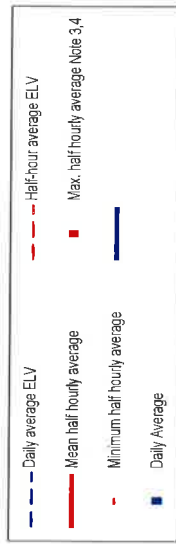
Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1st February 2006

Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of October 2017

Daily and Half-hourly Average Monitoring Data



Monthly summary		Date																															
Half-hourly average																																	
	Monthly maximum	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	5250	
	Monthly mean																																
	Monthly minimum																																
	Total invalid results																																
Daily average	Sum of exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	
	Monthly maximum																																
	Monthly average																																
	Sum of exceedances Note 1																																
Monthly summary		Date																															
Half-hour average ELV																																	
Max. half hourly average Note 3,4																																	
Mean half hourly average																																	
Minimum half hourly average																																	
No. of invalid results																																	
No. of exceedances of ELV Note 2																																	
Daily average ELV																																	
1856																																	
Daily average																																	
1209																																	
Sum of exceedances Note 1																																	
Value exceeds ELV (Y/N)		N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
		1243	1611	160.6	1627	1130	1780	557	1172	1754	746.8	385.6	351.1	1380.0																			

Note 1: Not more than one calendar monthly average during any rolling twelve-month period shall exceed the limit value by more than 10%.

Note 2: Not more than one half hour period (commencing on the hour or half hour) during any 24-hour period shall exceed the daily average limit value of 3500mg/m³ by more than 50%.

Note 3: Max. Half hourly averages to be reported in the event of an exceedance of 3500mg/m³.

Note 4: All results corrected to 273K, 101.3kPa.

Note 5: Major annual plant outage to 14th October 2017. Intermittent start up/shut down due to Dow Corning feedstock supply issues. Spike close to max ½ hrly ELV is a false data point due to instrument calibration.

Signed

(authorised to sign as representative of Operator)

Date: 30th January 2018

Reference Number: BU21101S

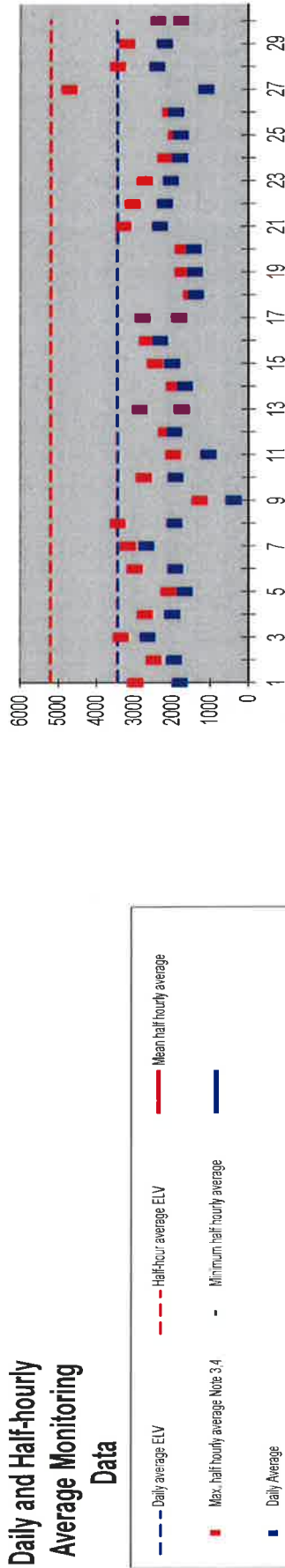
Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1st February 2006

Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of November 2017

Daily and Half-hourly Average Monitoring Data



	Monthly summary		Date																											
Half-hourly average			Half-hour average ELV																											
	Monthly maximum		2578	2492	3359	2721	3102	2998	3168	3440	1279	2752	1976	2166	2652	1959	2463	2679	2779	1507	1727	1727	3389	3031	2722	2190	1912	2662	4725	3438
	Monthly mean		Mean half hourly average																											
	Monthly minimum		Minimum half hourly average																											
	Total invalid results		No. of invalid results																											
Daily average	Sum of exceedances		No. of exceedances of ELV Note 2																											
			Daily average ELV																											
	Monthly maximum		2698																											
	Monthly average		1798 Note 4																											
	Sum of exceedances Note 1		0 Note 1 Value exceeds ELV (Y/N)																											

Note 1: Not more than one calendar monthly average during any rolling twelve-month period shall exceed the limit value by more than 10%.

Note 2: Not more than one half hour period (commencing on the hour or half hour) during any 24-hour period shall exceed the daily average limit value of 3500mg/m³ by more than 50%.

Note 3: Max. Half hourly averages to be reported in the event of an exceedance of 3500mg/m³.

Note 4: All results corrected to 273K, 101.3kPa.

Note 5: 09.11.17 feedstock limitation, plant down 14hrs. Spike close to max ½ hrly ELV is a false data point due to instrument calibration.

Signed

(authorised to sign as representative of Operator)

Date: 30th January 2018

Reference Number: BU21101S

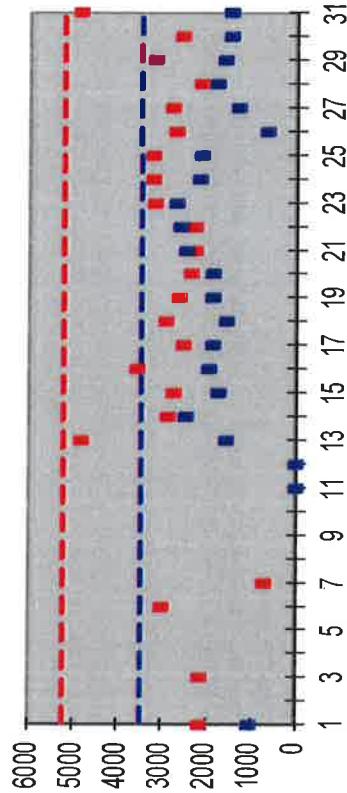
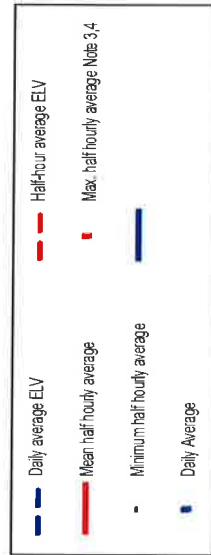
Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A1 / Form Dated 1st February 2006

Reporting of Continuously Monitored Emissions to Air for Carbon Monoxide Emission Point A1 for the month of December 2017

Daily and Half-hourly Average Monitoring Data



Monthly summary		Date																																	
Half-hourly average																																			
	Monthly maximum	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	3230	
	Monthly mean	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	2098	
	Monthly minimum																																		
	Total invalid results																																		
Daily average	Sum of exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Daily average ELV	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	
	Monthly maximum																																		
	Monthly average	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	1619	
	Sum of exceedances Note 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note 1: Not more than one calendar monthly average during any rolling twelve-month period shall exceed the limit value by more than 10%.

Note 2: Not more than one half hour period (commencing on the hour or half hour) during any 24-hour period shall exceed the daily average limit value of 3500mg/m³ by more than 50%.

Note 3: Max. Half hourly averages to be reported in the event of an exceedance of 3500mg/m³.

Note 4: All results corrected to 273K, 101.3kPa.

Note 5: Plant down to 12.12.17, feedstock supply issues via DC (quality), Cabot vapourisers emptied and cleaned. 26.12.17 Plant down, feedstock supply issue. Spike close to max 1/2 hrly ELV is a false data point due to instrument calibration.

Signed

(authorised to sign as representative of Operator)

Date: 30th January 2018

Reference Number: BU21101S

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: A3 / Form Dated 1st February 2006

Reporting of Emissions to Air for the period 1 October 2017 to 31 December 2017

Emission Point	Substance / Parameter	Emission Limit Value [6]	Result [1] [8]	Test Method [2]	Sample Date and Times [3]	Accreditation/ Certification [4]	Uncertainty +/- [5]
A1	Chlorine	10 mg/m ³	3.4 mg/m ³	US EPA Method 26A	29.11.2017 08:48-09:18, 09:55-10:25, 10:30-11:00, 11:05-11:35, 11:40-12:10 hrs	MCERTS / UKAS	+/- 0.4 mg/m ³
A1	Chlorine	10mg/m ³	6.1 mg/m ³	US EPA Method 26A	Annual average of CY17Q1(9.5) CY17Q2 (3.5) CY17Q3(7.9) CY17Q4 (3.4)	MCERTS / UKAS	+/- 0.8 mg/m ³
A1	Chloromethanes (as methyl chloride)	50mg/m ³	2.6 mg/m ³	BS EN 13649	29.11.17 13:35-13:40,1425-14:30, 15:05-1510hrs	MCERTS / UKAS	+/- 0.6 mg/m ³
A1	Hydrogen chloride	10mg/m ³	6.93 mg/m ³	TGN M22[2]	29.11.17 08:55-09:55, 09:57-10:57,10:59-11:59 hrs	MCERTS / UKAS	+/- 1.6 mg/m ³

[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.

[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.

[3] For non-continuous measurements the date and time of the sample that produced 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. The basis of any other uncertainty figure needs to be stated. Where no figure is available the Agency will need to agree an appropriate uncertainty value.

[6] Corrected to 273K, 101.3Kpa.

[7] Annual Average reported (Reset to cover CY17 Q1-Q4 inclusive)

Signed

(authorised to sign as representative of Operator)

Date: 30th January 2018

Permit Reference Number: BU2110IS

Operator: Cabot Carbon Limited

Installation: Barry Silicon-Based Manufacturing Installation

Form Number: W1 / Form Dated 1st February 2006

Reporting of Emissions to Water (other than to Sewer) for the period from 1 October 2017 to 31 December 2017

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
W1	Oil and grease	5mg/l ^[6]	<0.2	IR Spectrometry - EA Test 362 ISBN 0117517283	13/12/2017 1145hrs	UKAS	+/- 7.66%
	BOD ₅	20mg/l ^[6]	3.45	ISBN 011 7522120	13/12/2017 1145hrs	UKAS	+/- 15.24%
	pH	>5, <9 ^[7]	7.00	BS 6068-2.50:1995	13/12/2017 1145hrs	UKAS	+/- 0.89%
W2	Oil and grease	5mg/l ^[6]	<0.2	IR Spectrometry - EA Test 362 ISBN 0117517283	13/12/2017 1145hrs	UKAS	+/- 7.66%
	BOD ₅	20mg/l ^[6]	2.34	ISBN 011 7522120	13/12/2017 1145hrs	UKAS	+/- 15.24%
	pH	>5, <9 ^[7]	7.55	BS 6068-2.50:1995	13/12/2017 1145hrs	UKAS	+/- 0.89%
W3	Oil and grease	5mg/l ^[6]	No sample ^[9]	IR Spectrometry - EA Test 362 ISBN 0117517283		UKAS	
	BOD ₅	20mg/l ^[6]	No sample ^[9]	ISBN 011 7522120		UKAS	
	pH	>5, <9 ^[7]	No sample ^[9]	BS 6068-2.50:1995		UKAS	

[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.

[3] For non-continuous measurements the date and time of the sample that produced 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. The basis of any other uncertainty figure needs to be stated. Where no figure is available the Agency will need to agree an appropriate uncertainty value.

[6] The emission limit value for Oil and grease, and BOD₅, is expressed as a maximum individual value.

[7] The emission limit values for pH are expressed as minimum and maximum individual values.

[8] The Environment Agency National Testing Laboratory at Shawcross in Exeter has obtained UKAS accreditation for the oil and grease test method.

[9] Despite several attempts, sample W3 not able to be taken due to either high tide or flood warnings. River levels were high and covered the outlet point.

Signed

(authorised to sign as representative of Operator)

Date 30th January 2018

