

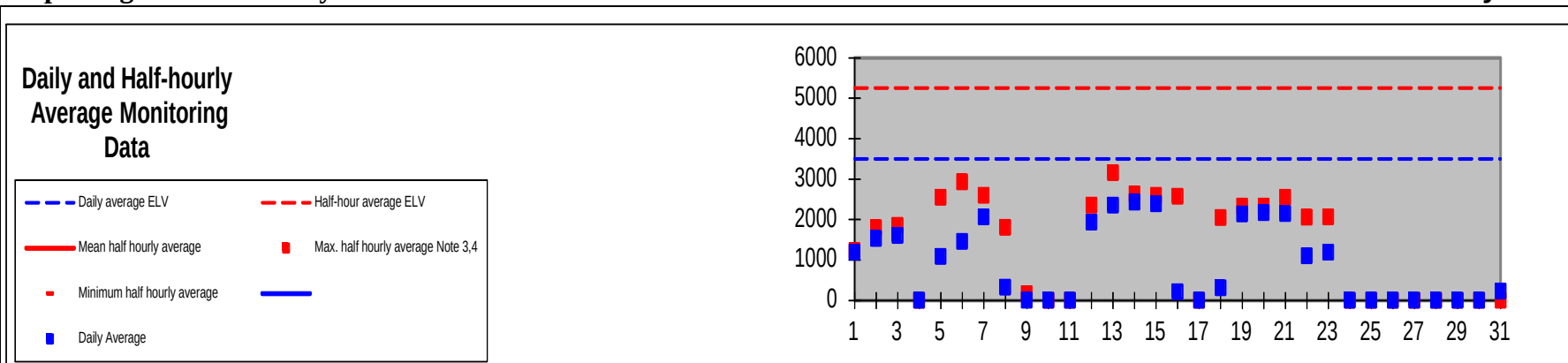
Reference Number: BU2110IS

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 January 2014



	Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Half-hourly average			Half-hour average ELV	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 maximum	///	Max. half hourly average Note 3,4	1228	1795	1854	0	2552	2933	2596	1806	168	0	0	2357	3158	2626	2596	2577	0	2051	2331	2331	2548	2055	2061	0	0	0	0	0	0	0	0
	Monthly mean	///	Mean half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Monthly minimum	///	Minimum half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Total invalid results	///	No. of invalid results	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Sum of exceedances	///	No. of exceedances of ELV Note 2	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			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
	Monthly maximum	2429		///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Monthly average	892	Daily average Note 4	1192	1530	1603	0	1083	1458	2064	324	0	0	0	1938	2356	2429	2391	217	0	310	2138	2166	2146	1101	1195	0	0	0	0	0	0	0	230
	Sum of exceedances Note 1	0	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

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: A&B unit shut down (SD) Maint/repair to T-3 lining 04.01.14, SD lack of feedstock supply 08.01.14-11.01.14, SD 16.01.14-18.01.14 repair to T-3 lining, 24.01.14 -31.01.14 repairs to T-3 lining.

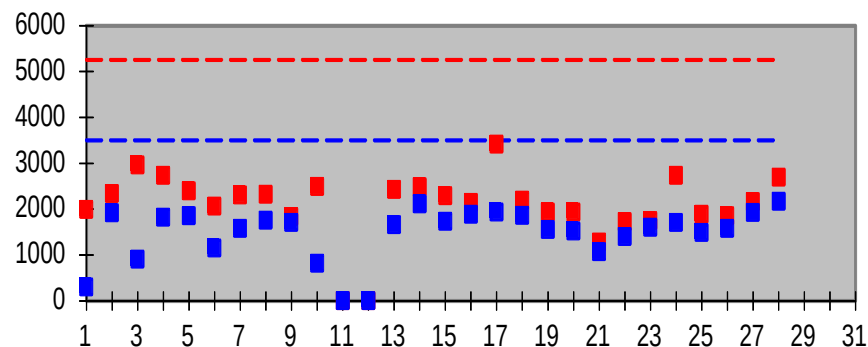
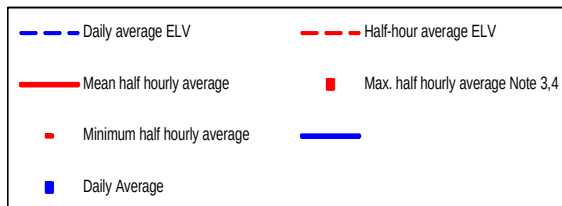
Signed *PS Lord*
(authorised to sign as representative of Operator)

Date: 30th April 2014

Reference Number: BU2110IS

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 February 2014****Daily and Half-hourly
Average Monitoring
Data**

	Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Half-hourly average			Half-hour average ELV	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 maximum	///	Max. half hourly average Note 3,4	1988	2337	2962	2731	2396	2064	2309	2325	1838	2495	0	0	2431	2485	2290	2147	3415	2193	1931	1931	1279	1725	1746	2732	1890	1855	2161	2692				
	Monthly mean	///	Mean half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	
	Monthly minimum	///	Minimum half hourly average	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	
	Total invalid results	///	No. of invalid results	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	
	Sum of exceedances	///	No. of exceedances of ELV Note 2	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			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			
	Monthly maximum	2169		///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///	///
	Monthly average	1466	Daily average Note 4	302	1917	908	1819	1854	1153	1583	1761	1706	822	0	0	1662	2115	1730	1890	1936	1864	1552	1524	1071	1400	1607	1708	1487	1582	1926	2169				
	Sum of exceedances Note 1	0	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			

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 Shutdown (SD) 01.01.14 T-3 liner repair (continuation of end Jan SD), 11.02.14-12.02.14 T-3 liner repair (to be replaced March 2014).

 Signed *PS Lloyd*
 (authorised to sign as representative of Operator)
Date: 30th April 2014

Reference Number: BU2110IS

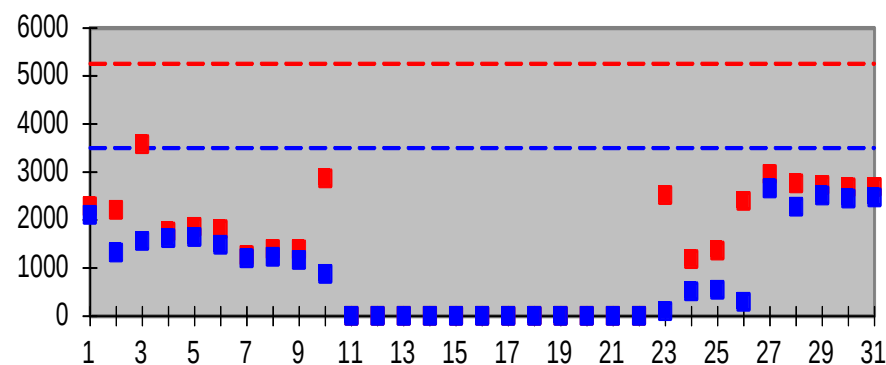
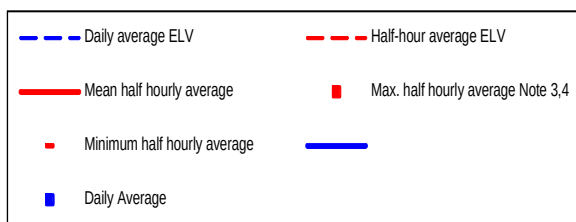
Operator: Cabot Carbon Limited

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 March 2014

Daily and Half-hourly Average Monitoring Data



Monthly summary		Date	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Half-hourly average		Half-hour average ELV	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 maximum	Max. half hourly average Note 3,4	2280	2206	3576	1759	1852	1805	1262	1393	1389	2865	0	0	0	0	0	0	0	0	0	0	0	0	2516	1186	1361	2398	2956	2759	2726	2680	2688
	Monthly mean	Mean half hourly average	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Monthly minimum	Minimum half hourly average	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Total invalid results	No. of invalid results	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Sum of exceedances	No. of exceedances of ELV Note 2	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		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
	Monthly maximum	2658	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Monthly average	904	2102	1320	1562	1619	1644	1484	1199	1229	1168	875	0	0	0	0	0	0	0	0	0	0	0	0	100	511	549	293	2658	2272	2512	2448	2470
	Sum of exceedances Note 1	0	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

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: Annual Plant Shut down from 10.03.14 to 24.03.14. Minor repair/maint post shutdown 24.03.14 to 25.03.14. A&B unit partial downtime for due to DCS IT issue on 26.03.14

Signed *PS Lord*
(authorised to sign as representative of Operator)

Date: 30th April 2014

Reference Number: BU2110IS

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 January 2014 to 31 March 2014

Emission Point	Substance / Parameter	Emission Limit Value ^[6]	Result ^[1] [Note A]	Test Method ^[2]	Sample Date and Times ^{[3] [7]}	Accreditation/ Certification ^[4]	Uncertainty +/- [5]
A1	Chlorine	20mg/m ³ ^[8]	2.9 mg/m ³	US EPA Method 26	26/02/2014 10:00-11:00, 11:07-12:07,12:11-13:11, 13:15-14:15, 14:18-15:18, 15:22-16:22	MCERTS / UKAS	+/- 0.4 mg/m3
A1	Chloromethanes (as methyl chloride)	50mg/m ³	2.0 mg/m ³	BS EN 13649	26/02/2014 10:00-11:00, 11:07-12:07,12:11-13:11, 13:15-14:15, 14:18-15:18, 15:22-16:22	MCERTS / UKAS	+/- 0.4 mg/m3
A1	Hydrogen chloride	10mg/m ³	4.5 mg/m ³	ASTM D6348-03	26/02/2014 10:00-11:00, 11:07-12:07,12:11-13:11, 13:15-14:15, 14:18-15:18, 15:22-16:22	MCERTS / UKAS	+/- 1.6 mg/m3

[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] The tests were carried out at scrubber pH (pH 8.8) to assist in maintaining the improvement in caustic scrubber efficiency to reduce chlorine emissions at A1 stack outlet.

[8] 20mg/m3 chlorine emission limit to be applied and revert to 10mg/m3 by an agreed date with the EA.

[Note A]: Results are given as averages being more representative, as agreed with EA.

PS Lloyd

Signed

Date: 30th April 2014

(authorised to sign as representative of the Operator)

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 January 2014 to 31 March 2014

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	25/03/14@23:00	UKAS	±4.2%
	BOD ₅	20mg/l ^[6]	2.28	ISBN 011 7522120	25/03/14@23:00	UKAS	±17.9%
	pH	>5, <9 ^[7]	7.49	BS 6068-2.50:1995	25/03/14@23:00	UKAS	±1.6%
W2	Oil and grease	5mg/l ^[6]	No Result ^[9]	IR Spectrometry - EA Test 362 ISBN 0117517283	Unable to sample ^[9]	UKAS	-
	BOD ₅	20mg/l ^[6]	No Result ^[9]	ISBN 011 7522120	Unable to sample ^[9]	UKAS	-
	pH	>5, <9 ^[7]	No Result ^[9]	BS 6068-2.50:1995	Unable to sample ^[9]	UKAS	-
W3	Oil and grease	5mg/l ^[6]	<0.2	IR Spectrometry - EA Test 362 ISBN 0117517283	25/03/14@23:00	UKAS	±4.2%
	BOD ₅	20mg/l ^[6]	<1.00	ISBN 011 7522120	25/03/14@23:00	UKAS	±17.9%
	pH	>5, <9 ^[7]	7.73	BS 6068-2.50:1995	25/03/14@23:00	UKAS	±1.6%

[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.

[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] Unable to obtain water sample from W2 outlet due to very low rainfall and lack of flow to obtain water sample during this period.

Signed

(authorised to sign as representative of the Operator)

Date: 30th April 2014