

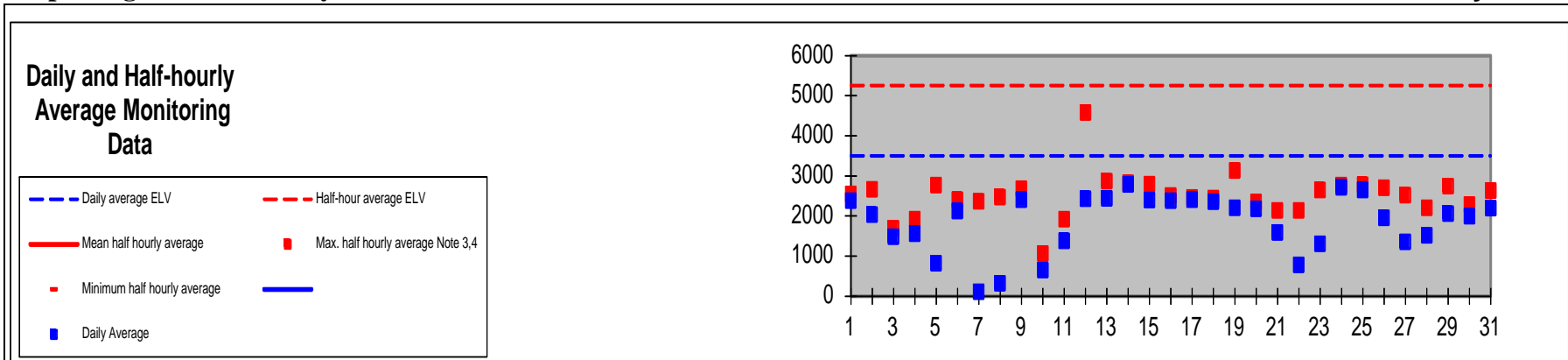
Reference Number: BU2110IS

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 2015



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	5250
	Monthly maximum	Max. half hourly average Note 3,4	2546	2661	1691	1919	2766	2401	2365	2470	2677	1065	1920	4579	2868	2824	2795	2511	2459	2446	3132	2344	2135	2136	2644	2766	2774	2700	2519	2205	2744	2286	2628	
	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	2783	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Monthly average	1835	2381	2034	1483	1556	821	2123	105	321	2402	654	1377	2432	2433	2783	2394	2380	2401	2351	2199	2175	1586	778	1303	2709	2645	1948	1350	1513	2055	1992	2195	
	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	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: 6-7th Jan Maint, A&B units down for Maint. 12th Jan CO Analyser Calibration

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

Date: 24th April 2015

Reference Number: BU2110IS

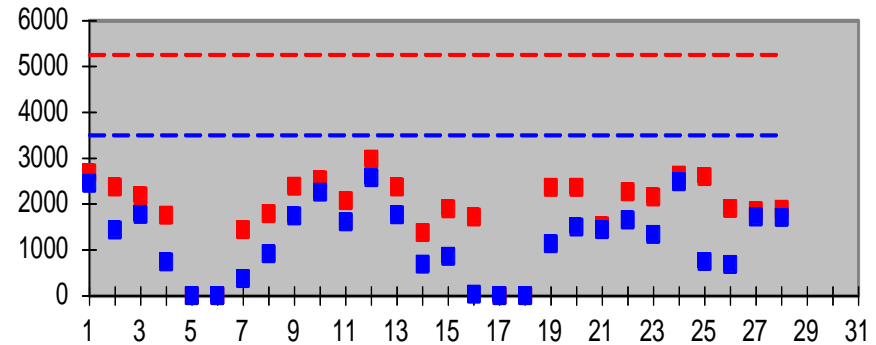
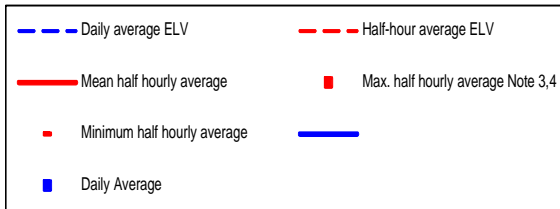
Operator: Cabot Carbon Limited

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 2015

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		
	Monthly maximum	Max. half hourly average Note 3,4	2683	2372	2180	1758	0	0	1441	1788	2392	2522	2070	2974	2375	1380	1898	1719	0	0	2366	2366	1524	2267	2155	2629	2600	1900	1854	1885				
	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	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	2577																																
	Monthly average	1201	Daily average Note 4	2450	1431	1773	740	0	0	378	915	1738	2258	1609	2577	1763	689	858	38	0	0	1134	1496	1441	1654	1339	2484	751	680	1714	1706			
	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: Plant Shutdown (SD) 4-6th Feb pipeline section repair, 15th -18th Feb lack of feedstock supply, units down. 25th Feb, units down for Maint.

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

Date: 24th April 2015

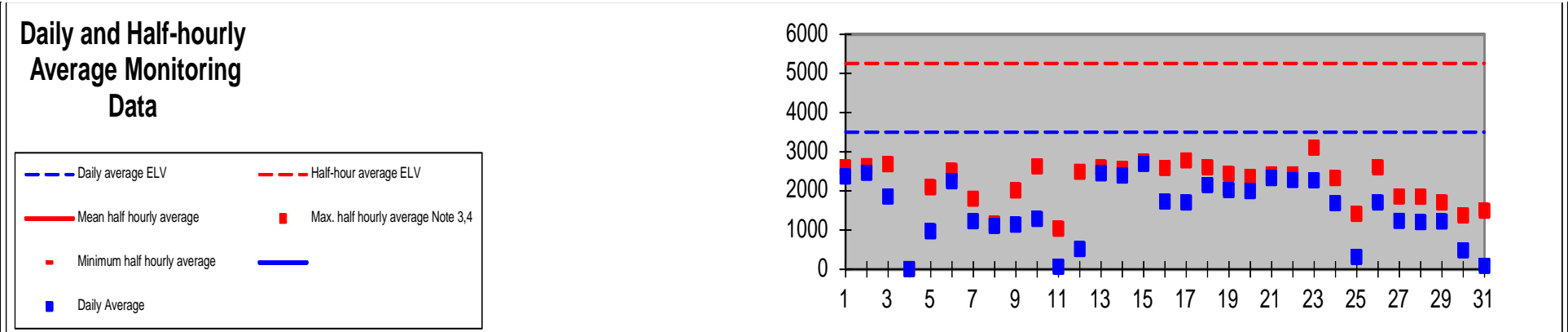
Reference Number: BU2110IS

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 2015



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	5250
	Monthly maximum	Max. half hourly average Note 3,4	2597	2627	2683	0	2092	2511	1800	1163	2004	2624	1029	2486	2588	2560	2741	2580	2775	2594	2429	2366	2423	2424	3102	2322	1409	2600	1853	1845	1699	1369	1487	
	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	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	3500
	Monthly maximum	2686	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Monthly average	1519	Daily average Note 4	2362	2459	1855	0	967	2244	1226	1104	1133	1280	62	510	2447	2387	2686	1726	1700	2145	2019	1992	2322	2278	2266	1683	310	1703	1236	1197	1218	483	83
	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: Maint 3rd to 4th March, 11-12th March level switch issue, both units down. 25th & 31st March SD- lack of feedstock supply.

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

Date: 24th April 2015

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 2015 to 31 March 2015

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]	5.4 mg/m ³	US EPA Method 26	24/02/2015:1015-1045, 1050-1120,1125-1155, 1200-1230, 1235-1305	MCERTS / UKAS	+/- 0.6 mg/m ³
A1	Chloromethanes (as methyl chloride)	50mg/m ³	6.9 mg/m ³	BS EN 13649	24/02/2015:1015-1020, 1125-1130,1230-1235	MCERTS / UKAS	+/- 1.6 mg/m ³
A1	Hydrogen chloride	10mg/m ³	4.5 mg/m ³	ASTM D6348-03	24/02/2015:1015-1115, 1120-1220, 1225-1325	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] 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 NRW

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

Signed
(authorised to sign as representative of the Operator)

Date: 24th April 2015

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 2015 to 31 March 2015

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	19/02/15@09:30	UKAS	±9.4%
	BOD ₅	20mg/l ^[6]	1.53	ISBN 011 7522120	19/02/15@09:30	UKAS	±13.8%
	pH	>5, <9 ^[7]	7.33	BS 6068-2.50:1995	19/02/15@09:30	UKAS	±1.3%
W2	Oil and grease	5mg/l ^[6]	<0.2	IR Spectrometry - EA Test 362 ISBN 0117517283	19/02/15@09:30	UKAS	±9.4%
	BOD ₅	20mg/l ^[6]	2.59	ISBN 011 7522120	19/02/15@09:30	UKAS	±13.8%
	pH	>5, <9 ^[7]	7.64	BS 6068-2.50:1995	19/02/15@09:30	UKAS	±1.3%
W3	Oil and grease	5mg/l ^[6]	3.02	IR Spectrometry - EA Test 362 ISBN 0117517283	19/02/15@09:30	UKAS	±9.4%
	BOD ₅	20mg/l ^[6]	2.72	ISBN 011 7522120	19/02/15@09:30	UKAS	±13.8%
	pH	>5, <9 ^[7]	7.7	BS 6068-2.50:1995	19/02/15@09:30	UKAS	±1.3%

[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. 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.

[



Signed
(authorised to sign as representative of the Operator)

Date: 24th April 2015