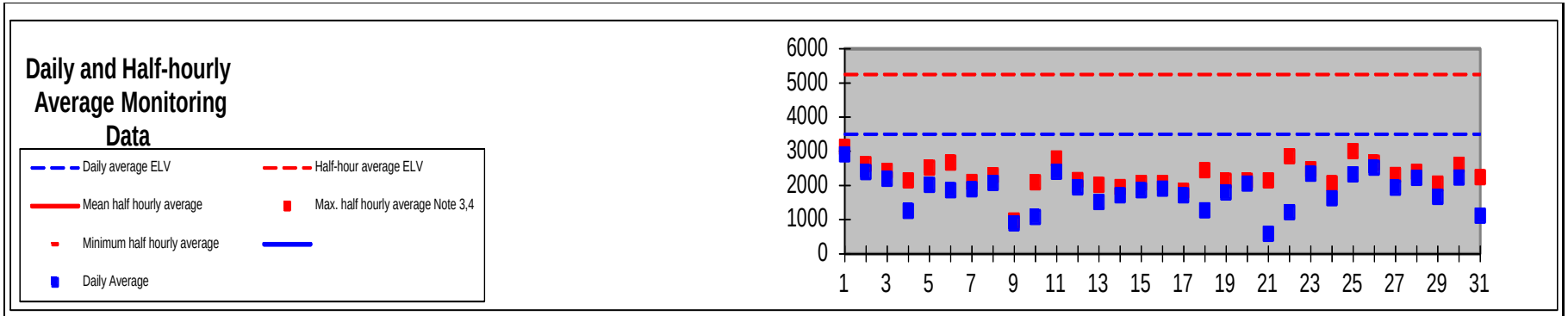
Reference Number: BU2110IS

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 2016



	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	3117	2620	2420	2141	2512	2661	2100	2296	966	2087	2785	2150	2016	1949	2068	2072	1837	2437	2136	2136	2145	2855	2470	2063	2997	2667	2305	2394	2045	2596	2234
	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	2910																																
	Monthly average	1818	Daily average Note 4	2910	2380	2191	1249	2015	1855	1880	2064	888	1076	2396	1936	1506	1706	1856	1903	1706	1271	1793	2053	584	1211	2337	1623	2317	2512	1926	2219	1655	2226	1109
	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/m^3 by more than 50%.
Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m^3.
Note 4: All results corrected to 273K, 101.3kPa.
Note 5: B Unit offline 24hrs: lack of feed on 15th 21st and 28th Jan.

Signed ..... P S Lloyd .....

(authorised to sign as representative of Operator)

Date: 18th April 2016

Reference Number: BU2110IS

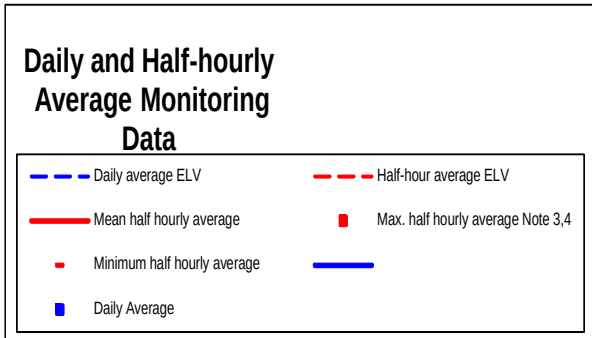
Operator: Cabot Carbon Limited

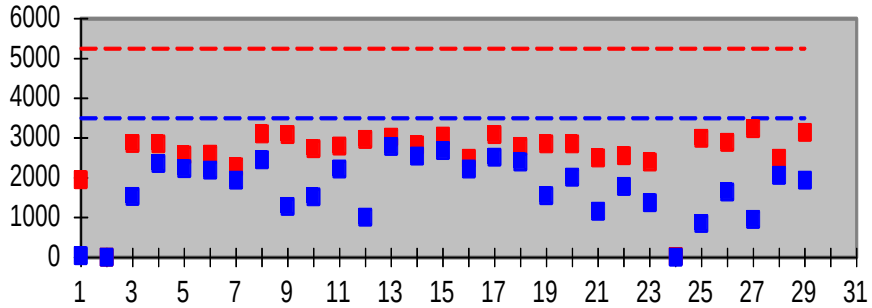
Installation: Barry Silicon-Based Manufacturing Installation

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 2016

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		
	Monthly maximum		Max. half hourly average Note 3,4	1951	0	2863	2848	2576	2586	2273	3097	3084	2728	2790	2966	3018	2824	3045	2485	3086	2790	2850	2850	2499	2554	2393	20	2986	2887	3229	2492	3136		
	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		
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	2789																																
	Monthly average	1697	Daily average Note 4	41	0	1527	2352	2228	2190	1941	2451	1278	1521	2215	1012	2789	2548	2683	2216	2519	2391	1551	2010	1152	1776	1374	7	849	1639	953	2061	1939		
	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/m^3 by more than 50%.
Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m^3.
Note 4: All results corrected to 273K, 101.3kPa.
Note 5: Plant Shutdown (SD) 1-2nd A&B down DC ANHCL line repair, 12th A Calciner Motor fail, 24th A unit MUF issue (A unit down), 25th B unit down, liquid feed investigation, 27th A&B unit down 14hrs GB4 Nozzle, common off gas line repair.

Signed ..... P S Lloyd .....

(authorised to sign as representative of Operator)

Date: 18th April 2016

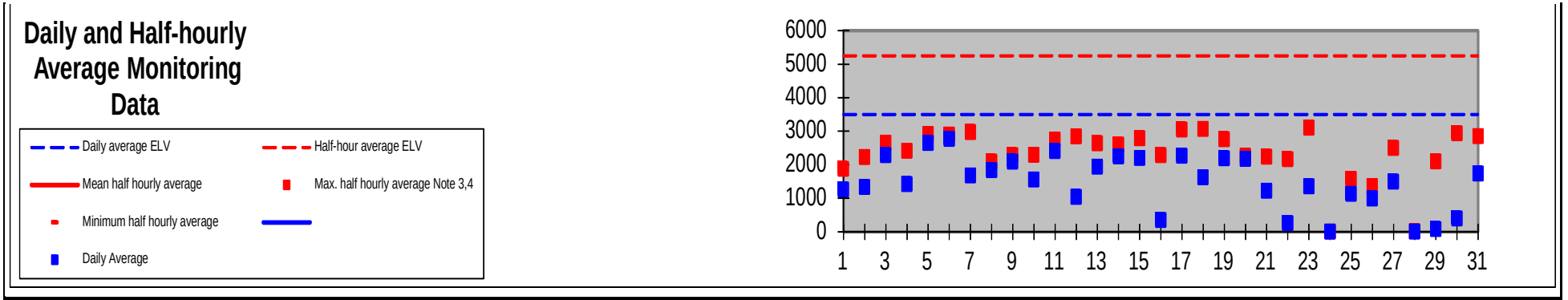
Reference Number: BU2110IS

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 2016



	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	1877	2226	2659	2412	2911	2897	2974	2087	2281	2291	2749	2837	2636	2602	2787	2284	3045	3062	2761	2261	2232	2163	3102	0	1572	1358	2494	14	2100	2930	2847
	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	2767																																
	Monthly average	1482	Daily average Note 4	1261	1330	2285	1418	2649	2767	1677	1839	2087	1558	2408	1034	1936	2250	2199	344	2264	1618	2191	2176	1226	255	1352	0	1130	990	1495	1	74	394	1735
	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/m^3 by more than 50%.
Note 3: Max. half hourly averages to be reported in the event of an exceedance of 3500mg/m^3.
Note 4: All results corrected to 273K, 101.3kPa.
Note 5: 16th March 14hrs A Unit down: power dip. 22nd A&B down 20hrs: Steam Tracing issue, 23rd A unit down 12hr and B Unit for 24hr then both units down 24th: ANHCL limitation. 27th-30th plant down: production curtailment.

Signed ..... P S Lloyd .....

(authorised to sign as representative of Operator)

Date: 18th April 2016

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 2016 to 31 March 2016

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	10mg/m^3[8]	5.1 mg/m^3	US EPA Method 26A	23/02/2016 1027-1057, 1102-1132,1136-1206, 1211-1241, 1249-1319hrs	MCERTS / UKAS	+/- 0.7 mg/m3
A1	Chloromethanes (as methyl chloride)	50mg/m^3	3.6 mg/m^3	BS EN 13649	23/02/2016:1027-1032, 1136-1141,2349-1254hrs	MCERTS / UKAS	+/- 0.9 mg/m3
A1	Hydrogen chloride	10mg/m^3	4.6 mg/m^3	TGN M22	23/02/2016:1027-1127, 1134-1234, 1239-1339hrs	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 NRW 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] Reversion to 10mg/m3 chlorine emission limit as documented in EPR/BU2110IS/V007. Results calculated as the average of 5 consecutive, 30 minute samples taken every quarter. Results above 14.6mg/m3 shall be removed from these calculations.
[Note A]: Results are given as averages being more representative, as agreed with NRW.

P S Lloyd

Signed ……. Date: 18th April 2016

(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 2016 to 31 March 2016

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]	No sample	IR Spectrometry - EA Test 362 ISBN 0117517283		UKAS	
	BOD_5	20mg/l[6]	No sample	ISBN 011 7522120		UKAS	
	pH	>5, <9 [7]	No sample	BS 6068-2.50:1995		UKAS	
W2	Oil and grease	5mg/l [6]	No sample	IR Spectrometry - EA Test 362 ISBN 0117517283		UKAS	
	BOD_5	20mg/l[6]	No sample	ISBN 011 7522120		UKAS	
	pH	>5, <9 [7]	No sample	BS 6068-2.50:1995		UKAS	
W3	Oil and grease	5mg/l [6]	No sample	IR Spectrometry - EA Test 362 ISBN 0117517283		UKAS	
	BOD_5	20mg/l[6]	No sample	ISBN 011 7522120		UKAS	
	pH	>5, <9 [7]	No sample	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. Despite many attempts, samples were not able to be taken due to heavy rainfall coinciding with either high tide or flood warnings.The outlet points were partially submerged therefore a representative sample of free flowing site storm water to river could not be taken. NRW notified via email on 09.03.16 of the issues encountered this quarter.
[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 BOD_5, 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.

P S Lloyd

Signed ……. Date: 18th April 2016

(authorised to sign as representative of the Operator)