

Form Number: A1

Reporting of Emissions to Air for the period from 1st January 2021 to 31st December 2021

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
A1	Oxides of nitrogen as NO ₂	220mg/m ³ ^[6]	197.5	BS EN 14792	27/05/21 11:19 – 12:19	Mcerts MC 050056/00	8.2
A1	Carbon monoxide	None	2.0	BS EN 15068	27/05/21 11:19 – 12:19	Mcerts MC 050056/00	1.3
A1	Oxygen	None	6.8	BS EN 14789	27/05/21 11:19 – 12:19		0.2
A1	Temperature	None	-	-			
A2	Oxides of nitrogen as NO ₂	220mg/m ³ ^[6]	182.3	BS EN 14792	29/04/21 10:59 – 11:59	Mcerts MC 050056/00	7.6
A2	Carbon monoxide	None	1.0	BS EN 15068	29/04/21 10:59 – 11:59	Mcerts MC 050056/00	1.2
A2	Oxygen	None	5.7	BS EN 14789	29/04/21 10:59 – 11:59		0.12
A2	Temperature	None	-	-			
A3	Oxides of nitrogen as NO ₂	220mg/m ³ ^[6]	102.3	BS EN 14792	29/04/21 12:10 – 13:10	Mcerts MC 050056/00	4.9
A3	Carbon monoxide	None	0.28	BS EN 15068	29/04/21 12:10 – 13:10	Mcerts MC 050056/00	1.0
A3	Oxygen	None	3.8	BS EN 14789	29/04/21 12:10 – 13:10		0.12
A3	Temperature	None	-	-			
A4	Oxides of nitrogen as NO ₂	220mg/m ³ ^[6]	90.2	BS EN 14792	29/04/21 13:39 – 14:39	Mcerts MC 050056/00	4.6
A4	Carbon monoxide	None	26	BS EN 15068	29/04/21 13:39 – 14:39	Mcerts MC 050056/00	1.5
A4	Oxygen	None	3.4	BS EN 14789	29/04/21 13:39 – 14:39		0.1
A4	Temperature	None	-	-			
A1	Oxides of nitrogen as NO ₂	220mg/m ³ ^[6]	161.0	BS EN 14792	08/10/21 12:18 – 13:18	Mcerts MC 050056/00	6.6
A1	Carbon monoxide	None	4.3	BS EN 15068	08/10/21 12:18 – 13:18	Mcerts MC 050056/00	0.87
A1	Oxygen	None	7.6	BS EN 14789	08/10/21 12:18 – 13:18		0.19
A1	Temperature	None					
A2	Oxides of nitrogen as NO ₂	220mg/m ³ ^[6]	178	BS EN 14792	08/10/21 09:52 – 10:52	Mcerts MC 050056/00	7.3
A2	Carbon monoxide	None	4.1	BS EN 15068	08/10/21 09:52 – 10:52	Mcerts MC 050056/00	0.73
A2	Oxygen	None	4.8	BS EN 14789	08/10/21 09:52 – 10:52		0.13
A2	Temperature	None	-	-			
A3	Oxides of nitrogen as NO ₂	220mg/m ³ ^[6]	101	BS EN 14792	08/10/21 11:05 – 12:05	Mcerts MC 050056/00	4.9
A3	Carbon monoxide	None	6.3	BS EN 15068	08/10/21 11:05 – 12:05	Mcerts MC 050056/00	0.69
A3	Oxygen	None	2.8	BS EN 14789	08/10/21 11:05 – 12:05		0.095
A3	Temperature	None		-			
A4	Oxides of nitrogen as NO ₂	140mg/m ³ ^[6]	81.9	BS EN 14792	08/10/21 13:30 – 14:30	Mcerts MC 050056/00	6.3
A4	Carbon monoxide	None	2.7	BS EN 15068	08/10/21 13:30 – 14:30	Mcerts MC 050056/00	1.6
A4	Oxygen	None	13.9	BS EN 14789	08/10/21 13:30 – 14:30		0.32
A4	Temperature	None	-				
A5	Oxides of nitrogen as NO ₂	350mg/m ³ ^[7]	CHP Removed				
A5	Carbon monoxide	500mg/m ³ ^[7]					
A5	Oxygen	None					
A6	Oxides of nitrogen as NO ₂	350mg/m ³ ^[7]	CHP Removed				
A6	Carbon monoxide	500mg/m ³ ^[7]					
A6	Oxygen	None					

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[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. The following uncertainties are quoted on a different basis (basis as 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, 5% oxygen, dry

[7] Corrected to 273K, 101.3kPa, 15% oxygen, dry

Signed *Kyle Morgan*
(authorised to sign as representative of the Operator)

Date.....22/02/2022.....

Permit Number: EPR/BX7282IS
Facility: Magor Brewery
Date of form: 19/07/11

Operator: Inbev UK Ltd
Form Number: A2.

Reporting of emissions to air for the period from 1st January 2021 to 31st December 2021

Emission Point	Substance / Parameter	Emission		Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/certification ^[4]	Uncertainty ^[5]
		Limit Value	Result ^[1]				
A8	Oxides of nitrogen as NO2	500	459	BS EN 14792	01/03/21 10:17 – 13:35	Mcerts MC 050056/00	17
	Carbon monoxide	650	516	BS EN 15058	01/03/21 10:17 – 13:35	Mcerts MC 050056/00	19
	Sulphur Dioxide	80	16	BS EN 14791	01/03/21 10:17 – 13:35	Mcerts MC 050056/00	1.3
	Oxides of nitrogen as NO2	500	377	BS EN 14792	20/05/21 10:00 – 13:08	Mcerts MC 050056/00	16.1
	Carbon monoxide	650	623	BS EN 15058	20/05/21 10:00 – 13:08	Mcerts MC 050056/00	23.8
	Sulphur Dioxide	80	0.45	BS EN 14791	20/05/21 10:00 – 13:08	Mcerts MC 050056/00	0.036
	Oxides of nitrogen as NO2	500	337	BS EN 14792	15/07/21 09:34 – 12:40	Mcerts MC 050056/00	13
	Carbon monoxide	650	553	BS EN 15058	15/07/21 09:34 – 12:40	Mcerts MC 050056/00	21
	Sulphur Dioxide	80	0.33	BS EN 14791	15/07/21 09:34 – 12:40	Mcerts MC 050056/00	0.027
	Oxides of nitrogen as NO2	500	150	BS EN 14792	11/11/21 10:15 – 13:25	Mcerts MC 050056/00	6.6
	Carbon monoxide	650	494	BS EN 15058	11/11/21 10:15 – 13:25	Mcerts MC 050056/00	20.6
	Sulphur Dioxide	80	2.0	BS EN 14791	11/11/21 10:15 – 13:25	Mcerts MC 050056/00	0.16

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 Environment Agency is used, then the appropriate identifier is given. In other cases the principal technique is stated, for example 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 uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.
5. Form A1 submitted for the October and November results due to limit breach.

Signed *Kyle Morgan*
(Authorised to sign as representative of Inbev UK Ltd)

Date.....22/02/22.....

Installation: InBev Magor Brewery

Operator: InBev UK Ltd

Facility: Magor Brewery

Form Number: E2. Date of form

19/07/11

Reporting of Energy Generation for the year 1st January 2021 to 31st December 2021

Energy Source	Energy Usage	
	Quantity	Energy generated/m³ biogas (MWh/m³)
Electricity generation	1757 MWh	0.001
Heat generated	2308 MWh	0.002
TOTAL		

Operator's comments :

Signed *Kyle Morgan*

Date.....22/02/22.....

(Authorised to sign as representative of Operator)

Permit Number: EPR/BX7282IS Operator: Inbev UK Ltd
Facility: Magor Brewery Form Number: Gas1
Date of form 19/07/11

Reporting of biogas quality for the year 1st January 2021 to 31st December 2021

Parameter	Result (ppm)
Hydrogen sulphide content at outlet of hydrogen sulphide scrubber	2495
Hydrogen sulphide content at entry to gas engine	498

The result given is the maximum result over the reporting period

Operator's comments :
Gas Scrubber media replaced and lead bed changed over

Signed *Kyle Morgan* Date.....22/02/22.....
(Authorised to sign as representative of Operator)

Form Number: W1

Reporting of Emissions to Water (other than to Sewer) for the period from 1st January 2021 to 31st December 2021

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
W2	Flow	10,000m3/day	5061	Continuous / cumulative – AAB flow meter	05/07/21	MCerts accredited	+/- 1.04 %
W2	Flow	126 litres/s	58.58	Spot – AAB flow meter	05/07/21	MCerts accredited	+/- 1.04 %
W2	pH	5 – 9 ^[6]	8.89	Continuous sample	04/02/21	EA approved (IP 18)	+/- 0.05 pH
W2	Temperature	30°C	50	Continuous sample – knick in line meter	03/10/21 <probe error>	EA approved (IP 18)	+/- 1 degree C
W2	BOD	200mg/l	184	SCA Blue Book 130 ISBN 0117522120	25/10/21	UKAS Lab 1314	20.1%
W2	COD	450mg/l	403	SCA Blue Book 97 ISBN 0117519154	25/10/21	UKAS Lab 1314	5.8%
W2	Suspended Solids	150mg/l	66	SCA Blue Book 105 ISBN 011751957X	20/11/21	UKAS Lab 1314	19.7%
W2	Total cadmium & its compounds	0.005mg/l (as annual average)	0.0006	BS EN ISO 5961:1995, BS 6068-2.21:1995		UKAS Lab 1314	7.83%
W2	Total chromium & its compounds	0.015mg/l (as annual average)	0.0029	BS EN ISO 11885:1998, BS 6068-2.60:1998		UKAS Lab 1314	7.93%
W2	Total copper & its compounds	0.01mg/l (as annual average)	0.0035	BS EN ISO 11885:1998, BS 6068-2.60:1998		UKAS Lab 1314	9.03%
W2	Total mercury & its compounds	0.0005mg/l (as annual average)	0.00004	BS EN ISO 11885:1998, BS 6068-2.60:1998		UKAS Lab 1314	11.5%
W2	Total nickel & its compounds	0.03mg/l (as annual average)	0.0042	BS EN ISO 11885:1998, BS 6068-2.60:1998		UKAS Lab 1314	8.82%
W2	Total zinc & its compounds	0.07mg/l (as annual average)	0.0474	BS EN ISO 11885:1998, BS 6068-2.60:1998		UKAS Lab 1314	9.85%
W2	Total arsenic & its compounds	0.025mg/l (as annual average)	0.0007	BS EN 26595:1993, BS 6068-2.1:1983, ISO 6595-1985		UKAS Lab 1314	10.04%
W2	Total iron & its compounds	None (mg/l)	0.246	SCA Blue Book 163 ISBN 0117532444		UKAS Lab 1314	9.27%
W2	Total cadmium & its compounds	9150g	827	BS EN ISO 5961:1995, BS 6068-2.21:1995		UKAS Lab 1314	7.83%
W2	Total mercury & its compounds	915g	56	BS EN ISO 11885:1998, BS 6068-2.60:1998		UKAS Lab 1314	11.5%

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[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. colorimetry.

[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements, or flow/time proportional samples, the percentage of the process operating time covered by the monitoring 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 following uncertainties are quoted on a different basis (basis as 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 values for {pH} are expressed as {minimum and maximum individual values}.

Signed *Kyle Morgan*
(authorised to sign as representative of the Operator)

Date.....22/02/22.....

Form Number: R1

Reporting of Waste Disposal and Recovery for the year Jan 1st 2021 to December 31st 2021

Waste Description	Disposal Route	Tonnes	Recovery Tonnes
1) Hazardous Wastes			
Named haz. Waste	Biffa Waste Management	5.4	5.4
Other hazardous wastes			
Total hazardous waste			
2) Non-Hazardous Wastes			
Named non-haz. Waste	Biffa Waste Management and N-virocycle	21796.77	21796.77
Other non-hazardous wastes			
Total non-hazardous waste			
TOTAL WASTE		21802.17	21802.17

Trends in Waste Disposal and Recovery			
Year	Parameter		
	Named Waste	Total Waste	Waste per unit output
2005	33228	33562	Report on PI1
2006	12961	12961	Report on PI1
2007	16383	16383	Report on PI1
2008	15801	15801	Report on PI1
2009	16623	16623	Report on PI1
2010	25378	25378	Report on PI1
2011	32314	32314	Report on PI1
2012	28122	28122	Report on PI1
2013	19823	19823	Report on PI1
2014	20327	20327	Report on PI1
2015	19948	19448	Report on PI1
2016	20367	20367	Report on PI1
2017	23984	23993	Report on PI1
2018	18966	18969.68	Report on PI1
2019	21468.57	21468.57	Report on PI1
2020	17655.53	17655.30	Report on PI1
2021	21802.17	21802.17	Report on PI1

Operator's comments :

This waste is inclusive of sludge from our WWTP and onsite waste kiesulguhr tanks. (= PG-R5607 + PG-R5605)
Hazardous Waste is PG-R5634

Signed *Kyle Morgan*
(authorised to sign as representative of the Operator)

Date.....22/02/22.....

Form Number: WU1

Reporting of Water Usage for the year Jan 1st 2021 to December 31st 2021

Water Source	Usage (m ³)	Specific Usage (m ³ /t)
Spring water	1736984	3.08
Mains water	31955	0.06
TOTAL WATER USAGE	1768939	3.13

Trends in Water Usage				
Year	Parameter			
	Spring Water Source	Mains Water Source	Total Water usage	Water per unit output
2005	2197934	16813	2214747	Report on PI1
2006	2324340	13139	2337479	Report on PI1
2007	2303437	17217	2320654	Report on PI1
2008	2063466	19462	2082928	Report on PI1
2009	1934551	21173	1955724	Report on PI1
2010	2487347	29020	2516367	Report on PI1
2011	1929724	35197	1964921	Report on PI1
2012	1598898	38003	1636901	Report on PI1
2013	1704598	41397	1745995	Report on PI1
2014	1721398	35496	1756894	Report on PI1
2015	1696846	47770	1744616	Report on PI1
2016	2181524	24840	2206364	Report on PI1
2017	1997012	23466	2020478	Report on PI1
2018	1905510	28653	1934163	Report on PI1
2019	1701133	28278	1729411	Report on PI1
2020	1731995	26909	1758904	Report on PI1
2021	1736984	31955	1768939	Report on PI1

Operator's comments :

Water usage is one of the global better world agendas.
Site water KPI's are reduced on an annual basis in line with global goals.

Signed *Kyle Morgan*

Date.....22/02/2022.....

(authorised to sign as representative of the Operator)

Form Number: E1

Reporting of Energy Usage for the year Jan 1st 2021 to December 31st 2021

Energy Source	Energy Usage		CO ₂ Produced (tonnes)
	Quantity	Primary Energy (MWh)	
Electricity *	33657	80778	7779
Wind Electricity	8281	19875	0
Natural Gas	108848	108848	19937
Gas Oil	0	0	0
TOTAL	150787	189626	27716

Trends in Energy Usage			
Year	Parameter		
	Primary Energy usage	CO ₂ produced	CO ₂ per unit output
2005	229412	43030	Report on PI1
2006	227217	42470	Report on PI1
2007	234066	43253	Report on PI1
2008	218651	40094	Report on PI1
2009	206460	38506	Report on PI1
2010	222367	42261	Report on PI1
2011	214616	39697	Report on PI1
2012	198037	35880	Report on PI1
2013	185342	33131	Report on PI1
2014	190552	34119	Report on PI1
2015	194611	35095	Report on PI1
2016	197537	36789	Report on PI1
2017	213906	37029	Report on PI1
2018	205144	34027	Report on PI1
2019	203647	30749	Report on PI1
2020	209619	30696	Report on PI1
2021	189626	27716	Report on PI1

* Conversion factor for delivered electricity to primary energy = 2.4

Operator's comments :
The site is heavily focussed on better world targets including electricity, water and heat.
Wind Turbine brought online in 2021 for direct supply to Brewery.
New bottling line and increased brewing of the Corona brand.

Signed *Kyle Morgan*

Date.....22/02/22.....

(authorised to sign as representative of the Operator)

Reporting of Performance Indicators for the year Jan 1st 2021 to December 31st 2021

Environmental Performance Indicators

Trends in Environmental Performance						
Year	Parameter					
	BOD	COD	Water Use	Energy Use	CO ₂	Waste
	kg/tonne	kg/tonne	m ³ /tonne	kWh/tonne	tonne/tonne	tonne/tonne
2005	0.104	0.450	4.86	504	0.020*	0.074
2006	0.021	0.256	5.31	516	0.021*	0.029
2007	0.034	0.306	5.90	600	0.024	0.042
2008	0.058	0.378	5.67	596	0.019	0.043
2009	0.06	0.27	4.63	489	0.020	0.039
2010	0.08	0.33	5.58	493	0.095	0.056
2011	0.043	0.27	4.57	499	0.092	0.069
2012	0.029	0.22	4.07	508	0.092	0.070
2013	0.020	0.162	4.31	457	0.08	0.050
2014	0.0172	0.172	3.98	431	0.08	0.046
2015	0.050	0.27	3.81	425	0.076	0.043
2016	0.019	0.158	4.61	412	0.077	0.042
2017	.048	0.098	4.20	444	0.077	0.049
2018	0.068	0.058	3.92	435	0.069	0.050
2019	0.094	0.010	3.55	417	0.063	0.044
2020	0.069	0.21	3.52	419	0.061	0.0353
2021	0.02	0.15	3.13	335.71	0.049	0.039

Signed *Kyle Morgan* Date.....22/02/2022.....
(authorised to sign as representative of the Operator)

Form Number: MR1

Reporting of Mass Release for the year Jan 1st 2021 to December 31st 2021.

Mass Release			Trends in Mass Release		
Parameter		kg/annum	Year	Parameter	
				Ammonia (kg/annum)	
Ammonia (refrigerant)		0	2005	1000	
			2006	4000	
			2007	1000	
			2008	1000	
			2009	1000	
			2010	1000	
			2011	0	
			2012	1060	
			2013	0	
			2014	0	
			2015	0	
			2016	0	
			2017	0	
			2018	0	
			2019	0	
			2020	0	
			2021	0	

Operator's comments :
No replacement NH3 required

Signed *Kyle Morgan*
(authorised to sign as representative of the Operator)

Date.....22/02/2022.....