

Operator: Dow Silicones UK Ltd
Installation: Barry Silicon-Based Manufacturing Installation

Permit Reference Number: BR9685IX

2021 Annual Reporting for Dow Silicones UK Ltd

Parameters, for which reports are required, in accordance with conditions of the permit, are listed within this report.

Performance Parameter	Reporting Form	Page
Water – quarterly reporting of emissions	BR96851X / E1	2
Air – quarterly reporting of emissions	BR96851X / A2	4
Air – annual reporting of emissions	BR96851X / A1	6
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Air, A57 – annual reporting of chloromethane emissions	BR96851X / A5	11
Energy Usage	BR96851X / E1	12
Waste Returns	BR96851X / R1	13
Water usage	BR96851X / WU1	15
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Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
W1 via M1	Flow	11 000 m ³ /day	6901	Agreed ⁽¹⁰⁾	02-Nov	MCERT Approved	+/- 0.5%
W1 via M1	Flow	625 m ³ /hour	611.8945313	Agreed ⁽¹⁰⁾	27-Dec	MCERT Approved	+/- 0.5%
W1 via M1	pH	≥ 6, ≤ 9	6.35	To be agreed ⁽¹¹⁾	30-Nov	Under Review ⁽¹¹⁾	+/- 4%
			8.187016876		13-Oct		
W1 via M1	Temperature	40 °C ^[6]	28.50	RTD ⁽¹²⁾	08-Oct	MCERTS Equiv ⁽¹²⁾	+/- 0.55 °C
W1 via M1	Suspended solids	30 mg/l	29.59000042	SCA Blue Book 105	Q4 2021	Under Review	+/- 6mg/l
W1 via M1	BOD ₅	20 mg/l	13.00	SCA Blue Book 130	07-Oct	UKAS	+/- 21%
W1 via M1	Copper	0.1 mg/l	0.062175001	Inductively Coupled Plasma	Q4 2021	In house validated method	+/- 0.0096 mg/l
W1 via M1	Zinc	0.5 mg/l	0.02014	Inductively Coupled Plasma	Q4 2021	In house validated method	+/- 0.02 mg/l
W1 via M1	Hydrocarbon oil	No visible sheen	No visible sheen	Visual Check	Q4 2021	N/A	N/A
W1 via M1	TOC	100 mg/l	61.70647089	EN 1484	Q4 2021 daily average	NA	NA
W2	pH	≥ 6, ≤ 9	No discharge from W2 in Q4	pH probe	No discharge from W2 in Q4	In house validated method	+/- 4%
W2	Suspended solids	30 mg/l		SCA Blue Book 105		Under Review	+/- 6mg/l
W2	BOD ₅	20 mg/l		SCA Blue Book 130		UKAS	+/- 21%
W2	COD	125 mg/l (13)		Offsite Analysis		UKAS	Unknown
W2	Copper	0.15 mg/l ^[7]		Inductively Coupled Plasma		In house validated method	+/- 0.0096 mg/l
W2	Zinc	0.25 mg/l ^[7]		Inductively Coupled Plasma		In house validated method	+/- 0.02 mg/l
W2	Hydrocarbon oil	No visible sheen		Visual Check		N/A	N/A

- [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.
- [6] Not more than 5% of measurements in the reporting period shall exceed the limit value.
- [7] To be reported for each effluent transfer from W809 to W413.

Dow Silicones Notes:

- (8) The result is the 95%ile reading for the reporting period to demonstrate compliance with the emission limit value stated, which is a 95%ile limit.
- (9) Old note now removed (not applicable).
- (10) Instrument and measurement technique has been reviewed under improvement item IP8. The final treated effluent Danfloss flow meter FT5098 has been MCERT approved. It has been agreed that from 1 October 2009 onwards that the dry flow rate discharge limit of 11,000 m³/day will apply and that reported flow data will relate purely to treated effluent with storm water flow (from W952 penstock valve) excluded from the totalised discharge from release point W1.
- (11) Instrument and measurement technique has been reviewed under improvement item IP10. Existing pH meters will be replaced by MCERT certified pH meter upon failure. Current meters deemed satisfactory in the interim.
- (12) Instrument and measurement technique was reviewed under Note 7 Table 2.2.5 and Agency responded. A New MCERT equivalent resistance thermometer was installed by Dow Silicones in Q4 2007.
- (13) No spot sample shall exceed the limit value by more than 50%. Limit is 125 mg/l so allowable spot sample result is 187.5 mg/l, result was below this.
- (14) Schedule 5 submitted for Cu Q4 2020

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Date: ...18th Jan 2022.....

(authorised to sign as representative of Operator)

Quarterly Reporting of Emissions to Air for the period from **October 1 2021 to December 31 2021**

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]		Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
A26	Class B VOC's	No limit applies	1.6066	kg/hr	Gas chromatography	08/10/2021 08:41	In House Validated Method	3.6%
A26	Siloxanes	No limit applies ⁽⁶⁾	0.7998	kg/hr	Gas chromatography	08/10/2021 08:41	In House Validated Method	3.6%
A27	Siloxanes	No limit applies ⁽⁶⁾	0.0195	kg/hr	Gas chromatography	08/10/2021 09:00	In House Validated Method	3.6%
A43	Hydrogen chloride	10mg/m ³	0.0816	mg/m ³	Ion chromatography	25/10/2021 14:40	In House Validated Method	3.6%
A44	Hydrogen chloride	10mg/m ³	See note 8		Ion chromatography	N/A	In House Validated Method	3.6%
A57	Hydrogen chloride	10mg/m ³	0.014197536	mg/m ³	Ion chromatography	08/10/2021 10:15	In House Validated Method	3.6%
A60	Class B VOC's	5000 kg/year ⁽⁷⁾	0.0593 297.1192	kg/hr kg	Gas chromatography	08/10/2021 11:40 2021 TOTAL	In House Validated Method	3.6%
A65	Siloxanes	No limit applies ⁽⁶⁾	0.0561	kg/hr	Gas chromatography	08/10/2021 11:10	In House Validated Method	3.6%
A68	Class B VOC's	5000 kg/year ⁽⁷⁾	0.0787 565.4772	kg/hr kg	Gas chromatography	08/10/2021 11:25 2021 TOTAL	In House Validated Method	3.6%
A68	Siloxanes	No limit applies ⁽⁶⁾	2.7854	kg/hr	Gas chromatography	08/10/2021 11:25	In House Validated Method	3.6%
A78	Class A VOC's	No limit. Temperature (°C)	24.8203	°C	RTD	14/12/2021 20:19	Internally Calibrated	0.02%
A79	Siloxanes	No limit applies ⁽⁶⁾	0.3254	kg/hr	Gas chromatography	08/10/2021 10:55	In House Validated Method	3.6%
A85	Siloxanes	No limit applies ⁽⁶⁾	0.0030	kg/hr	Gas chromatography	15/11/2021 13:35	In House Validated Method	3.6%

[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. 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.

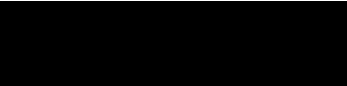
[6] Emission limit to be agreed following completion of IP14. This was deferred for consideration with IP25. No limit applies.

[7] Emission limit agreed following completion of IP4 (5000 kg/year).

Dow Silicones Notes:

(8) A44 is now decommissioned (vent is released via A43).

(9) Releases modelled as part of IP16. Agency agreed that releases do not require abatement and that limit no longer applies. Instead the vent temperature will be recorded on form A2 quarterly to ensure vent condenser performance does not deteriorate. A new temperature transmitter was installed in 2009 to give continuous temperature monitoring with operator alarm for elevated condenser outlet temperature to trigger condenser cleaning operations. Result recorded is the maximum temperature value obtained during the reporting period.

Sign 

Date... .. 18th Jan 2022

(authorised to sign as representative of Operator)

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

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Units	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
A12, A33, A34, A40 ⁽¹⁰⁾	Chloromethane	60 000kg/year	9733.04	kg/yr	US EPA Method 18	2021	In House GC	A12 = 4% A33 = 24% A34 = 3% A40 = 3.6%
A12, A33, A34, A40 ⁽¹⁰⁾	Chloromethane	1000kg/day	572.18	kg/day	US EPA Method 18	21/04/2021	In House GC	A12 = 4% A33 = 24% A34 = 3% A40 = 3.6%
A12, A33, A34, A40 ⁽¹⁰⁾	Chloromethane	250kg/hour	144.5741633	kg/hr	US EPA Method 18	5/9/2021 20:00	In House GC	A12 = 4% A33 = 24% A34 = 3% A40 = 3.6%
A33	Methanol	60kg/hour	0.01	kg/hr	US EPA Method 18	15/01/2021 14:00:00	In House GC	42%
A34	Methanol	60kg/hour	30.99	kg/hr	US EPA Method 18	05/09/2021 20:00:00	In House GC	1%
A12	Methane ^[6]	No limit applies	0	kg/hr	US EPA Method 18	2021	In House GC	1%
A12	Non-methane hydrocarbons ^[6]	No limit applies	0	kg/hr	US EPA Method 18	2021	In House GC	2%
A40	Silanes ^[6]	No limit applies	n/a	-	Gas chromatography	n/a	In House validated Method	3.6%
A40	Silanes ^[7]	No limit applies	n/a	-	Gas chromatography	n/a	In House validated Method	3.6%
A41	Particulates	10 mg/m ³	1.28	mg/m ³	BS EN 13284	6/10/2021 11:00	UKAS & MCERTS	+/- 0.33
A41	Carbon monoxide	50mg/m ³	1.719	mg/m ³	ISO 12039	Average of 12 monthly samples	In House validated Method	13%
A41	Oxides of nitrogen as NO ₂	100mg/m ³	23.21	mg/m ³	ISO 10849	Average of 12 monthly samples	In House validated Method	11%
A41	Dioxins and furans	0.1ng/m ³	0.005997	ng/m ³	BS EN 1948	Time weighted average of all samples covering 2021	UKAS & MCERTS	+/- 0.003

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Units	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
A48	Oxides of nitrogen as NO ₂	No limit applies	122	mg/m ³	ISO 10849	11/08/2021	In House validated Method	11%
A48	Carbon monoxide	No limit applies	0.25	mg/m ³	ISO 12039	11/08/2021	In House validated Method	13%
A50	Oxides of nitrogen as NO ₂	200mg/m ³	38.1	mg/m ³	ISO 10849	11/08/2021	In House validated Method	11%
A50	Carbon monoxide	200mg/m ³	0.22	mg/m ³	ISO 12039	11/08/2021	In House validated Method	13%
A85	Hydrogen chloride ^[8]	10mg/m ³	Note 14	mg/m ³	BS EN 1911:1998	n/a		
A26	Class B VOC's ^[9]	No limit applies	1.335	kg/hr	BS EN 13649	Annual average	In House validated Method	3.6%
A60	Class B VOC's ^[9]	5,000 kg/yr ⁽¹¹⁾	297.119	kg	BS EN 13649	Annual total release	In House validated Method	3.6%
A68	Class B VOC's ^[9]	5,000 kg/yr ⁽¹¹⁾	565.477	kg	BS EN 13649	Annual total release	In House validated Method	3.6%
A26	Siloxanes ^[9]	An agreed limit ⁽¹²⁾	0.768	kg/hr	Gas chromatography	Annual average	In House validated Method	3.6%
A65	Siloxanes ^[9]	An agreed limit ⁽¹²⁾	0.056	kg/hr	Gas chromatography	Annual average	In House validated Method	3.6%
A68	Siloxanes ^[9]	An agreed limit ⁽¹²⁾	2.061	kg/hr	Gas chromatography	Annual average	In House validated Method	3.6%
A79	Siloxanes ^[9]	An agreed limit ⁽¹²⁾	0.814	kg/hr	Gas chromatography	Annual average	In House validated Method	3.6%

[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. 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.

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[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

[6] Maximum kg/h obtained during the reporting period.

[7] Total release during the reporting period.

[8] Reporting only required if phosphonitrile production during reporting year.

[9] Average of quarterly reported values in reporting year.

[10] Based on an agreed emission factor

[11] Emission limit agreed following completion of IP4

[12] Emission limit to be agreed following completion of IP14. This has been deferred for consideration with IP25. No limit was agreed.

Dow Silicones Notes:

(13) There is no routine monitoring frequency required for A40 apart from the requirements listed in Table 2.10.1 under 'other requirements' and a method for such testing has not yet been agreed with the Agency. Dow Silicones has agreed with the Agency to use previously agreed IPC emission factors for silane releases from A40 for PI reporting purposes, as described in IPC improvement item 8.21. Under Improvement item IP3 the Environment Agency agreed to remove the requirement for silane monitoring at A41 when the ERU is not available for periods greater than 6 hrs.

(14) This is no longer made in W307.

(15) This was reported as a Schedule 5, no other exceedances during 2019

Signed



Date... 18th Jan 2022

(authorised to sign as representative of Operator)

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

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1] Mg/m ³	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
A41	Hydrogen chloride	15mg/m ³	0.34	US EPA Method 26	22/01/2021 12:10-13:10	UKAS & MCERTS	±36%
			0.24	US EPA Method 26	16/02/2021 11:41-12:41	UKAS & MCERTS	±36%
			3.02	US EPA Method 26	02/03/2021 11:47-12:47	UKAS & MCERTS	±36%
			2.59	US EPA Method 26	01/04/2021 12:05-13:05	UKAS & MCERTS	±36%
			1.61	US EPA Method 26	11/05/2021 11:45-12:45	UKAS & MCERTS	±36%
			0.83	US EPA Method 26	09/06/2021 11:34-12:38	UKAS & MCERTS	±36%
			0.58	US EPA Method 26	07/07/2021 10:33-11:33	UKAS & MCERTS	±36%
			0.66	US EPA Method 26	12/08/2021 12:15-13:15	UKAS & MCERTS	±36%
			0.45	US EPA Method 26	29/09/2021 10:33-11:33	UKAS & MCERTS	±36%
			0.33	US EPA Method 26	06/10/2021 11:00-12:00	UKAS & MCERTS	±36%
			1.04	US EPA Method 26	10/11/2021 11:50-12:50	UKAS & MCERTS	±36%
			0.35	US EPA Method 26	01/12/2021 12:11-13:11	UKAS & MCERTS	±36%
		10mg/m ³	1.003		Annual average		

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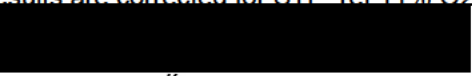
[3] For non-continuous measurements the date and time of the sample that produced the result is given. For continuous measurements the percentage of the process operating time covered by the result is given.

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[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Dow Silicones Notes:

HCl results are corrected for STP, ref 11% O₂, dry

Signature  Date... 18th Jan 2022 .

(authorised to sign as representative of Operator)

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

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1] Mg/m ³	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
A41	Chlorine	15mg/m ³	0.07	US EPA Method 26	22/01/2021 12:10-13:10	UKAS & MCERTS	±36%
			0.03	US EPA Method 26	16/02/2021 11:41-12:41	UKAS & MCERTS	±36%
			<0.05	US EPA Method 26	02/03/2021 11:47-12:47	UKAS & MCERTS	±36%
			2.99	US EPA Method 26	01/04/2021 12:05-13:05	UKAS & MCERTS	±36%
			1.48	US EPA Method 26	11/05/2021 11:45-12:45	UKAS & MCERTS	±36%
			0.27	US EPA Method 26	09/06/2021 11:34-12:38	UKAS & MCERTS	±36%
			0.24	US EPA Method 26	07/07/2021 10:33-11:33	UKAS & MCERTS	±36%
			0.54	US EPA Method 26	12/08/2021 12:15-13:15	UKAS & MCERTS	±36%
			0.11	US EPA Method 26	29/09/2021 10:33-11:33	UKAS & MCERTS	±36%
			2.48	US EPA Method 26	06/10/2021 11:00-12:00	UKAS & MCERTS	±36%
			0.18	US EPA Method 26	10/11/2021 11:50-12:50	UKAS & MCERTS	±36%
			1.06	US EPA Method 26	01/12/2021 12:11-13:11	UKAS & MCERTS	±36%
		10mg/m ³	0.859		Annual average		

[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.

Dow Silicones Notes:

Chlorine results are corrected for STP, ref 11% O₂, dry

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(authorised to sign as representative of Operator)

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

There weren't any transfers of Spent bed into W348 TCS spend bed tank and therefore no potential for associated chloromethane releases in 2021

Emission Point	Substance / Parameter	Emission Limit Value	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Accreditation/ Certification ^[4]	Uncertainty ^[5]
A57	Chloromethane	2kg/h	N/A				

[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.

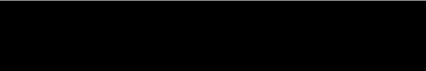
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[4] The accreditation status of the equipment and/or the monitoring organisation, as appropriate, for the methods used for both sampling and analysis.

[5] The uncertainty associated with the quoted result at the 95% confidence interval, unless otherwise stated.

Dow Silicones Notes:

There weren't any transfers of Spent bed into W348 TCS spend bed tank and therefore no potential for associated chloromethane releases in 2019

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Reporting of Energy Usage for the year 2021

Energy Source	Energy Usage		
	Quantity	Primary Energy (MWh)	CO ₂ Produced (tonnes)
Steam (tonnes)	592,013	515,254	97,871
Electricity *(kWh)	142,753,393	342,608	62,409
Natural Gas (kWh)	92,875,783	92,876	17,642
Gas Oil (tonnes)	0	-	0
TOTAL		950,738	177,922

Trends in Energy Usage			
Year	Parameter		
Year	Primary Energy usage	CO ₂ produced	CO ₂ per unit output
2008	1,101,571	207,755	
2009	1,066,743	183,110	
2010	1,018,415	191,869	
2011	1,040,640	195,636	
2012	1,044,862	197,154	
2013	1,039,643	196,913	
2014	1,080,683	204,686	
2015	1,060,647	200,560	
2016	1,065,704.1	200,195.5	
2017	1,040,379	196,834	
2018	1,123,088	211,053	
2019	1,009,656.98	187,789.38	
2020	1,058,178	195,995	
2021	950,738	177,922	

* Conversion factor for delivered electricity to primary energy = 2.4

Signed



Date... 18th Jan 2022

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GeneRabbit Business

GeneRabbit BusinessGeneRabbit Business

Waste Description	Route	Disposal Tonnes	Recovery Tonnes
Food waste for composting	Composted		2.87
General Waste	Energy recovery		195.04
Glass	Energy recovery		7.28
Gypsum	Landfill	1.96	
Lagging	Energy recovery		41.66
Magnesium Oxide/Calcium Carbonate	Landfill	28.58	
Non Haz White DPR (Q8-6717)	Landfill	51.9	
Paint Tins	Recycling		1.84
Paper	Energy recovery		3.03
Plastic	Energy recovery		63.26
Rubber	Energy recovery		387.18
Scrap metal	Recycling		183.63
Shot Blast	Recycling		105.9
Silicon Metal	Recycling		20
Wood	Recycling		226.03
Empty drums (tonnes)	Recycling		173.954
Empty IBC (tonnes)	Recycling		69.888
Excavation material - uncontaminated	Landfill	6.82	
Total Non Hazardous waste		5270.9	1702.362
TOTAL WASTE		9664.64	25415.88

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(authorised to sign as representative of Operator)

Trends in Waste Disposal and Recovery			
Year	Parameter		
OPERATOR COMMENTS: 2021 data was very similar to 2020 data. There was a decrease in CISi - DPR liquid gas (8-6149) due to shipping a backlog during 2020. Shipping for Energy recovery was less due to being unable to use the outlet in Germany. There was an increase in Haz DPR and a decrease in Non haz DPR due to processing issues causing it to fall in the Haz classification. There was less Spent sulphuric acid and Spent bed during 2021 due to lower production rates. There was more Biosludge during 2021 due to work to optimise the operation of the SWWT process.			

Reporting of Water Usage for the year 2021

Water Source	Usage (m ³)	Specific Usage (m ³ /t)
Towns water	357,393	
Bigliss well water	1,508,081	
Cadoxton river water	19,981	
TOTAL WATER USAGE	1,885,454	

Trends in Water Usage					
Year	Parameter				
	Towns water	Bigliss well water	Cadoxton river water	Total water usage	Water per unit output
2009	121,193	821,102	899,394	1,851,689	
2010	237,014	986,518	748,770	1,972,302	
2011	273,504	932,737	925,974	2,132,215	
2012	187,886	826,251	1,058,541	2,072,658	
2013	230,623	933,912	899,926	2,064,461	
2014	230,189	768,111	551,771	1,550,071	
2015	244,473	785,203	564,798	1,594,474	
2016	276,011	993,693	442,702	1,712,406	
2017	245,697	1,248,673	863,303	2,357,673	
2018	418,725	1,267,630	681,722	2,368,077	
2019	533,863	1,613,548	43,995	2,191,407	
2020	436,123	1,604,408	61,033	2,101,565	
2021	357,393	1,508,081	19,981	1,885,454	

Operator's comments :

Towns water data obtained from invoices.

River water and Biglis water is measured.

The Biglis water consumption includes the supply to the CHP

Signe



Date... 18th Jan 2022

(authorised to sign as representative of Operator)

Annual Reporting of Energy Recovery Unit Availability for the period from **January 1 2021 to December 31 2021**

Process	Parameter	Month	Result ^[3] , %
Energy Recovery Unit W949	Availability	January	99.02%
		February	96.56%
		March	99.30%
		April	98.86%
		May	98.25%
		June	100.00%
		July	99.23%
		August	98.82%
		September	84.59%
		October	100.00%
		November	100.00%
		December	100.00%
		Reporting year total	97.92%

[1] Based on the availability to process 100% of W714 FBR vent. Calculated using feed valve position and positive flows.

{2} 2021 the W714 unit was not operational.

[3] As W714 was not operational during 2021 – the availability has been calculated based on the availability to process vents from W931 and W930. This does include periods of lower venting due to online cleaning.

Signed  Date... .. 18th Jan 2022
(authorised to sign as representative of Operator)