

Permit Number:

EPR/XP3830UR

Operator:

The First Milk Cheese Company Limited

Facility:

Haverfordwest Creamery

Form Number:

Air1 / 21/07/2020

Reporting of emissions to air for the period from 01/01/2021 to 31/12/2021

Emission Point		Substance / Parameter	Emission Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
A1	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		No limit set	Periodic	Not operating	MCERTS BS EN 14792	N/A	N/A
A2	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		No limit set	Periodic	102.2mg/m ³	MCERTS BS EN 14792	12/01/22 12:50-13:50	+/- 4.7mg/m ³
A3	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)		No limit set	Periodic	172.9mg/m ³	MCERTS BS EN 14792	12/01/22 11:29-12:29	+/- 7.0mg/m ³
A4	Carbon monoxide	No limit set	Periodic	340.8mg/m ³	MCERTS BS EN 15058	13/01/22 12:07 – 13:07	+/- 12.5mg/m ³	
	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	95 mg/Nm ³ ^[5]	Periodic	90.0mg/m ³	MCERTS BS EN 14792	13/01/22 12:07 – 13:07	+/- 3.5mg/m ³	

Notes:

[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 Natural Resources Wales 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] At reference conditions of a temperature of 273.15 K, a pressure of 101.3 kPa and after correction for the water vapour content of the waste gases at a standardised O₂ content of 6 % for solid fuels, 15 % for engines and gas turbines and 3 % for all other MCPs

Signed 
(Authorised to sign as representative of Operator)

Date..... 28/01/22

Note – results stated as measured – uncertainty not applied to results.

Permit Number:
Facility:

EPRI/XP3830UR
Haverfordwest Creamery

Operator:
Form Number:

The First Milk Cheese Company Limited
Water1 / 21/07/2020

Reporting of emissions to water (other than to sewer) and land for the period from 01/01/2020 to 31/12/2020

Emission Point	Substance / Parameter	Limit Value	Reference Period	Result ^[1]	Test Method ^[2]	Sample Date and Times ^[3]	Uncertainty ^[4]
W2	Maximum daily discharge volume	2500 m³/day	Total daily volume	2398	Flow meter	01/12/2021	Rated +/0.5%. Actual @100m³/hr = +0.06%/-0.07%
	Maximum rate of discharge	120 m³/hr	Instantaneous	100	Flow meter	01/12/2021	Rated +/0.5%. Actual @100m³/hr = +0.06%/-0.07%
	Temperature	35 °C	Absolute maximum	24.8	Standard thermocouple	18/07/2021	0.08%
	Biochemical oxygen demand	40 mg/L	Absolute maximum	19.0 mg/l 4.0mg/l	BS EN 1899-1	09/02/2021	23.6%
		20 mg/L	95 th percentile ^[5]				
	Total suspended solids	60 mg/L	Absolute maximum	42.0mg/l 25.0mg/l	BS EN 872	21/06/2021	33.3%
		30 mg/L	95 th percentile ^[5]				
	Ammonia	10 mg/L	Absolute maximum	3.20mg/l 2.16mg/l	BS EN ISO 11732	01/07/2021	18%
		3.5 mg/L	95 th percentile ^[5]				
	Total phosphates	5 mg/L	Absolute maximum	3.05mg/l 2.91mg/l	BS EN ISO 15681-1	22/06/2021	3.4%
		3 mg/L	95 th percentile ^[5]				
	Iron	10 mg/L	Absolute maximum	0.75mg/l 0.68mg/l	BS EN ISO 11885	28/03/2021	29%
		5 mg/L	95 th percentile ^[5]				
	Aluminium	2 mg/L	Absolute maximum	1.3mg/l 0.7mg/l	BS EN ISO 11885	02/03/2021	16.4%
		1 mg/L	95 th percentile ^[5]				
pH	6 – 9	Absolute maximum	8.7	BS ISO 10523	18/04/2021	6.6%	

Notes:

[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 Natural Resources Wales 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] For 95 % of all measured values according to look up table

Signed  Date 28/01/22
(Authorised to sign as representative of Operator)

Note – results stated as measured – uncertainty not applied to results.

Permit Number:

EP/RX/P3830UR

Operator:

The First Milk Cheese Company Limited

Facility:

Haverfordwest Creamery

Form Number:

WaterUsage1 / 21/07/2020

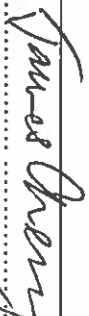
Reporting of Water Usage for the year 01/01/2021 to 31/12/2021

Water Source	Usage (m ³ /year)	Specific Usage (m ³ /unit output)
Potable water	267,170	7.09 m ³ /tonne
Non potable water	228,266	6.06 m ³ /tonne
TOTAL WATER USAGE	495,436	13.15 m ³ /tonne

Operator's comments:

Non-potable water refers to water extracted from the cheese making process which is used within the production system

Cheese produced in 2021 = 37,673 Tonnes

Signed 
(authorised to sign as representative of Operator)

Date..... 28/01/22

Permit Number:

EPR/XP3830UR

Operator:

The First Milk Cheese Company Limited

Facility:

Haverfordwest Creamery

Form Number:

Energy1 / 21/07/2020

Reporting of Energy Usage for the year 01/01/2021 to 31/12/2021

Energy Source	Energy Usage		Specific Usage (MWh/unit output)
	Quantity	Primary Energy (MWh)	
Mains Electricity*	2,701 MWh	6,482 MWh	0.072 MWh / per tonne of cheese (Delivered) 0.172 MWh / per tonne of cheese (Primary)
Natural Gas**	51,472 MWh	62,796 MWh	1.366 MWh / per tonne of cheese (Delivered) 1.667 MWh / per tonne of cheese (Primary)
TOTAL	54,173 MWh	69,278 MWh	1.438 MWh / per tonne of cheese (Delivered) 1.839 MWh / per tonne of cheese (Primary)

*Conversion factor for delivered electricity to primary energy = 2.4

**Conversion factor delivered gas to primary energy = 1.22

Operator's comments:

- Cheese produced in 2021 = 37,673 tonnes
- Natural gas fired CHP output (Electricity) included on sheet "Performance1" below

Signed

James O'Keefe
(Authorised to sign as representative of Operator)

Date.....

28/01/22

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Haverfordwest Creamery

Form Number:

Performance1 / 21/07/2020

Reporting of other performance indicators for the period 01/01/2021 to 31/12/2021

Parameter	Units
Total raw material used	346,206 tonnes of milk
Natural gas fired CHP output (Electricity)	7,421 MWh
Waste disposal and/or recovery	119.76 tonnes (as reported by contractor and WT Notes)
Mass of ammonia released to water	49.77 kg
Mass of refrigerants released	0 (zero) tonnes
Annual report with the amount of nitrates, suspended solids and phosphates reduced from the nutrient efficiency (offset) scheme	*see note below

Operator's comments:

Conversion of litres milk to tonnes – used specific gravity of 1.035

Figures based on data from ETP as listed in table (water information)

All R22 gas has been removed and from site and replaced with an alternative product

*Data with regards to the Nutrient offset scheme will be provided in their annual report which is sent direct to NRW by our membership team manager

Signed

(Authorised to sign as representative of Operator)

Date

28/01/22

Review of 2021 reporting data

Air emissions

Similar pattern of results on stack emissions from combustion plant to last year. Steam boiler 1 was down for maintenance around the period of reporting, and as a consequence the less utilised standby boiler was being operated. This had a slightly elevated NOx reading compared to the main boiler, but emissions for all were within the future MCPD limits for NOx for existing boilers of 200mg/m³.

The CHP emissions were slightly lower than 2021 and within the permit emissions limits as measured, without taking into account the uncertainty factor.

Emissions to Water

As measured, all parameters for discharge to water were well within the 95th percentile and absolute maximum emission values (as measured, not taking into account uncertainty factors), showing a very good level of compliance over the year.

Water consumption

There was a slight uplift in total and specific water consumption compared to 2020, but there was a significant improvement in utilising recovered water from the incoming milk. The proportion of water recovered from milk for reuse rose from 37% in 2020 to 46% in 2021.

Energy

Year on year there has been an increase in specific gas consumption and a decrease in specific electricity consumption. However, this is driven by the first full year of operation of the CHP engine, with an overall efficiency improvement through the capture and utilisation of waste heat from the CHP to generate steam and hot water, substituting some of the heat previously generated by the steam boilers.