

**Graham's, The Family Dairy
Airthrey Kerse Dairy,
Henderson Street, Bridge of Allan,
Stirlingshire, FK9 4RW**

Permit Application Number

PPC/A/1198070

Draft for Consultation

CONTENTS

1	NON TECHNICAL SUMMARY OF DETERMINATION.....	3
2	EXTERNAL CONSULTATION AND SEPA'S RESPONSE.....	3
3	ADMINISTRATIVE DETERMINATIONS	6
4	INTRODUCTION AND BACKGROUND.....	6
4.1	Historical Background to the activity and application/application.....	6
4.2	Description of activity	6
4.3	Outline details of the Application applied for/proposed.....	6
4.4	Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.....	7
4.5	Identification of important and sensitive receptors	7
5	KEY ENVIRONMENTAL ISSUES.....	7
5.1	Summary of significant environmental impacts	7
5.2	Implications of the Application on - Point Sources to Air	7
5.3	Implications of the Application on - Point Source Emissions to Surface Water and Sewer ..	8
5.4	Implications of the Application on - Point Source Emissions to Groundwater	8
5.5	Implications of the Application on - Fugitive Emissions to Air	9
5.6	Implications of the Application on - Fugitive Emissions to Water	9
5.7	Implications of the Application on - Odour	9
5.8	Implications of the Application on - Management	9
5.9	Implications of the Application on - Raw Materials	10
5.10	Implications of the Application on - Raw Materials Selection.....	11
5.11	Implications of the Application on - Waste Minimisation Requirements	11
5.12	Implications of the Application on - Water Use.....	12
5.13	Implications of the Application on - Waste Handling	12
5.14	Implications of the Application on - Waste Recovery or Disposal	12
5.15	Implications of the Application on - Energy	12
5.16	Implications of the Application for - Accidents and their Consequences	13
5.17	Implications of the Application for - Noise	13
5.18	Implications of the Application for - Monitoring	15
5.19	Implications of the Application for - Closure	15
5.20	Implications of the Application for - Site Condition Report	15
5.21	Implications of the Application for - Consideration of BAT	16
6	OTHER LEGISLATION CONSIDERED.....	16
7	ENVIRONMENTAL IMPACT ASSESSMENT AND COMAH	17
8	DETAILS OF NON STANDARD PERMIT CONDITIONS	18
9	EMISSION LIMIT VALUES OR EQUIVALENT TECHNICAL PARAMETERS/ MEASURES	18
10	PEER REVIEW	18
11	FINAL DETERMINATION	19
12	REFERENCES AND GUIDANCE.....	19

1 NON-TECHNICAL SUMMARY OF DETERMINATION

Graham's, The Family Dairy has operated from the Airthrey Kerse Dairy since 1939 and has become Scotland's largest independent dairy delivering to over 6,000 retail customers per day across the UK.

The company operates three strategically located processing facilities in Scotland at Airthrey Kerse (Stirling), Glenfield (Cowdenbeath, Fife) and Balmakeith (Nairn) supported by distribution depots in Stirling, Inverkeithing, Port Dundas and Kintore.

Graham's remains a family business headquartered at the Airthrey Kerse dairy. The Airthrey Kerse dairy processes 2.5 million litres of milk per week (averaging 350,000 litres per day) which equates to approximately 350 tonnes per day. This steady growth in treatment and processing of milk has led to the requirement to now register the dairy under the Pollution Prevention and Control (Scotland) Regulations 2012 as this exceeds the thresholds set under Schedule 1, Section 6.8 Part A (e) of "treating and processing milk, the quantity of milk received being more than 200 tonnes per day (average value on an annual basis)".

The Airthrey Kerse dairy is located on the Carse between Bridge of Allan and Causewayhead. The dairy processes milk including full, semi-skimmed and organic and produces block and spreadable butter and cream. Airthrey Kerse is also the headquarters for the business and includes management, finance, sales, and marketing. The Airthrey Kerse site comprises approximately 3 hectares (4,000m² internal space) to support incoming milk, pasteurisation, bottling, packaging, chill, dispatch, and associated support services including vehicle workshops and parking. The main incoming material flows are whole milk and plastic bottles, and dispatch relates to dairy products for retail customers and recycled packaging (paper). The dairy is served by mains water, electricity and gas with process residue treated through a Dissolved Air Flotation (DAF) plant with treated effluent discharged to the main public sewer which leads to the Stirling Wastewater Treatment Works.

Glossary of terms

BAT	-	Best Available Techniques
CO	-	Coordinating Officer
ELV	-	Emission Limit Value
DAF	-	Dissolved Air Flotation
EMS	-	Environmental Management System

2 EXTERNAL CONSULTATION AND SEPA'S RESPONSE**Is Public Consultation Required - Yes**

Advertisements Check:	Date	Compliance with advertising requirements
Edinburgh Gazette Friday	15th January 2021	Yes
Stirling Observer	15th January 2021	Yes

Officer checking advert: M MacGregor

No. of responses received: 0 (Zero)
Summary of responses and how they were taken into account during the determination: No responses received.
Summary of responses withheld from the public register on request and how they were taken into account during the determination: None
Is PPC Statutory Consultation Required – Yes
Food Standards Agency: Consulted 22 Dec 2020, no response received.
Health Board (Forth Valley): Consulted 22 Dec 2020, no response received.
Local Auth (Stirling Council): Consulted 22 Dec 2020, no response received.
<p>Scottish Water: Consulted 22 Dec 2020, no response received. Further information on Trade effluent discharge and its constituents requested from local Scottish Water Trade Effluent team 10 November 2021.</p> <p>Clarification on discharge received on 10 November 2021 <i>‘From my understanding of the site set up, at least some of the surface water from the site is collected, passes through the DAF treatment plant and is then discharged to the foul sewer. This has caused issues in the past as the DAF plant couldn’t always cope with the additional surface water volume during heavy rainfall. GFD have been examining options to deal with this.</i></p> <p><i>Since the DAF plant was installed at GFD Scottish Water has introduced a Surface Water Management Policy, the aim of which is to have no new surface water discharges to the foul sewer and to remove existing surface water discharges to the foul where feasible and practicable. So ideally, our preferred option for GFD would be to remove (uncontaminated) surface water from the foul/combined system.’</i></p> <p>Grahams have supplied further information on the endeavour to separate the Foul and Surface water drainage systems. The full report is included as appendix X but in summary: <i>‘Drainage infrastructure to the Airthrey Kerse Dairy is divided into three sections: (i) foul drainage for all dairy production and processing, cleaning in process and engineering workshop is diverted to an onsite pre-treatment DAF plant with interceptors, prior to discharge into the public sewer, under Scottish Water Consent Licence Reference 1243A01, (ii) yard surface water which connects into the primary field drain to discharge into the Forglen burn and (iii) field drainage into the Forglen burn. The foul drainage system is separate from the surface water drains with no connections.’</i></p> <p>These networks are shown within the supplied report in Appendix 1 - Figure 1A - Dairy Farm Drainage (Full) illustrating the estate network and Appendix 2 – Figure 1B Dairy Farm Drainage (Dairy).</p> <p>Conditions within the permit clarify that SEPAs expectations as follows: 4.2.1. <i>There shall be no discharge to the surface water drainage system from the Permitted Installation other than uncontaminated surface water.</i> 4.2.3. <i>All effluent from the Permitted Installation other than uncontaminated surface water shall be discharged to the effluent treatment system’</i></p>

For the full text of conditions relating to discharges from the site please refer to Condition 4.2 Water and Effluent Discharge Conditions, contained within the permit.

Nature Scot (PPC Regs consultation): Initial consultation 22 Dec 2020, NS responded *'We welcome the proposed SCAIL modelling approach regarding potential air pollution impacts on the nearby Abbey Craig SSSI and River Teith SAC. We have no further comments at this stage.'*

Following further information provided by the applicant clarification on the proposed SCAIL modelling was issued to Nature Scot on 09 November 2021 as follows:

With regards to the above application you had mentioned that you welcomed the proposed SCAIL modelling approach regarding potential air pollution impacts on the nearby Abbey Craig SSSI and River Teith SAC. In the original consultation letter/email we referred to the SCAIL modelling being used in respect to ammonia modelling, this was in error as that approach only applies to pig and poultry farms.

Further information supplied in support of the application has indicated that the potential for air emissions is low and the dairies steam generation equipment has a capacity of less than 1MW where we would start to model the output for potential impact. We will include conditions relating to the output from the boiler and descriptive conditions relating to startup of the equipment.

The site has no discharge of trade effluent to the nearby Forglen Burn, the trade effluent is discharged to the Scottish Water foul sewer.

There is a discharge of surface water from the site to the Forglen Burn but this will be via a full retention interceptor and will be monitored regularly for Biochemical Oxygen Demand, Suspended Solids as part of permit requirements.

I'll be happy to provide any further information you feel necessary to assess potential environmental risks from the Nature Scotland perspective. Alternatively, if you have any comments I'll be happy to respond by return.

Nature Scot responded on 10 November 2021 as follows:

'Many thanks for the update. We have no further comments to make.'

Discretionary Consultation – N/A

Enhanced SEPA public consultation – N/A

'Off-site' Consultation – N/A

Transboundary Consultation - N/A

Public Participation Consultation - Yes

STATEMENT ON THE PUBLIC PARTICIPATION PROCESS

The Pollution Prevention and Control (Public participation) (Scotland) Regulations 2005 requires that SEPA's draft determination of this application be placed on SEPA's website and public register and be subject to 28 days' public consultation. The dates between which this consultation took place, the number of representations received and SEPA's response to these are outlined below.

Date SEPA notified applicant of draft determination.	19 November 2021
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Date draft determination placed on SEPA's Website.	04 February 2022
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Details of any other 'appropriate means used to advertise the draft.	
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Date public consultation on draft permit opened.	04 February 2022
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<i>Date public consultation on draft permit consultation closed.</i>	
<i>Number of representations received to the consultation.</i>	
<i>Date final determination placed on the SEPA's Website.</i>	
<i>Summary of responses and how they were taken into account during the determination:</i>	

3 ADMINISTRATIVE DETERMINATIONS
<i>Determination of the Schedule 1 activity</i>
As detailed in the application
<i>Determination of the stationary technical unit to be permitted:</i>
As detailed in the application
<i>Determination of directly associated activities:</i>
As detailed in the application
<i>Determination of 'site boundary'</i>
As detailed in the application
<i>Officer: MM</i>

4 INTRODUCTION AND BACKGROUND

4.1 Historical Background to the activity

Graham's, The Family Dairy has operated from the Airthrey Kerse Dairy located on the Carse between Bridge of Allan and Causewayhead since 1939 and has become Scotland's largest independent dairy.

The Airthrey Kerse dairy processes milk including full, semi-skimmed and organic and produces block and spreadable butter and cream. Airthrey Kerse is also the headquarters for the business and includes management, finance, sales, and marketing.

The dairy processes 2.5 million litres of milk per week (averaging 350,000 litres per day) which equates to approximately 350 tonnes per day. This steady growth in treatment and processing of milk has led to the requirement to register the dairy under the Pollution Prevention and Control (Scotland) Regulations 2012 as this volume exceeds the threshold of 200 tonnes per day set under these regulations under

4.2 Description of activity

The activity is described in the Pollution Prevention and Control (Scotland) Regulations 2012, Schedule 1, Section 6.8 Part A (e) of "treating and processing milk, the quantity of milk received being more than 200 tonnes per day (average value on an annual basis)".

4.3 Guidance/directions issued to SEPA by the Scottish Ministers under Reg.60 or 61.

None

4.4 Identification of important and sensitive receptors

The Forglen Burn is approximately 250m South Southeast of the main site at its nearest point.

Abbey Craig Site of Special Scientific Interest is approximately 1500m Southeast of the site at its closest point

Designation Status: Current, Lead: NatureScot, Area: Forth, Local Authority: Stirling

Last Designated: 12 Oct 1984, NatureScot Site Code: 3, Documented Area: 8.23 ha, EU Site Code: 135166

The River Teith Special Area of Conservation is approximately 1500m Southwest of the site at its closest point.

Designation Status: Current, Lead: Nature Scot, Area: Forth, Local Authority: Stirling

Last Designated: 17 Mar 2005, Nature Scot Site Code: 8367, EU Site Code: UK0030263

Documented Area: 1289.33 ha.

The nearest buildings to the site are the Fairview International School located approximately 60m North Northeast of the main site at the opposite side of the A9 road.

The nearest housing to the site is located approximately 110m to the North of the site on Kenilworth Road, Bridge of Allan.

5 KEY ENVIRONMENTAL ISSUES

5.1 Summary of significant environmental impacts

There are no major point source discharges to air or surface water from the facility.

The plant is served by two 860kW gas steam boilers which discharge via independent stacks to air.

Waste water from the process is treated onsite prior to discharge to the foul sewer under a trade effluent agreement from Scottish Water.

Surface water is discharged to the Forglen Burn via a full retention interceptor.

There have been no substantiated complaints relating to noise or odour from the facility.

These aspects of the permit are assessed fully within the remainder of Section 5 of this document.

5.2 Implications of the Application on - Point Sources to Air

The site has 2 x container packaged Gas steam boilers with each boiler rated at:

- 1,000kg of steam per hour@ 10.3 Bar
- Natural Gas burners output rating 225-860KW
- Each flue is 350mm diameter and 750mm above the roof of the container total flue length 1,300mm approx.
- Each flue has a sample point for the flue gas analysis and tested annually with the boiler inspections.

In considering the plant against the requirements of the Medium Combustion Plant directive the plant would be classed as existing, it has been on site since before December 2018 as mentioned in the legislation so they are considered as existing plant:

'existing combustion plant' means a combustion plant put into operation before 20 December 2018 or for which a permit was granted before 19 December 2017 pursuant to national legislation provided that the plant is put into operation no later than 20 December 2018'

They have two steam generating boilers, both rated at 860KW, these are both under the 1MW threshold where the directive starts to apply.

They also vent through different stacks and have done since they were installed, prior to 2018 as described above. The legislation covering this is as below but as mentioned they count as existing plant so this does not apply:

'A combination formed by two or more new medium combustion plants shall be considered to be a single medium combustion plant for the purposes of this Directive and their rated thermal input shall be added together for the purpose of calculating the total rated thermal input of the plant, where:

- *the waste gases of such medium combustion plants are discharged through a common stack, or*
- *taking into account technical and economic factors, the waste gases of such medium combustion plants could, in the judgement of the competent authority, be discharged through a common stack.'*

As a result the units do not get their kW ratings combined to produce a 'total' figure, SCAIL modelling is not required and there is no necessity to include numeric ELV's, descriptive conditions based on the Ringelmann shade index are applied to the discharge points.

The site also has a standby generator to cope with any interruptions to mains power supply, as a result the generator is run infrequently aside from regular preventative maintenance.

1 x Electrical Standby generator with canopy

- Diesel generator 3012-TAG3
- 750kva electrical rating
- Twin exhaust 110mm
- 3,000lt diesel bunded fuel storage tank.
- output rating of standby generator is Max 741KW.

The stand-by generator is located to the north of the site and is set within a noise rated containerised unit to minimise noise transmission during testing and emergency operation.

As per the steam generation units above this plant is classed as existing prior to 2018 and falls underneath the 1MW threshold where the directive starts to apply. As a result SCAIL modelling is not required and there is no necessity to include numeric ELV's, descriptive conditions based on the Ringelmann shade index are applied to the discharge point.

5.3 Implications of the Application on - Point Source Emissions to Surface Water and Sewer

The main discharge of aqueous waste from the site is to the foul sewer point and is detailed in a Trade Effluent Consent from Scottish Water, Trade Effluent Disposal Licence 1243A01. A copy of the Trade Effluent Consent was supplied as part of the application. As there are no direct point source discharges to surface water from the facility. As such the recommendations within BAT section 1.7 Emissions to water are not directly applicable.

There is one discharge point for surface water from the site, a discharge to the Forglen Burn at NS 79830 96582. This discharge consists of surface water from the yard area surrounding the site and is treated via a full retention interceptor prior to discharge. Conditions will be included within the permit to require monitoring the discharge for numeric discharge values relating to BOD, Suspended Solids and pH. The conditions will provide reassurance that the site has no impact on the Forglen burn and are consistent with those applied at other similar facilities.

Numeric conditions:

Discharge to Forglen Burn at: NS 79830 96582

BOD (mg/l)	3
Suspended Solids (mg/l)	25
pH	6 - 9

5.4 Implications of the Application on - Point Source Emissions to Groundwater

There are no direct point source discharges to Groundwater from the facility.

5.5 Implications of the Application on - Fugitive Emissions to Air

The Airthrey Kerse Dairy has been in existence for a considerable time. All on site processes, aside from tanker unloading, are carried out within the dairy buildings. This minimises the potential for fugitive emissions to air. As a result fugitive emissions would most likely arise from spills accidents or incidents at the site and are more than likely to give rise to odour complaints. Odour generation and control of odour at the site is dealt with under Section 5.7 below.

5.6 Implications of the Variation on - Fugitive Emissions to Water

The main fugitive emissions to water would come from a spill or accident on site and would consist of the emissions from tanker unloading, dairy process areas or refuelling of vehicles.

The applicant has advised that there are no watercourses in the immediate vicinity of the site and that a number of measures have been incorporated into the site which are designed to prevent or minimise fugitive releases of pollutants to, groundwater, foul sewer, and surface waters. The dairy comprises predominantly hard concrete hard standings with bunding and kerbs as required with service water drains directed to the DAF plant. Borders on site capture any potential overland flows for discharge within the DAF plant.

The diesel tank on site is a steel, bunded tank with a 10,000lt capacity. It is digitally controlled with authorisation codes required for use, all pipework for filling the tank and for refuelling vehicles is located within the tank bund. This tank location is within the boundary of the site drainage network with any spillage and/or cleaning channelled to the sited DAF plant and trunk sewer, consistent with the Scottish Water licence and on-site spillage protocols.

Parking to the periphery of the site comprises type 1 gravel for water infiltration. Surface water drains collect the water from the parking areas and these are directed through the interceptor to the Forglen burn as described in Section 5.3 above.

5.7 Implications of the Application on – Odour

The BAT summary for dairy processes Section 1.9 provides the following information in relation to odour:

<p>BAT 15</p>	<p>In order to prevent or where that is not practicable, to reduce odour emissions, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - A protocol containing actions and timelines. - A protocol for conducting odour monitoring. It may be complemented by measurement/estimation of odour exposure or estimation of odour impact. - A protocol for response to identified odour incidents, e.g., complaints. - An odour prevention and reduction programme designed to identify the source(s) to measure/estimate odour exposure; to characterise the contributions of the sources and to implement prevention and/or reduction measures. <p>Applicability BAT 15 is only applicable to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.</p>
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There have been no substantiated odour complaints in relation to the facility as such the BAT in Table 15 is not applicable at present.

5.8 Implications of the Application on – Management

BAT requires the operator to have an EMS include as a permit requirement but at present there is no requirement for the EMS to be formally accredited.

Currently the Airthrey Kerse dairy use an unaccredited EMS supervised by the Graham's, The Family Dairy Operations Director and supported by senior posts to reflect site processes:

- Incoming Milk (Dairy Manager)
- Processing (Production Manager)
- Cream and Butter Production (Butter Manager)
- Dispatch (Transport Manager)
- Site Services including DAF operation (Estates Manager)

All managers are suitably trained and experienced and are supported in their tasks through a daily morning management briefing and regular oversight from the Managing Director and Chairman. External support is offered through a core team comprising environmental management, trade effluent, utilities and legal. The allocation of senior management roles to corporate processes alongside daily reviews and board oversight, with external advice, reflects best practice within the industry and wider production processes.

This process is regularly reviewed included through external audits (announced and unannounced) by corporate customers.

Where a BAT contains additional requirements not covered by the installation's current EMS, the operator should be required to update the EMS accordingly. This can be done at permit review or by the addition of an improvement condition in the permit that require the EMS to be modified to fully comply with the BAT requirements.

The permit includes conditions to formalise the recording and reporting of information required by an EMS with Schedule 2 Standard Conditions introducing requirements relating to the following areas:

- 2.1. Administration,
- 2.2. Records,
- 2.3. Reporting,
- 2.4. Incidents,
- 2.5. Resource Utilisation,
- 2.6. Waste Management,
- 2.7. Protection of Soil and Groundwater,
- 2.8. Start Up,
- 2.9. Decommissioning,
- 2.10. Sampling and Monitoring Facilities,
- 2.11. Staffing and Management

BAT for the dairy sector is to implement and adhere to an EMS that incorporates all of the features detailed (but also specifically for the food, drink and milk sector, BAT is to also incorporate the following features in the EMS)

- (i) noise management plan (see BAT 12);
- (ii) odour management plan (see BAT 14);
- (iii) inventory of water, energy and raw materials consumption as well as of waste water and waste gas streams (see BAT 2);
- (iv) energy efficiency plan (see BAT 6a)

Conditions relating to the potential for (i)noise and (ii)odour for the site are also included as conditions 3.1 and 3.2 respectively within the permit. Items (iii) and (iv) above are controlled via the inclusion of condition 2.5. Resource Utilisation, within the permit.

5.9 Implications of the Application on - Raw Materials

The table below lists the input materials, daily volumes, and flow paths.

Input Materials

Material	Volume per day (litres)	Flow path
Whole milk	350,000 litres/day	Pasteurised for liquid milk and bottling for dispatch to customers
Whole milk – cream	20,000 litres/day	Pasteurised for cream and bottling for dispatch to customers
Whole milk – butter (block and spreadable)	12,000 litres/day	Dispatch to customer
Water	200,000 litres/day	Used for cleaning, through heating (steam) with process residues treated in the DAF prior to discharge under Trade Effluent Consent Licence to Stirling sewage treatment works.
Plastic bottles	230,000 bottles/day (Various sizes)	Cleaned prior to filling and dispatch to retail and customers

Graham's, The Family Dairy operates within an accredited Packaging Recovery Note (PRN) system for the management of plastic for end users.

5.10 Implications of the Application on - Raw Materials Selection

Due to the nature of the activity, there are a limited range of materials which can be utilised within the on site processes, these also fall within the regulatory requirements of the Food Standards Agency. As a safeguard to mitigate against any potential environmental impact conditions are included within the permit requiring the operator to carry out a review to ensure that the necessary systems are adopted to minimise the pollution potential from any proposed new material to be used on site. These are included as Section 4.5. Introduction of New Raw Materials, within the permit.

5.11 Implications of the Application on - Waste Minimisation Requirements

Graham's, The Family Dairy operate a closed system for waste management within the Airthrey Kerse dairy. Process inputs, which cover milk, plastic bottles and packaging are converted into products which are subsequently dispatched to consumers. Waste streams are limited to the following:

(i) Trade Effluent, which mainly comprises of water, used for cleaning, through heating (steam) with process residues treated on site through a DAF facility and then discharged to the Stirling Wastewater Treatment Works consistent with the dairy's Trade Effluent Consent. Wash water is treated prior to disposal through the DAF system and, where possible is recycled within the operational processes.

The following information is supplied in the BAT guidance documentation.

BAT 7	In order to reduce water consumption and the volume of wastewater discharged BAT is to use BAT 7 (a) Water recycling and/or reuse and one or a combination of the techniques b to k given.
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The recycling of wash water is in line with the requirements of BAT 7.

(ii) Sludge arising from the DAF facility at an estimated 130 litres per day (0.13 tonnes) is held in a balancing tank and transported under a waste transfer licence by Gogar Transport to anaerobic digester facilities in Scotland.

(iii) Packaging arising in the form of card which are collected by recycling companies.

This process is controlled through the management technique as set out in Section B2.1 of the application, with each of the senior posts linked to site processes responsible for waste management, with oversight from the Graham's, The Family Dairy Operations Director. This reflects BAT industrial processes in general.

5.12 Implications of the Application on - Water Use

The Airthrey Kerse facility uses approximately 200,000 litres of water per day Wash water is treated prior to disposal through the DAF system and, where possible is recycled within the operational processes.

The BAT summary for dairy processes Section 4.2 Water consumption and wastewater discharge gives the following figures for water consumption:

Table 9: Indicative environmental performance levels for specific wastewater discharge

Main product (at least 80% of the production)	Unit	Specific wastewater discharge (yearly average)
Market milk	M ³ /tonne of raw materials	0.3 - 3.0
Cheese		0.75 - 2.5
Powder		1.2 - 2.7

The figures supplied in the application would give a calculated wastewater discharge of 0.57m³/tonne of raw material, which constitutes BAT under this guidance as the main product is market milk (350tonnes milk, 200m³ of water use).

5.13 Implications of the Application on - Waste Handling

All recyclable waste, cardboard, paper, timber, polythene etc, is collected and segregated into separate skips/containers prior to collection and recycling as appropriate. Grahams are currently investigating further options towards further plastic recycling for waste not currently recycled. Tipped milk and the butter machine washdowns are collected in 1,000 IBC's and sent to an AD plant. Sludge generated by the onsite DAF plant is collected and taken to an AD plant.

5.14 Implications of the Application on - Waste Recovery or Disposal

As mentioned in section 5.13 above all recyclable waste, cardboard, paper, timber, polythene etc, is collected and segregated into separate skips/containers prior to collection and recycling as appropriate. Grahams are currently investigating further options towards further plastic recycling for waste not currently recycled.

Tipped milk and the butter machine washdowns are collected in 1,000 IBC's and sent to an AD plant. Sludge generated by the onsite DAF plant is collected and taken to an AD plant.

5.15 Implications of the Application on – Energy

Energy consumption for the Airthrey Kerse site is as detailed below:

Supply	Kilowatt Hour/year
Electricity	3,500,000 kW hrs
Gas	5,500,000 kW hrs

The Airthrey Kerse dairy is supplied by mains electricity and gas. Predominant use relates to the processes in connection with pasteurisation, separation, packaging, and cleaning. Mains sources reflect the history of the site and, consistent with Graham's, The Family Dairy's transition to zero carbon, feasibility work into generation and storage of electricity, heat and transport fuel is under consideration. Note: Graham's, The Family Dairy have recently secured planning permission for a 15MW solar farm on land in the Carse of Stirling whilst the Glenfield dairy in Cowdenbeath forms part of Scottish

Government’s Low Carbon Innovation Transition Programme for the use of processed residues for heat generation, which is subject of a planning application.

Energy Efficiency Measures Graham’s, The Family Dairy adopt a continuous improvement process to all process improvements which includes identifying opportunities for energy efficiency. 2019 saw the implementation of an Energy Saving Opportunity Scheme (phase 2). Building on this work, Graham’s, The Family Dairy are working with an external team to explore further efficiencies around temperature sensors, water control and effluent disposal. Longer term considerations include the consideration of alternative fuels for freight. This approach is consistent with BAT with the dairy sector and, in connection with exploring alternate fuels, is aligned with industrial applications of zero carbon transport strategies.

The Airthrey Kerse site is also the subject of a Climate Change Levy Agreement, Agreement identifier: DIAL/T00065 v4 Graham’s, the family dairy (Milk Products) Ltd.

The BAT summary for dairy processes Section 4.1 Energy efficiency gives the following figures for energy consumption: -

Table 8: Indicative environmental performance levels for specific energy consumption

Main product (at least 80% of the production)	Unit	Specific energy consumption (yearly average)
Market milk	MWh/tonne of raw materials	0.1 - 0.6
Cheese		0.10 - 0.22 ⁽¹⁾
Powder		0.2 - 0.5
Fermented milk		0.2 - 1.6
⁽¹⁾ The specific energy consumption level may not apply when raw materials other than milk are used.		

The figures supplied in the application would give a calculated energy consumption of 0.07MWh/tonne of raw material, which constitutes BAT under this guidance as the main product is market milk (350tonnes/ day milk (127,750tonnes/year), 9000MWh of energy use/year).

5.16 Implications of the Application for - Accidents and their Consequences

The Airthrey Kerse facility has an onsite Health and Safety Manager as part of the senior project team. Graham’s, The Family Dairy operate a comprehensive health and safety process with a copy of the company risk assessment, health and safety policy along with a template risk assessment provided alongside the application as an example.

In addition to the existing policies and safeguards section 4.7 Incident prevention, requires the Operator to prepare, record and implement a spillage plan designed to prevent the release of any pollutants from the site.

5.17 Implications of the Application for – Noise

Airthrey Kerse has been a dairy for 81 years and adjoins Bridge of Allan. In terms of noise impact on neighbouring properties, all processes are contained with the production facility.

Potential noise generators relate to vehicle movements, parking and associated chill activities. Freight parking is directed to the perimeters of the site with the nearest residential property being 110 metres. Through vehicle management directed by the Transport Manager, vehicles with refrigeration that require static operation prior to dispatch are located on the eastern boundary of the site away from all residential properties. There are no external fridges or generators in operation, albeit for resilience purposes, the site operates a stand-by generator located to the north of the site. This is set within a noise rated containerised unit to minimise noise transmission during testing and emergency operation.

The BAT summary for dairy processes Section 1.8 Noise provides the following information in relation to noise:

BAT 13	<p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to set up, implement and regularly review a noise management plan, as part of the environmental management system (see BAT 1), that includes all of the following elements:</p> <ul style="list-style-type: none"> - A protocol containing actions and timetables; - A protocol for conducting noise emissions monitoring; - A protocol for response to identified noise events, e.g., complaints. - A noise reduction programme designed to identify the source(s), to measure/estimate noise and vibration exposure, to characterise the contributions of the sources and to implement prevention and/or reduction measures. <p>Applicability BAT 13 is only applicable to cases where a noise nuisance at sensitive receptors is expected and/or has been substantiated.</p>
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The following information is also provided:

BAT 14	<p>In order to prevent or, where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of the techniques given below:</p>		
	Technique	Descriptions	Applicability
	(a) Appropriate location of equipment and buildings	Noise levels can be reduced by increasing the distance between the emitter and the receiver, by using buildings as noise screens and by relocating buildings exits or entrances.	For existing plants the relocation of equipment and buildings, exits or entrances may not be applicable due to lack of space and/or excessive cost.
	(b) Operational measures	These include: (i) improved inspection and maintenance of equipment. (ii) closing of doors and windows of enclosed areas, if possible. (iii) equipment operation by experienced staff. (iv) avoidance of noisy activities at night, if possible. (v) provisions for noise control, e.g., during maintenance activities.	Generally applicable
	(c) Low-noise equipment	This includes low-noise compressors, pumps, and fans.	
	(d) Noise control equipment	This includes: (i) noise reducers. (ii) insulation of equipment.	May not be applicable to existing plants due to lack of space.

			(iii) enclosure of noisy equipment. (iv) soundproofing of buildings.	
	(e)	Noise abatement	Inserting obstacles between emitters and receivers (e.g., protection walls, embankments and buildings).	Applicable only to existing plants, as the design of new plants should make this technique unnecessary. For existing plants, the insertion of obstacles may not be applicable due to lack of space.

There have been no recorded or substantiated noise complaints in relation to the facility and there is no reason that they would be expected in relation to the current on site activities, as such the BAT in Table 13 is not applicable.

There are no external fridges or generators in regular operation. The site does have a stand-by generator for emergency purposes which is located within a noise rated containerised enclosure. This follows BAT indicated as in Table 14 (d) above.

5.18 Implications of the Application for – Monitoring

As set out in the Graham’s, The Family Dairy Health, Safety & Environmental Policy submitted alongside the application, the business operates within a comprehensive policy framework. This is implemented by the senior management team and, within the context of environmental monitoring, regular process and site inspections are carried out.

Risk areas identified relate to effluent disposal during high periods of production. As mentioned in section 5.3 above there are no direct emissions to the water environment from the production area. All process discharges are treated via an onsite DAF plant before discharge to the foul sewer under a Trade Effluent consent with the discharge constituents regularly monitored by Scottish Water. Ongoing investment in onsite treatment and drainage network review aims to isolate the potential for any discharge-based incidents.

Process related chemicals and workshop maintenance operate within BAT, including the secure containment of chemicals, fuel, and silt traps. All drainage is directed to the previously mentioned DAF plant to contain and treat prior to discharge.

5.19 Implications of the Application for – Closure

A section of the permit titled ‘2.9 Decommissioning’ is included within the permit to require the operator to prepare and maintain a plan (“the De-commissioning Plan”) for the decommissioning of the Permitted Installation. The De-commissioning Plan shall set out the steps to be taken by the operator after final cessation of the Permitted Activities.

Section 2.9 also requires the operator to notify SEPA in writing of its intention to cease the Permitted Activities, or any part thereof, for any period exceeding 12 months, no later than 2 months prior to the proposed date of cessation. It also requires that Operator shall review, record, and where necessary, update the De-commissioning Plan at least every 4 years and Where the Operator plans to make substantial change in the extent or nature of the Permitted Installation.

5.20 Implications of the Application for - Site Condition Report (and where relevant the baseline report)

Graham's, The Family Dairy has operated from the Airthrey Kerse site since 1939

There was no formal Site Condition Report submitted in support of the application, a site condition report is required to:

- demonstrate the condition of the site,
- describe substances that will be used on site, and
- mitigation to reduce the potential risk to soil and groundwater.

Characterisation of substances as hazardous or not was not supplied with reference to the legislation (i.e. Regulation (EC) No 1272/2008). In addition, the chemical composition of some materials was not defined. As such decisions on the requirements of soil and groundwater monitoring could not be made at this time.

A condition has been included in the draft permit to submit a revised Site Condition report to address the deficiencies.

The requirements for soil and groundwater monitoring will be covered by the condition which requires the Operator to submit an agreed monitoring plan to SEPA prior to undertaking the sampling. The first sampling exercise will be within 12 months of issue of the permit.

5.21 Implications of the Application for - Consideration of BAT

A comparison of the information supplied in support of the application for the Airthrey Kerse dairy is attached as an appendix to this document.

From the documentation submitted, SEPA's are content to accept that what has been already agreed with SEPA, and subsequently provided in the application, demonstrates benchmarking against BAT.

Future consideration should be given to the reduction/replacement of the refrigerant gasses currently used on site. Legislation introduced a ban, which came into force on 1 January 2020, that prohibits refrigerants with a global warming potential (GWP) greater than 2500 being used to service or refill refrigeration or freezer systems.

6 OTHER LEGISLATION CONSIDERED
<i>Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994.</i>
<p>Is there any possibility that the proposal will have any impact on site designated under the above legislation? No</p> <p>Justification: SEPA's Nature Conservation Procedure, NCP-P-01, has been developed to satisfy the statutory requirements of SEPA's regulatory responsibilities under section 15 of the Nature Conservation (Scotland) Act 2004 Act and Regulations 47-49, 50-52 and 83-85 of the Conservation (Natural Habitats, &c.) Regulations 1994, as amended.</p> <p>The first step is to undertake screening of the application based on standard screening distances given in this document. The results of this screening drive the decision about which further steps will be required.</p> <p>In this instance the screening distance is defined in Annex A, Section 3 as follows: (s6.8) The treatment of animal and vegetable matter and food industries – Parts A & B 2 km (unless captured by combustion).</p> <p>Following the screening procedure identified that there were two sites within the 2km screening distance:</p>

Abbey Craig SSSI which is approximately 1500m Southeast of the site at its closest point
River Teith SAC which is approximately 1500m Southwest of the site at its closest point.

Nature Scot were advised of this in an initial consultation request on 22 December 2020 and again in a further request of 09 November 2021 where updated information was provided as described in Section 2 of this document. Nature Scot responded on 10 November 2021 as follows: *'Many thanks for the update. We have no further comments to make.'*

Screening distance(s) used – 2 km

Officer: MM

7 ENVIRONMENTAL IMPACT ASSESSMENT AND COMAH

How has any relevant information obtained, or conclusion arrived at pursuant to Articles 5, 6 and 7 of Council Directive 85/337/EEC on the assessment of the effects certain public and private projects on the environment been taken into account?

The initial Directive of 85/337/EEC 1985 and its three amendments have been codified by DIRECTIVE 2011/92/EU of 13 December 2011. Directive 2011/92/EU has been amended in 2014 by DIRECTIVE 2014/52/EU

With reference to the original directive 85/337/EEC Article 5 states: 1. In the case of projects which, pursuant to Article 4, must be subjected to an environmental impact assessment in accordance with Articles 5 to 10, Member States shall adopt the necessary measures to ensure that the developer supplies in an appropriate form the information specified in Annex III

Cross referencing with Article 4 provides the following information: Article 4, 1. Subject to Article 2 (3), projects of the classes listed in Annex I shall be made subject to an assessment in accordance with Articles 5 to 10.

ANNEX I contains the list of PROJECTS SUBJECT TO ARTICLE 4 (1). The manufacture of dairy products is not included in Annex 1.

Article 4, 2 provides the following info: Projects of the classes listed in Annex II shall be made subject to an assessment, in accordance with Articles 5 to 10, where Member States consider that their characteristics so require. To this end Member States may inter alia specify certain types of projects as being subject to an assessment or may establish the criteria and/or thresholds necessary to determine which of the projects of the classes listed in Annex II are to be subject to an assessment in accordance with Articles 5 to 10.

The activity is listed within Annex II, 7. Food industry (c) Manufacture of dairy products.

As the facility has operated at this location for in excess of 50 years, there is no direct discharge from the facility to the water environment, the combustion plant used on site is below the threshold of the Medium Combustion Plant directive, the energy use and water consumption figures are all within BAT guidelines the information supplied in pursuance of the PPC permit has been deemed as sufficient to meet these requirements and no further Environmental Impact Assessment has been carried out.

How has any information contained within a safety report within the meaning of Regulation 7 (safety report) of the Control of Major Accident Hazards Regulations 1999 been taken into account?

The site is below the thresholds required for Regulation 7 to apply.

Officer: MM

8 DETAILS OF PERMIT

Do you propose placing any non-standard conditions in the Permit? No.

Do you propose making changes to existing text, tables, or diagrams within the permit?
Not applicable, No changes as this is the first determination of the permit.

Outline of change: Not applicable, No changes as this is the first determination of the permit.

Details including justification: Not applicable, No changes as this is the first determination of the permit.

9 EMISSION LIMIT VALUES OR EQUIVALENT TECHNICAL PARAMETERS/ MEASURES

Are you are dealing with either a permit application, or a permit variation which would involve a review of existing ELVs or equivalent technical parameters?

ELV's have been included within the permit in relation to the surface water discharge to the Forglen burn

Justification: The ELV's are based on similar discharges within the dairy sector and are as follows:

BOD (mg/l)	3
Suspended Solids (mg/l)	25
pH	6 – 9

The limits imposed are equivalent to a 'High' water quality standard for pH and BOD as defined within SEPA's guidance document WAT-SG-53.

The limits for BOD and Suspended Solids are also within the criteria described for Indicative parameter levels in the environment for a river water which is defined as:

Biochemical oxygen demand: 1- 5 mg/l
Suspended Solids: 2- 30 mg/l (rainfall dependent)
within SEPA's guidance document WAT-SG-05.

Officer: MM

10 PEER REVIEW

Has the determination and draft permit been Peer Reviewed? Yes.

Name of Peer Reviewer and comments made:

JB (Specialist II • CB EP A Southwest Scotland) – Supplied template for Permit and peer reviewed documents to ensure consistency across dairy sector:

JB- inserted permit condition 2.4.6 for incident reporting and updated reporting table as required. Decision Document 2 was reviewed to ensure latest BATc's were referenced.

CW (SEPO • CB EP C Falkirk, Alloa, Stirling and Perth) – Peer review of Permit as local team representative. No comments made.

11 FINAL DETERMINATION**Issue of a Permit - Based on the information available at the time.**

Issue a Permit – Based on the information available at the time of the determination SEPA is satisfied that

- The applicant will be the person who will have control over the operation of the installation,
- The applicant will ensure that the installation is operated so as to comply with the conditions of the Permit,
- That the operator is in a position to use all appropriate preventative measures against pollution, in particular through the application of best available techniques.
- That no significant pollution should be caused.

Officer: MM

12 REFERENCES AND GUIDANCE

The Pollution Prevention and Control (Scotland) Regulations 2012

Best Available Techniques (BAT) Reference Document for the Food, Drink and Milk Industries Industrial Emissions Directive 2010/75/EU

DIRECTIVE 2011/92/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment

COUNCIL DIRECTIVE of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (85/337/EEC)

The Conservation (Natural Habitats, &c.) Regulations 1994

SEPA Nature Conservation Procedure for Environmental Licensing NCP-P-01

SEPA Nature Conservation Procedure for Environmental Licensing: Recording Template NCP-T-01

SEPA Guidance note, Refrigeration and freezer equipment: Changes to refrigerant gases that can be Used May 2019

Supporting Guidance (WAT-SG-05) Point Source Discharge Constituents

Supporting Guidance (WAT-SG-53) Environmental Quality Standards and Standards for Discharges to Surface Waters