

Attachment 7

*For inspection purposes only.
Consent of copyright owner required for any other use.*

BREF document for the Intensive Rearing of Pig and Poultry (July 2003)

<i>BAT reference Number</i>	<i>BAT Statement</i>	<i>Applicability to installation</i>	<i>Proposed/ in place</i>
5.2.1.1	Nutritional techniques applied to nitrogen excretion BAT is to apply feeding measures	Applicable	Low protein diets are being utilised on site, which can achieve a reduction of 30%, of emissions from the site.
5.2.1.2	Nutritional techniques applied to phosphorus excretion BAT is to apply feeding measures.	Applicable	Low protein diets are being utilised on site, which can achieve a reduction of 30% of emissions from the site.
5.2.2.1	Housing systems for mating/gestating sows. BAT is: <ul style="list-style-type: none"> • A fully slatted floor or partly slatted floor with vacuum system for frequent slurry removal (Sections 4.6.1.4 and 4.6.1.6) or • A partly slatted floor and a reduced manure pit (Sections 4.6.1.4) 	Applicable	The pig manure will be abstracted from dedicated abstraction points from the tanks under the pig houses by vacuum tank. These houses will be partly slatted.
5.2.2.2	Housing systems for growers/finishers BAT is: <ul style="list-style-type: none"> • A fully slatted floor with a vacuum system for frequent removal (Section 4.6.1.1) or • A partly slatted floor with a reduced slanted walls and a vacuum system 	Applicable	The pig manure will be abstracted from dedicated abstraction points from the tanks under the pig houses by vacuum tank. These houses will be fully slatted.

	<p>(Section 4.6.4.3) or</p> <ul style="list-style-type: none"> • A partly slatted floor with a central, convex solid floor or an inclined solid floor at the front of the pen, a manure gutter with slanted sidewalls and a sloped manure pit (Section 4.6.4.2). 		
5.2.2.3	<p>Housing systems for farrowing sows (including piglets)</p> <p>BAT is a crate with a fully slatted iron or plastic floor and with a:</p> <ul style="list-style-type: none"> • Combination of a water and manure channel (Section 4.6.2.2) or • Flushing system with manure gutters (Section 4.6.2.3) or • Manure pan underneath (Section 4.6.2.4) 	Applicable	<p>The pig manure will be abstracted from dedicated abstraction points from the tanks under the pig houses by vacuum tank.</p> <p>These houses will be partly slatted.</p>
5.2.2.4	<p>Housing systems for weaners</p> <p>BAT is a pen:</p> <ul style="list-style-type: none"> • On flatdeck with a fully slatted or partly slatted floor with a vacuum system for frequent slurry removal (Sections 4.6.1.1 and 4.6.1.6) or • A pen or flatdeck with a fully slatted floor beneath which there is a concrete sloped floor to separate faeces and urine (Section 4.6.3.1) or • With a partly slatted floor 	Applicable	<p>These houses will be fully slatted heated rearing rooms.</p> <p>The pig manure will be abstracted from dedicated points from the tanks under the pig houses by vacuum tank.</p>

	<p>(two climate system) (Section 4.6.3.4) or</p> <ul style="list-style-type: none"> • With a partly slatted iron or plastic floor and a sloped or convex solid floor (Section 4.6.3.5) <p>Or</p> <ul style="list-style-type: none"> • With a partly slatted floor with a metal or plastic slats and a shallow manure pit and channel for spoiled drinking water (Section 4.6.3.6) or • With a partly slatted floor with triangular iron slats and a manure channel with sloped side walls (Section 4.6.3.9). 		
5.2.3	<p>Water</p> <p>BAT is to reduce water use by doing all of the following:</p> <ul style="list-style-type: none"> • Cleaning animal housing and equipment with high pressure cleaners after each production cycle. Typically wash down water enters the slurry system and therefore it is important to find a balance between cleanliness and using as little water as possible. • Carry out a regular calibration of the drinking water installation to avoid spill • Keeping record of water 	Applicable	<p>High pressure wash down systems (3,000 psi) are used to wash down the houses.</p> <p>Each section of the farm is power washed and disinfected as the pigs are moved in an “all in/all out” system through their growth cycle.</p> <p>The pressure of the power washer is 3,000 psi. Water throughput is 15 litres/minute. The power washer is in use for 6 hours per week. A weekly total of 3m³ of water is required.</p> <p>All wash water is directed to the underground storage.</p> <p>Water for the farm is already supplied by means of a private well on site via a header tank</p>

	<p>use through metering of consumption and</p> <ul style="list-style-type: none"> • Detecting and repairing leakages 		<p>system.</p> <p>There are two water storage tanks on site with a combined storage capacity of 81m³, this will allow for 3 days supply in the event of shortages.</p>
5.2.4	<p>Energy</p> <ul style="list-style-type: none"> • Applying natural ventilation where possible; this needs proper design of the building and of the pens (i.e. microclimate in the pens) and spatial planning with respect to the prevailing wind directions to enhance the airflow; this applies only to new housing • For mechanically ventilated houses; optimising the design of the ventilation system in each house to provide good temperature control and to achieve minimum ventilation rates in winter • For mechanically ventilated houses: avoiding resistance in ventilation systems through frequent inspection and cleaning of ducts and fans and • Applying low energy lighting. 	Applying	<p>The buildings and their layout will be state of the art for the industry. A thorough review was undertaken of best available techniques to minimise emissions from the proposed development and to maximise welfare conditions for animals and staff alike on site. The houses are compliant with BAT.</p> <p>The facility uses a high-tech computerised ventilation system, in animal houses with a backup system. This will receive regular maintenance of ducts and fans.</p> <p>All artificial lighting to pig housing, offices and outside yards will be low energy lighting.</p>

<p>5.2.5</p>	<p>Manure storage</p> <p><u>Stack/heap</u></p> <p>BAT is to:</p> <ul style="list-style-type: none"> • Apply a concrete floor, with a collection system and a tank for run-off liquid and • Locate any new to build manure storage areas where they are least likely to cause annoyance to sensitive receptors for odour, taking into account the distance to receptors and the prevailing wind direction. <p><u>Storage tanks</u></p> <p>BAT on the storage of slurry in a concrete or steel tank comprises all of the following:</p> <ul style="list-style-type: none"> • A stable tank to withstand likely mechanical thermal and chemical influences • The base and walls of the tank are impermeable and protected against corrosion • The store is emptied regularly for inspection and maintenance, preferably every year • Double valves are used on any valved outlet from the store • The slurry is stirred only just before emptying the 	<p>Applicable</p>	<p><u>Storage tanks</u></p> <p>All pig manure on site will be stored in underground concrete tanks, built to Department of Agriculture specifications S126 of November 2002 – Minimum Specification for Geo-membrane Lined Slurry/Effluent Stores and Ancillary Works.</p> <p>Tank Integrity Testing will be carried out which will involve a visual inspection of all tanks on site for any cracks or leaks. This will be carried out once the tanks have been completely emptied for health and safety reasons.</p> <p>Handling of all manure onsite will be carried out in accordance with Teagasc’s information booklet on Safe Slurry Handling. Slurry will only be agitated in tanks prior to its landspreading.</p> <p>All slurry tanks are located under the accommodation houses.</p>
--------------	---	-------------------	--

For inspection purposes only. Copyright owner required for any other use.

	<p>tank for e.g. application on land</p> <p>It is BAT to cover slurry tanks using one of the following options:</p> <ul style="list-style-type: none"> • A rigid lid, roof or tent structure or • A floating cover, such as chopped straw, natural crust, canvas, foil, peat, light expanded clay aggregate (LECA) or expanded polystyrene (EPS) <p><u>Storage lagoons</u></p> <p>It is BAT to cover lagoons where slurry is stored using one of the following options:</p> <ul style="list-style-type: none"> • A plastic cover or • A floating cover such as chopped straw, LECA or natural crust. 		
5.2.6	On-farm manure processing	Applicable	The current practice of recovery pig manure to land will continue at the unit in accordance with EU Good Agricultural Practice for the Protection of Waters, S.I. 31 of 2014.
5.2.7	Techniques for landspreading pig manure	Applicable	The application of manure to land is regulated under S.I. 31 of 2014 and distribution of manure from the site will comply with those Regulations. The Applicant is entitled to give manure to any local farmer who wants it and is obliged to record all despatches from the holding, farmers

		<p>acquiring manure are obliged to record all consignments acquired and to use it in compliance with the regulations.</p> <p>The pig slurry currently being generated on the pig farm is currently distributed to local farmers in response to their demand and for their use on their farmland. The use of animal manure to fertilise farmland is subject to statutory control under S.I. 31 of 2014 to which the applicant will adhere to.</p> <p>The application of manure to land in this area is allowed between the 12th January and the 15th October (exclusive), in accordance with a fertiliser plan.</p> <p>This development will minimise the potential impacts at this site with the following mitigation measures during the land spreading of manure:</p> <ul style="list-style-type: none"> - Subject to sub article (5), 200m of the abstraction point of any surface watercourse, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 100m³ or more of water per day or serving 500 or more persons - Subject to sub article (5), 100m of the abstraction point (other than an abstraction point specified at paragraph (a)) of any
--	--	--

For inspection purposes only.
Consent of copyright owner required for any other use.

			<p>surface watercourse, borehole, spring or well used for the abstraction of water for human consumption in a water scheme supplying 10m³ or more of water per day or serving 50 or more persons,</p> <ul style="list-style-type: none"> - Subject to sub article (5), 25m of any borehole, spring or well used for the abstraction of water for human consumption other than a borehole, spring or well specified at paragraph (a) or (b), - 20m of a lake shoreline, - 15m of exposed cavernous or karstified limestone features (such as swallow-holes and collapse features), - Subject to sub articles (8) and (9), 5m of a surface watercourse (other than a lake or a surface watercourse specified at paragraph (a) or (b),
--	--	--	--

For inspection purposes only.
Consent of copyright owner required for any other use.

BAT reference Number	BAT Statement	Applicability to installation	Proposed/ in place
5.1.1.1.	<p><u>Tank design</u></p> <p>BAT for a proper design is to take into account at least the following:</p> <ul style="list-style-type: none"> • the physico-chemical properties of the substance being stored • how the storage is operated, what level of instrumentation is needed, how many operators are required, and what their workload will be • how the operators are informed of deviations from normal process conditions (alarms) • how the storage is protected against deviations from normal process conditions (safety instructions, interlock systems, pressure relief devices, leak detection and containment, etc.) • what equipment has to be installed, largely taking account of past experiences of the product (construction materials, valve quality, etc.) • which maintenance and inspection plan needs to be implemented and how to ease the maintenance and inspection work (access, layout, etc.) • how to deal with emergency situations (distances to other tanks, facilities and to the boundary, fire protection, access for emergency services such as 	Applicable	<p>Manure produced is stored in underground tanks located under the sheds built to Department Of Agriculture, Food and the Marine Specifications S126 Minimum Specification for Geomembrane-lined Slurry/Effluent Stores, and Ancillary Works - Nov 02.</p> <p>Manure storage capacity Annual, neat pig slurry production and extraneous water (5% and 8%) is 15,443m³. Underground storage amounts to 15,117 m³ (net of free-board reduction of 200mm for gasses accumulation under slat) equivalent to 50 weeks manure storage capacity, which is well in excess of the 26 weeks requirement.</p> <p>Leak Detection System New structures will have an independent leak detection system, with individual inspection chambers, which will be visually inspected weekly and sampled quarterly for COD at an Independent Laboratory.</p> <p>Tank Integrity Testing</p> <p>Tank Integrity Testing will be carried out which will involve a visual inspection of all tanks on site for any cracks or leaks. This will be carried out once the tanks have been completely emptied for health and safety reasons. Handling of all manure onsite will be carried out in accordance with Teagasc's information booklet on</p>

	<p>the fire brigade, etc.).</p> <p><u>Inspection and maintenance</u></p> <p>BAT is to apply a tool to determine proactive maintenance plans and to develop risk-based inspection plans such as the risk and reliability based maintenance approach; see Section 4.1.2.2.1.</p> <p><u>Location and layout</u></p> <p>BAT is to locate a tank operating at, or close to, atmospheric pressure aboveground. However, for storing flammable liquids on a site with restricted space, underground tanks can also be considered. For liquefied gases, underground, mounded storage or spheres can be considered, depending on the storage volume.</p> <p><u>Tank colour</u></p> <p>BAT is to apply either a tank colour with a reflectivity of thermal or light radiation of at least 70 %, or a solar shield on aboveground tanks which contain volatile substances, see Section 4.1.3.6 and 4.1.3.7 respectively.____</p>		<p>Safe Slurry Handling. Slurry will only be agitated in tanks prior to its landspreading.</p> <p>Emergency Response Plan An Emergency Response Plan and Procedures has been put in place to deal with which includes:</p> <ul style="list-style-type: none"> • Identification of potential hazards that may be encountered during the operational phase. • Emergency telephone numbers including, local doctor, garda station and fire brigade along with numbers for other various response services including contact details for the Environmental Directorate. • Emergency response procedures for accidental spills, fire or injury to personnel. • Identification of the person in charge of the site and implementation of the emergency plan. <p>The emergency plan will also detail information in relation to the incident which would have to be recorded in order to prevent a similar incident occurring again.</p>
<p>5.1.1.3.</p>	<p><u>Safety and risk management</u></p> <p>BAT in preventing incidents and accidents is to apply a safety management system as described in Section 4.1.6.1.</p> <p><u>Operational procedures and</u></p>	<p>Applicable</p>	<p>Emergency Response Plan An Emergency Response Plan and Procedures has been put in place to deal with which includes:</p> <ul style="list-style-type: none"> • Identification of potential hazards that may be encountered during the

For inspection purposes only. Copyright owner required for any other use.

	<p><u>training</u></p> <p>BAT is to implement and follow adequate organisational measures and to enable training and instruction of employees for safe and responsible operation of the installation as described in Section 4.1.6.1.1.</p> <p><u>Leakage due to corrosion and/or erosion</u></p> <p>BAT is to prevent corrosion by:</p> <ul style="list-style-type: none"> • selecting construction material that is resistant to the product stored • applying proper construction methods • preventing rainwater or groundwater entering the tank and if necessary, removing water that has accumulated in the tank • applying rainwater management to bund drainage • applying preventive maintenance, and • where applicable, adding corrosion inhibitors, or applying cathodic protection on the inside of the tank. <p>Additionally for an underground tank, BAT is to apply to the outside of the tank:</p> <ul style="list-style-type: none"> • a corrosion-resistant coating • plating, and/or 		<p>operational stage.</p> <ul style="list-style-type: none"> • Emergency telephone numbers including, local doctor, garda station and fire brigade along with numbers for other various response services including contact details for the Environmental Directorate. • Emergency response procedures for accidental spills, fire or injury to personnel. • Identification of the person in charge of the site and implementation of the emergency plan. • The emergency plan will include for training of employees with regards to potential hazards. <p>The emergency plan will also detail information in relation to the incident which would have to be recorded in order to prevent a similar incident occurring again.</p> <p>Facilities</p> <p>The buildings and their layout will be state of the art for the industry. A thorough review was undertaken of best available techniques to minimise emissions from the proposed development, and to maximise welfare conditions for animals and staff alike on site. The proposed animal houses are compliant with BAT.</p> <p>All buildings and tanks will be built to Department Of Agriculture, Food and the Marine Farm Building and Structures Specifications and BAT.</p> <p>All clean water is separated from soiled water. Roof water is collected</p>
--	--	--	--

For internal purposes only. Consent of copyright owner required for any other use.

- a cathodic protection system. .

Instrumentation and automation to detect leakage

BAT is to apply leak detection on storage tanks containing liquids that can potentially cause soil pollution.

Risk-based approach to emissions to soil below tanks

BAT is to achieve a ‘negligible risk level’ of soil pollution from bottom and bottom-wall connections of aboveground storage tanks

Soil protection around tanks – containment

BAT for aboveground tanks containing flammable liquids or liquids that pose a risk for significant soil pollution or a significant pollution of adjacent watercourses is to provide secondary containment

For existing tanks within a bund, BAT is to apply a risk-based approach, considering the significance of risk from product spillage to the soil, to determine if and which barrier is best applicable.

For chlorinated hydrocarbon solvents (CHC) in single walled tanks, BAT is to apply CHC-proof laminates to concrete barriers (and containers), based

via galvanised gutterd and downpipes and piped underground to a nearby watercourse, the River Aherlow which is part of the Lower River Suir SAC via a storm water monitoring point SW1. Areas of animal movement are the main sources of the soiled water. This soiled water is discharged to the underground storage tanks.

All tanks will be banded to control accidental spills, this includes feed and fuel storage.

Instrumentation and automation to detect leakage

New structures will have an independent leak detection system, with individual inspection chambers, which will be visually inspected weekly and sampled quarterly for COD at an Independent Laboratory.

Tank Integrity Testing will be carried out which will involve a visual inspection of all tanks on site for any cracks or leaks. This will be carried out once the tanks have been completely emptied for health and safety reasons.

Handling of all manure onsite will be carried out in accordance with Teagasc’s information booklet on Safe Slurry Handling. Slurry will only be agitated in tanks prior to its landspreading.

For inspection purposes only. Consent of copyright owner required for any other use.

	<p>on phenolic or furan resins.</p> <p>BAT for underground and mounded tanks containing products that can potentially cause soil pollution is to:</p> <ul style="list-style-type: none"> • apply a double walled tank with leak detection, see Section 4.1.6.1.16, or • to apply a single walled tank with secondary containment and leak detection, see Section 4.1.6.1.17. 		
<p>5.2.1.</p>	<p><u>Inspection and maintenance</u></p> <p>BAT is to apply a tool to determine proactive maintenance plans and to develop risk-based inspection plans such as, the risk and reliability based maintenance approach;</p> <p><u>Leak detection and repair programme</u></p> <p>BAT is to apply a leak detection and repair programme.</p> <p><u>Emissions minimisation principle in tank storage</u></p> <p>BAT is to abate emissions from tank storage, transfer and handling that have a significant negative environmental effect,</p> <p><u>Safety and risk management</u></p> <p>BAT in preventing incidents and accidents is to apply a safety management system as described in Section 4.1.6.1.</p> <p><u>Operational procedures and</u></p>	<p>Applicable</p>	<p>Emergency Response Plan</p> <p>An Emergency Response Plan and Procedures has been put in place to deal with which includes:</p> <ul style="list-style-type: none"> • Identification of potential hazards that may be encountered during the operational stage. • Emergency telephone numbers including, local doctor, garda station and fire brigade along with numbers for other various response services including contact details for the Environmental Directorate. • Emergency response procedures for accidental spills, fire or injury to personnel. • Identification of the person in charge of the site and implementation of the emergency plan. • The emergency plan will include for training of employees with regards to potential hazards. <p>The emergency plan will also detail information in relation to the incident which would have to be</p>

	<p><u>training</u></p> <p>BAT is to implement and follow adequate organisational measures and to enable the training and instruction of employees for safe and responsible operation of the installation as described in Section 4.1.6.1.1.</p>		<p>recorded in order to prevent a similar incident occurring again.</p> <p><u>Leak detection and repair programme</u></p> <p>Continuous visual monitoring and inspections of the leak detection chambers and tank integrity will be carried out weekly. All inspections will be recorded as well as repairs carried out.</p>
5.3.2.	<p>BAT for sheds is to apply proper designed ventilation and filtering systems and to keep the doors closed. See Section 4.3.4.2.</p>	Applicable	<p>All buildings and tanks will be built to Department Of Agriculture, Food and the Marine Farm Building and Structures Specifications and BAT.</p>
5.3.4.	<p>BAT in preventing incidents and accidents is applying a safety management system as described in Section 4.1.7.1.</p>		<p>An Emergency Response Plan and Procedures has been put in place to deal with which includes:</p> <ul style="list-style-type: none"> • Identification of potential hazards that may be encountered during the operational stage. • Emergency telephone numbers including, local doctor, garda station and fire brigade along with numbers for other various response services including contact details for the Environmental Directorate. • Emergency response procedures for accidental spills, fire or injury to personnel. • Identification of the person in charge of the site and implementation of the emergency plan. • The emergency plan will include for training of employees with regards to potential hazards. <p>The emergency plan will also detail information in relation to the</p>

For inspection purposes only.
Consent of copyright owner required for any other use.

			incident which would have to be recorded in order to prevent a similar incident occurring again.
5.4.1.	<p>BAT is to prevent dust dispersion due to loading and unloading activities in the open air, by scheduling the transfer as much as possible when the wind speed is low. However, and taking into account the local situation, this type of measure cannot be generalised to the whole EU and to any situation irrespective of the possible high costs. See Section 4.4.3.1.</p> <p>While driving, vehicles might swirl up dust from solids spread on the ground. BAT then is to adjust the speed of vehicles on-site to avoid or minimise dust being swirled up; see Section 4.4.3.5.2.</p> <p>BAT is to clean roads that are fitted with hard surfaces according to Section 4.4.6.12.</p>	Applicable	<p>Construction and operational procedures have the potential to generate dust emissions. The potential for impact from dusts depend on the distance to potentially sensitive locations and whether the wind can carry the dust to these locations. Most of the dust would be deposited close to the potential source and any impacts from dust deposition would typically be within several hundred metres or so of the construction area.</p> <p><i>Mitigation Measures</i></p> <ul style="list-style-type: none"> • The site access road onto the public road will be regularly cleaned and maintained as appropriate. • The site will be regularly dampened during dry and/or windy conditions if required. • Vehicles delivering materials to site will be enclosed or covered with tarpaulins, where necessary. • Material handling systems and stockpiling of materials on site will be arranged to minimise exposure to wind. • During movement of soil/fill material both on and off-site, trucks will be covered with tarpaulins, where required. • Vehicles are to be kept in good working order and serviced regularly to minimise emissions. • Vehicles travelling on access roads will not exceed the designated speeding limit i.e.

			20km.
--	--	--	-------

*For inspection purposes only.
Consent of copyright owner required for any other use.*

BAT for Energy Efficiency

<i>BAT reference Number</i>	<i>BAT Statement</i>	<i>Applicability to installation</i>	<i>Proposed/ in place</i>
1	BAT is to implement and adhere to an energy efficiency management system (ENEMS) that incorporates, as appropriate to the local circumstances, all of the following features (see Section 2.1. The letters (a), (b), etc. below, correspond those in Section 2.1):	Applicable	<p>The applicant will implement and maintain a comprehensive management programme on-site to provide a maximum operating status. This plan will involve maintaining all registers and visual inspection of all storm water outlets.</p> <p>An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.</p>
2	BAT is to continuously minimise the environmental impact of an installation by planning actions and investments on an integrated basis and for the short, medium and long term, considering the cost-benefits and cross-media effects.	Applicable	<p>An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.</p> <p>Monitoring of Energy efficiency at the unit will be carried out and a review of the energy audit when required.</p>
3	BAT is to identify the aspects of an installation that influence energy efficiency by carrying out an audit. It is important that an audit is coherent with a systems approach (see BAT 7).	Applicable	An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.
4	When carrying out an audit, BAT is to ensure that the audit identifies the following aspects (see Section 2.11):	Applicable	An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.
5	BAT is to use appropriate tools or methodologies to assist with	Applicable	An energy audit will be carried out as required to determine

	identifying and quantifying energy optimisation,		possible cost savings and energy saving measures following the granting and issuing of the licence.
7	BAT is to optimise energy efficiency by taking a systems approach to energy management in the installation.	Applicable	The new buildings and their layout will be state of the art for the industry. A thorough review was undertaken of best available techniques to minimise emissions from the proposed development as well as to maximise energy efficiency and also maximise welfare conditions for animals and staff alike on site.
8	<p>BAT is to establish energy efficiency indicators by carrying out all of the following:</p> <p>a. identifying suitable energy efficiency indicators for the installation, and where necessary, individual processes, systems and/or units, and measure their change over time or after the implementation of energy efficiency measures (see Sections 1.3 and 1.3.4)</p> <p>b. identifying and recording appropriate boundaries associated with the indicators (see Sections 1.3.5 and 1.5.1)</p> <p>c. identifying and recording factors that can cause variation in the energy.</p>	Applicable	<p>An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.</p> <p>Monitoring of Energy efficiency at the unit will be carried out and reviews of the energy audit.</p>
9	BAT is to carry out systematic and regular comparisons with sector, national or regional benchmarks, where validated data are available.	Applicable	Monitoring of Energy efficiency at the unit will be carried out and reviews of the energy audit. This will take heed of sector, national and regional benchmarks where applicable.
10	BAT is to optimise energy efficiency when planning a new installation, unit or system or a	Applicable	The new buildings and their layout will be state of the art for the industry. A thorough review was undertaken of best available

	significant upgrade (see Section 2.3) by considering all of the following:		techniques to minimise emissions from the proposed development as well as to maximise energy efficiency and also maximise welfare conditions for animals and staff alike on site.
11	BAT is to seek to optimise the use of energy between more than one process or system (see Section 2.4), within the installation or with a third party.	Not Applicable	Not Applicable
12	<p>BAT is to maintain the impetus of the energy efficiency programme by using a variety of techniques, such as:</p> <ul style="list-style-type: none"> a. implementing a specific energy efficiency management system (see Section 2.1 and BAT 1) b. accounting for energy usage based on real (metered) values, which places both the obligation and credit for energy efficiency on the user/bill payer (see Sections 2.5, 2.10.3 and 2.15.2) c. the creation of financial profit centres for energy efficiency (see Section 2.5) d. benchmarking (see Section 2.16 and BAT 9) e. a fresh look at existing management systems, such as using operational excellence (see Section 2.5) f. using change management techniques (also a feature of operational excellence, see Section 2.5). 	Applicable	<p>An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.</p> <p>Monitoring of Energy efficiency at the unit will be carried out and reviews of the energy audit.</p>
13	BAT is to maintain expertise in	Applicable	All staff are instructed on the importance of energy control and

	<p>energy efficiency and energy-using systems by using techniques such as:</p> <p>a. recruitment of skilled staff and/or training of staff. Training can be delivered by in-house staff, by external experts, by formal courses or by self-study/development (see Section 2.6)</p> <p>b. taking staff off-line periodically to perform fixed term/specific investigations (in their original installation or in others, see Section 2.5)</p> <p>c. sharing in-house resources between sites (see Section 2.5)</p> <p>d. use of appropriately skilled consultants for fixed term investigations (e.g. see Section 2.11)</p> <p>e. outsourcing specialist systems and/or functions (e.g. see Annex 7.12)</p>		<p>this is borne out energy, as consumption is inside the Industry average.</p> <p>An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.</p> <p>Monitoring of Energy efficiency at the unit will be carried out and reviews of the energy audit.</p>
<p>14</p>	<p>BAT is to ensure that the effective control of processes is implemented by techniques such as:</p> <p>a. having systems in place to ensure that procedures are known, understood and complied with (see Sections 2.1(d)(vi) and 2.5)</p> <p>b. ensuring that the key performance parameters are</p>	<p>Applicable</p>	<p>All staff are instructed on the importance of energy control and this is borne out energy, as consumption is inside the boundary average.</p> <p>Monitoring of Energy efficiency at the unit will be carried out and reviews of the energy audit.</p>

For inspection purposes only. Consent of copyright owner required for any other use.

	<p>identified, optimised for energy efficiency and monitored (see Sections 2.8 and 2.10)</p> <p>c. documenting or recording these parameters (see Sections 2.1(d)(vi), 2.5, 2.10 and 2.15).</p>		
15	<p>BAT is to carry out maintenance at installations to optimise energy efficiency by applying all of the following:</p> <p>a. clearly allocating responsibility for the planning and execution of maintenance</p> <p>b. establishing a structured programme for maintenance based on technical descriptions of the equipment, norms, etc. as well as any equipment failures and consequences. Some maintenance activities may be best scheduled for plant shutdown periods</p> <p>c. supporting the maintenance programme by appropriate record keeping systems and diagnostic testing</p> <p>d. identifying from routine maintenance, breakdowns and/or abnormalities possible losses in energy efficiency, or where energy efficiency could be improved</p> <p>e. identifying leaks, broken equipment, worn bearings, etc. that affect or control energy usage, and rectifying them at the earliest opportunity.</p>	Applicable	<p>Michael Dalton will be the responsible person on site for maintaining energy efficiency.</p> <p>An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.</p>

Consent of copyright owner required for any other use. For inspection purposes only.

16	BAT is to establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of operations and activities that can have a significant impact on energy efficiency. Some suitable techniques are given in Section 2.10.	Applicable	An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence. Monitoring of Energy efficiency at the unit will be carried out and reviews of the energy audit.
20	BAT is to seek possibilities for cogeneration, inside and/or outside the installation (with a third party).	Not Applicable	Not Applicable
21	BAT is to increase the power factor according to the requirements of the local electricity distributor by using techniques such as those in Table 4.3, according to applicability (see Section 3.5.1).	Applicable	All motors installed will be energy efficient.
23	<p>BAT is to optimise the power supply efficiency by using techniques such as those in Table 4.4, according to applicability:</p> <ul style="list-style-type: none"> • Installing capacitors in the AC circuits to decrease the magnitude of reactive power All cases. Low cost and long lasting, but requires skilled application • Minimising the operation of idling or lightly loaded motors All cases • Avoiding the operation of 	Applicable	Electric Motors will be regularly monitored, cooling fans and cowlings maintained.

	<p>equipment above its rated voltage</p> <p>All cases</p> <ul style="list-style-type: none"> When replacing motors, using energy efficient motors (see Section 3.6.1) <p>At time of replacement</p>		
24	<p>BAT is to optimise electric motors in the following order (see Section 3.6):</p> <ol style="list-style-type: none"> optimise the entire system the motor(s) is part of (e.g. cooling system, see Section 1.5.1) then optimise the motor(s) in the system according to the newly-determined load requirements, by applying one or more of the techniques in Table 4.5, according to applicability 	Applicable	<p>Electric Motors will be regularly monitored to determine the starting and operational load, and techniques such as soft starting and the use of VLC converters will be installed if deemed appropriate.</p>
25	<p>BAT is to optimise compressed air systems (CAS) using the techniques such as those in Table 4.6, according to applicability:</p>	Applicable	<p>The new buildings and their layout will be state of the art for the industry. A thorough review was undertaken of best available techniques to minimise emissions from the proposed development as well as to maximise energy efficiency.</p> <p>An energy audit will be carried out as required to determine possible cost savings and energy saving measures following the granting and issuing of the licence.</p> <p>Monitoring of Energy efficiency at the unit will be carried out and reviews of the energy audit.</p>
26	<p>BAT is to optimise pumping systems by using the techniques in Table 4.7, according to</p>	Applicable	<p>The new buildings and their layout will be state of the art for the industry. A thorough review was undertaken of best available</p>

	applicability (see Section 3.8):		techniques to minimise emissions from the proposed development as well as to maximise energy efficiency.
27	<p>BAT is to optimise heating, ventilation and air conditioning systems by using techniques such as:</p> <ul style="list-style-type: none"> • for ventilation, space heating and cooling, techniques in Table 4.8 according to applicability • for heating, see Sections 3.2 and 3.3.1, and BAT 18 and 19 • for pumping, see Section 3.8 and BAT 26 • for cooling, chilling and heat exchangers, see the ICS BREF, as well as Section 3.3 and BAT 19 (in this document). 	Applicable	The new buildings and their layout will be state of the art for the industry. A thorough review was undertaken of best available techniques to minimise emissions from the proposed development as well as to maximise energy efficiency.
28	BAT is to optimise artificial lighting systems by using the techniques such as those in Table 4.9 according to applicability (see Section 3.10):	Applicable	All artificial lighting will be used in the pig accommodation houses, offices and outside yards and will be low energy lighting. Location of lighting will be strategically planned.
29	BAT is to optimise drying, separation and concentration processes by using techniques such as those in Table 4.10 according to applicability, and to seek opportunities to use mechanical separation in conjunction with thermal processes	Not Applicable	Not Applicable