Bat Requirement	Old Rush
BAT 1 – Implement and adhere to an Environmental Management System (all)	
BAT 1. In order to improve the overall environmental performance of farms, BAT is to implement and adhere to an environmental management system (EMS) that incorporates all of the following features: 1. commitment of the management, including senior management; 2. definition, by the management, of an environmental policy that includes the continuous improvement of the environmental performance of the installation; 3. planning and establishing the necessary procedures, objectives and targets, in conjunction with financial planning and investment; 4. implementation of procedures paying particular attention to: (a) structure and responsibility; (b) training, awareness and competence; (c) communication; (d) employee involvement; (e) documentation; (f) effective process control; (g) maintenance programmes; (h) emergency preparedness and response; (i) safeguarding compliance with environmental legislation. 5. checking performance and taking corrective action, paying particular attention to: (a) monitoring and measurement (see also the JRC Reference Report on Monitoring of emissions from IED installations — ROM); (b) corrective and preventive action; (c) maintenance of records; (d) independent (where practicable) internal or external auditing in order to determine whether or not the EMS conforms to planned arrangements and has been properly implemented and maintained; 6. review of the EMS and its continuing suitability, adequacy and effectiveness by senior management; 7. following the development of cleaner technologies; 8. consideration for the environmental impacts from the eventual decommissioning of the installation at the stage of designing a new plant, and throughout its operating life;	Applied - An Environmental Management System is in place. The farm has bespoke odour and noise management plans in place and are contained within the site EMS. These plans will be fully upgraded to incorporate site amendments once full details are known of site specifications.

9. application of sectoral benchmarking (e.g. EMAS Sectoral Reference Document) on a regular basis. Specifically for the intensive poultry or pig rearing sector, BAT is also to incorporate the following features in the EMS: 10. implementation of a noise management plan 11. implementation of an odour management plan.	
BAT 2 Good housekeeping - prevent or reduce the environmental impact and improve overall performance (all)	
Proper location of the plant/farm and spatial arrangements of the activities in order to: • reduce transport of animals and materials (including manure); • ensure adequate distances from sensitive receptors requiring protection; • take into account prevailing climatic conditions (e.g. wind and precipitation); • consider the potential future development capacity of the farm; • prevent the contamination of water	Applied - The unit is already existing so these factors shall not be affected adversely. The site is being extended to include a further three houses like those already permitted. Full control of clean and dirty water routes in place and indicated on site drainage plan.
Educate and train staff, in particular for: • relevant regulations, livestock farming, animal health and welfare, manure management, worker safety; • manure transport and land spreading; • planning of activities; • emergency planning and management; repair and maintenance of equipment.	Applied - All farm staff have environmental best practice management training delivered by the operator (Annyalla Chicks (UK) Broilers Limited). Emergency plans included in the site 'Incident Management Plan' which can be found in the site bespoke EMS.
Prepare an emergency plan for dealing with unexpected emissions and incidents such as pollution of water bodies. This can include: • a plan of the farm showing the drainage systems and water/effluent sources; • plans of action for responding to certain potential events (e.g. fires, leaking or collapsing of slurry stores, uncontrolled run-off from manure heaps, oil spillages); available equipment for dealing with a pollution incident (e.g. equipment for plugging land drains, damming ditches, scum boards for oil spillages).	Applied - As above reference 'Incident Management Plan'. Site plan, drainage plan, emergency procedures (incl. flood procedures) included in site contingency plans.

BAT Requirement	Old Rush
Regularly check, repair and maintain structures and equipment, such as: • slurry stores for any sign of damage, degradation, leakage; • slurry pumps, mixers, separators, irrigators; • water and feed supply systems; • ventilation system and temperature sensors; • silos and transport equipment (e.g. valves, tubes); • air cleaning systems (e.g. by regular inspections). This can include cleanliness of the farm and pest management.	Applied - Maintenance check sheets completed before, during and after each crop cycle. Facility for recording of non-routine events within farms filing system.
Store dead animals in such a way as to prevent or reduce emissions.	Applied - Fallen stock to be contained within enclosed, fully lockable containers emptied weekly or more frequently should the requirement be made.
BAT 3 Nutritional Management (one or a combination)	
Reduce the crude protein content by using a N-balanced diet based on the energy needs and digestible amino acids. consider the potential future development capacity of the farm;	Applied – the birds are given phased feed rations for their growth profile. N-balanced diets are used and considered in ammonia modelling completed as part of this variation application.
Multiphase feeding with a diet formulation adapted to the specific requirements of the production period.	Applied - Multiphase feeding is applied. Five diets are used throughout the crop. See doc ref: ABN rations.
Addition of controlled amounts of essential amino acids to a low crude protein diet.	Applied – approved feed specifications are used. These contain essential amino acids.
Use of authorised feed additives which reduce the total nitrogen excreted.	Applied - approved feed specifications are used. These contain authorised feed additives to reduce nitrogen excreted.
BAT 4 Nutritional management (one or a combination)	
Multiphase feeding with a diet formulation adapted to the specific requirements of the production period.	Applied - Multiphase feeding is applied.
Use of authorised feed additives which reduce the total phosphorus excreted (e.g. phytase).	Applied – approved feed specifications are used. These contain authorised feed additives which reduce the total phosphorus excreted.
Use of highly digestible inorganic phosphates for the partial replacement of conventional sources of phosphorus in the feed.	Applied – approved feed specifications are used. These contain highly digestible inorganic phosphates for the partial replacement of conventional sources of phosphorus in the feed.

BAT Requirement	Old Rush
BAT 5 Efficient use of water (combination)	
Keep a record of water use.	Applied - water usage is recorded and reported to EA as required.
Detect and repair water leakages.	Applied - leakages will be detected during regular maintenance checks and repaired promptly. All delivery pipes are polyurethane construction.
Use high-pressure cleaners for cleaning animal housing and equipment.	Applied - high pressure hoses are used.
Select and use suitable equipment (e.g. nipple drinkers, round drinkers, water troughs) for the specific animal category while ensuring water availability (ad libitum).	Applied - low flow nipple drinkers are used.
Verify and (if necessary) adjust on a regular basis the calibration of the drinking water equipment.	Applied – ongoing adjustment is made to drinking water equipment.
Reuse uncontaminated rainwater as cleaning.	Not proposed - BAT will be met through other techniques (not currently being considered due to biosecurity concerns).
BAT 6 Reduce generation of wastewater (combination)	
Keep the fouled yard areas as small as possible.	Applied – there is no movement of animals outdoors.
Minimise use of water	Applied - water is used for drinking and cleaning purposes only. Dry cleaning applied/scrape down prior to washing to minimise water use.
Segregate uncontaminated rainwater from wastewater streams that require treatment.	Applied – concreted yard areas will be kept clean. Ventilation is high velocity roof exhausts so there will be no build up on dust around housing.
BAT 7 Reduce emissions to water from wastewater (one or a combination)	
Drain wastewater to a dedicated container or to a slurry store.	Applied – wastewater from cleaning houses will be drained to an underground wash water tank.
Treat wastewater.	Not proposed – BAT will be through other techniques.
Land spreading of wastewater e.g. by using an irrigation system such as sprinkler, travelling irrigator, tanker, umbilical injector.	N/A – all wastes are exported by a third party.

BAT Requirement	Old Rush
BAT 8 Efficient use of energy (combination)	
High efficiency heating/cooling and ventilation systems.	Applied - The farm will have a highly efficient ventilation system which has high-velocity roof exhaust fans which have an efflux velocity of 12 m/s and exceed 5.5m in height and automatic control systems.
Optimisation of heating/cooling and ventilation systems and management, especially where air cleaning systems are used.	Applied – Ventilation systems are computer-controlled to optimise and ensure bird welfare. LPG heating is used to maintain bird welfare.
Insulation of the walls, floors and/or ceilings of animal housing.	Applied – all bird housing will be insulated with wall, floor and roof insulation.
Use of energy-efficient lighting.	Applied - all housing will have LED lighting on timers.
Use of heat exchangers. One of the following systems may be used: 1. air-air; 2. air-water; 3. air-ground	Not proposed
Use of heat pumps for heat recovery.	Not proposed
Heat recovery with heated and cooled littered floor (combi-deck system)	Not proposed
Apply natural ventilation.	Not proposed
BAT 9 Noise emissions (all)	
Set up and implement a noise management plan.	BAT 9 is only applicable to cases where a noise nuisance at sensitive receptors is expected and/or has been substantiated. It is not expected that there will be a noise nuisance at sensitive receptors, however a Noise Management Plan is in place. In the event of any substantiated noise complaint, the plan will be reviewed and appropriate action taken.
BAT 10 Prevent or reduce noise emissions (one or combination)	
Ensure adequate distances between the plant/farm and the sensitive receptors.	Not Applied - the closest sensitive receptor (housing) is over 100m from the poultry unit.
Equipment location.	Applied - equipment used on the poultry unit is stored close to the sheds in which it will be used. There is no excess movement of vehicles.
Operational measures	Applied - operational measures (including working hours, closure of doors during cleaning, timing of deliveries, planned maintenance, etc) have been considered as part of the Noise Management Plan. A site 7am-7pm curfew is in place to help mitigate any potential noise nuisance.
Low-noise equipment	Not proposed - noise is not considered to be a concern at this unit.
Noise-control equipment	Not proposed – BAT met through other means
Noise abatement.	Not proposed – BAT met through other means

BAT Requirement	Old Rush
BAT 11 Dust emissions (one or a combination)	
Reduce dust generation inside livestock building using a combination of the following techniques: 1. Use coarser litter material; 2. Apply fresh litter using a low-dust littering technique; 3. Apply ad libitum feeding; 4. Use moist feed, pelleted feed or add oily raw materials or binders in dry feed systems; 5. Equip dry feed stores which are filled pneumatically with dust separators; Design and operate the ventilation with low air speed within the house.	Applied – • Coarse (dust-extracted) litter is used • Top up litter is applied by hand • Birds are fed ad-lib based on best practice health and welfare guidance • Pelleted feed is used • Feed bins have cyclones which will collect and contain any dusts during the filling process. The ventilation systems within housing operates at low air speed to avoid wind chill
Reduce dust concentration inside housing by applying one of the following: 1. Water fogging; 2. Oil spraying; 3. Ionisation.	Not proposed - BAT will be met through other techniques.
Treatment of exhaust air by an air cleaning system such as: 1. Water trap; 2. Dry filter; 3. Water scrubber; 4. Wet acid scrubber; 5. Bio scrubber; 6. Two-stage or three-stage air cleaning system; 7. Biofilter.	Not proposed - BAT will be met through other techniques.
BAT 12 Prevent or reduce odour emissions – odour management plan (all)	
In order to prevent, or where that is not practicable, to reduce odour emissions from a farm, BAT is to set up, implement and regularly review an odour management plan, as part of the environmental management system (see BAT 1).	BAT 12 is only applicable to units where an odour nuisance at sensitive receptors is expected and/or has been substantiated. It is not expected that there will be an odour nuisance at sensitive receptors, however the site's Odour Management Plan will be updated. In the event of any substantiated odour complaint, the plan will be reviewed and appropriate action taken.

BAT Requirement	Old Rush
BAT 13 Prevent or reduce odour emissions and / or odour impact from unit (combination)	
Ensure adequate distances between the plant/farm and the sensitive receptors.	Not Applied - the closest sensitive receptor (housing) is over 100m from the poultry unit.
Use a housing system which implements one or a combination of the following principles: • Keeping the animals and surfaces dry and clean; • Reducing the emitting surface of manure; • Removing manure frequently to an external store; • Reducing the temperature of the manure and of the indoor environment; • Decreasing the air flow and velocity over the manure surface; Keeping littler dry and under aerobic conditions.	Applied – • birds and surfaces will be kept dry and clean. • housing will be thoroughly cleaned at the end of each crop and manure will be removed from site to a field heap. • The temperature of the indoor environment, air flow and velocity will be optimised to meet bird welfare requirements
Optimise the discharge conditions of exhaust air from the animal house by using one or a combination of the following techniques: • Increasing the outlet height; • Increasing the vertical outlet ventilation velocity; • Effective placement of external barriers to create turbulence in the outgoing air flow; • Adding deflector covers in exhaust apertures located in low parts of walls in order to divert exhaust air towards the ground; • Dispersing exhaust air at the housing side which faces away from the sensitive receptor; • Aligning the ridge axis of a naturally ventilated building transversally to the prevailing wind direction.	Applied – • Outlet height is 5.5m • High velocity exhaust roof fans will be installed
Use an air cleaning system, such as: 1. Bio scrubber 2. Biofilter 3. Two-stage or three-stage air cleaning system	Not proposed - BAT will be met through other techniques.
Use one or a combination of the following: 1. Cover slurry or solid manure during storage; 2. Located the store taking into account the general wind direction to reduce wind speed around and above the store; 3. Minimise stirring of slurry.	Not proposed – manure is not stored on site, it is taken offsite to a field heap.
Process manure with one of the following techniques in order to minimise odour emissions during land spreading: 1. Aerobic digestion; 2. Compost solid manure; 3. Anaerobic digestion.	Not proposed - BAT will be met through other techniques.

BAT Requirement	Old Rush
Use one of a combination of the following techniques for manure land spreading: 1. Band spreader, shallow injector or deep injector for slurry land spreading. 2. Incorporate manure as soon as possible.	Applied - manure is spread in accordance with EA's General Binding Rules. Where possible it is not spread at the weekends or on public holidays. It is ploughed down quickly after application unless spread on grassland or on growing crops.
BAT 14 Prevent or reduce emissions to air from solid manure storage (one or a combination)	
Reduce the ratio between the emitting surface area and the volume of the solid manure heap.	Applied - manure is removed directly to a field heap. The surface area is minimised.
Cover manure heap.	Not proposed - BAT will be met through other techniques (manure is not stored on site).
Store dried.	Not proposed - BAT will be met through other techniques (manure is not stored on site).
BAT 15 Prevent or reduce emissions to soil and water from storage of solid manure (combination)	
Store dried solid manure in a barn.	N/A – manure is exported by third party.
Use a concrete silo for storage of solid manure.	N/A – manure is exported by third party.
Store solid manure on solid impermeable floor equipped with a drainage system and a collection tank for the run-off.	N/A – manure is exported by third party.
Select a storage facility with a sufficient capacity to hold the solid manure during periods in which land spreading is not possible.	N/A – manure is exported by third party.
Store solid manure in field heaps placed away from surface and/or underground watercourses which liquid run-off might enter.	N/A – manure is exported by third party.
BAT 16 Prevent or reduce emissions to air from slurry storage (combination)	
Appropriate design and management of the slurry store by using a combination of the following techniques: 1. Reduce the ratio between the emitting surface area and the volume of the slurry store; 2. Reduce wind velocity and air exchange by operating the store at a lower level of fill; 3. Minimise stirring of slurry.	BAT 16 is not applicable, no slurry stores are proposed.
Cover the slurry store.	BAT 16 is not applicable, no slurry stores are proposed.
Slurry acidification.	BAT 16 is not applicable, no slurry stores are proposed.
BAT 17 Reducing emissions to air from an earth-banked slurry store (combination)	
Minimise stirring of the slurry.	BAT 17 is not applicable, no earth-banked slurry stores are proposed.
Cover the earth-banked slurry store (lagoon) with a flexible and/or floating cover such as: • flexible plastic sheets; • light bulk materials; • natural crust; • straw.	BAT 17 is not applicable, no earth-banked slurry stores are proposed.

BAT Requirement	Old Rush
BAT 18 Prevention of emissions to soil and water from slurry collection, piping, and from a store and/or an earth-banked storage (lagoon) (combination)	
Use stores that are able to withstand mechanical, chemical and thermal influences.	BAT 18 is not applicable, no earth-banked slurry stores are proposed.
Select a storage facility with a sufficient capacity to hold the slurry during periods in which land spreading is not possible.	
Construct leak-proof facilities and equipment for collection and transfer of slurry (e.g. pits, channels, drains, pump stations).	
Store slurry in earth-banked stores (lagoons) with an impermeable base and walls e.g. with clay or plastic lining (or double-lined).	
Install a leakage detection system, e.g. consisting of a geomembrane, a drainage layer and a drainage pipe system.	
Check structural integrity of stores at least once every year.	
BAT 19 Reduce emissions to air from on-farm processing of manure (combination)	
Mechanical separation of slurry. This includes e.g.: • Screw press separator; • Decanter-centrifuge separator; • Coagulation- Flocculation; • Separation by sieves; • Filter pressing.	BAT 19 is not applicable, no on-farm processing of manure is proposed.
Anaerobic digestion of manure in a biogas installation.	
Use of an external tunnel for manure drying.	
Aerobic digestion (aeration) of slurry.	
Nitrification-denitrification of slurry.	
Composting of solid manure.	
BAT 20, 21 and 22 Manure land spreading (all)	
The interpretational guidance indicates that these BAT conclusions are only considered to be relevant where spreading is carried out on the farm within the installation boundary. This is not proposed at Old Rush; however, the following is confirmed: • Spreading will be done in accordance with General Binding Rules. • Slurry will be applied to farmland owned by third parties. • Slurry will be ploughed down quickly after application unless spread on grassland or on growing crops. • Low trajectory equipment will be used for spreading.	

BAT Requirement	Old Rush
BAT 23 Reduce ammonia emissions from the whole process	
Operators will be required to report they are meeting BAT-AELs annually.	Applied - emission information will be provided as required.
BAT 24 Monitor total nitrogen and total phosphorus excreted in manure (one)	
Calculate total nitrogen and total phosphorus excreted in manure by using a mass balance of nitrogen and phosphorus based on the feed intake, crude protein content of the diet, total phosphorus and animal performance.	Applied - information to be obtained from nutritionist and/or through calculator tools developed for the industry. This will be calculated using the mass balance methodology.
Estimation of total nitrogen and phosphorus excreted by using manure analysis for total nitrogen and phosphorus content.	Not required for Breeders. Not proposed - BAT will be met through other techniques.
BAT 25 Monitor ammonia emissions to air (one)	
Estimation by using a mass balance based on the excretion and the total (or total ammoniacal) nitrogen present at each manure management stage.	Not proposed - BAT will be met through other techniques.
Calculation by measuring the ammonia concentration and the ventilation rate using ISO, national or international standard methods or other methods ensuring data of an equivalent scientific quality.	Not proposed - BAT will be met through other techniques.
Estimation by using emission factors.	Applied – Reporting annually via PIR portal to EA.
BAT 26 Monitor odour emissions to air (all)	
Odour emissions can be monitored by using: - EN standards (e.g. by using dynamic olfactometry according to EN 13725 in order to determine odour concentration). - When applying alternative methods for which no EN standards are available (e.g. measurement/estimation of odour exposure, estimation of odour impact), ISO, national or other international standards that ensure the provision of data of an equivalent scientific quality can be used.	Applied – perimeter sniff testing will be carried out on a weekly basis and recorded within the site EMS for inspection.
BAT 27 Monitor dust emissions from housing (one)	
Calculate dust emissions by measuring dust concentration and the ventilation rate.	Not proposed - BAT will be met through other techniques.
Estimate dust emissions by using emission factors.	Applied - emission information will be provided as required using UK emission factors. PM figures reported annually via PIR portal.
BAT 28 BAT is to monitor, ammonia, dust and/or odour emissions from each animal house equipped with an air cleaning system (all)	
Verification of the air cleaning system performance by measuring ammonia, odour and/or dust under practical farm conditions and according to a prescribed measurement protocol and using EN standard methods or other methods (ISO, national or international) ensuring data of an equivalent scientific quality.	Not proposed – houses are not equipped with air cleaning systems.

BAT Requirement	Old Rush
Control of the effective function of the air cleaning system (e.g. by continuously recording operational parameters or using alarm systems).	Not proposed – houses are not equipped with air cleaning systems.
BAT 29 Monitor the following process parameters (all)	
Water consumption	Applied – Water consumption will be recorded as required.
Electric energy consumption	Applied – Electricity consumption will be recorded as required.
Fuel consumption	Applied – Fuel consumption will be recorded as required.
Number of incoming and outgoing animals, including births and deaths when relevant.	Applied – Bird movements will be recorded as required including fallen stock removal.
Feed consumption	Applied – Feed consumption will be recorded as required.
Manure generation	Applied – Manure volume and movements off site will be recorded as required.
BAT 30 Reduce emissions to air from pig housing (one or a combination)	
This section does not apply.	
BAT 31 Reduce ammonia emissions to air from each house for laying hens, broiler breeders or pullets (one or a combination)	
This section does not apply.	
BAT Requirement	**Old Rush**
BAT 32 Reduce ammonia emissions to air from each house for broilers (one or a combination)	
a) Forced ventilation and a non-leaking drinking system (in case of solid floor with deep litter)	Applied – Automated air control/flow and circulation with low flow nipple drinkers.
b) Forced drying system of litter using indoor air (in case of solid floor with deep litter)	Not proposed - BAT will be met through other techniques.
c) Natural ventilation, equipped with a non-leaking drinking system (in case of solid floor with deep litter)	Not proposed - BAT will be met through other techniques.
d) Litter on manure belt and forced air drying (in case of tiered floor systems)	Not proposed - BAT will be met through other techniques.
e) Heated and cooled littered floor (in case of combideck systems)	Not proposed - BAT will be met through other techniques.
f) Use of an air cleaning system, such as: 1- Wet acid scrubber 2- 2 stage or 3 stage air cleaning system 3- Bioscrubber (or biotrickling filter)	Not proposed - BAT will be met through other techniques.