BAT Assessment

This BAT assessment was undertaken following the methodology in the following publications:

- Sector Guidance Note EPR 6.09 – How to comply with your environmental permit for intensive farming (Version 2, January 2010).
- Intensive Farming pre-application advice (Version 1.0, 20 July 2020).
- BAT conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the intensive rearing of poultry or pigs (21 February 2017).

BAT Ref	BAT Requirement	How the Applicant meets BAT
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 *[omitted list…]*	Stonegate Agriculture Ltd. maintains a documented management system comprising operational procedures required for efficient operation of the poultry unit. The management system includes all documentation which forms part of this permit application. Elements which are included within this suite of documentation are confirmed in the table below.
BAT 2	In order to prevent or reduce the environmental impact and improve overall performance, BAT is to use all the techniques given below *[omitted list…]*	The installation meets the housekeeping requirements though the following: • Siting of poultry housing in a location away from sensitive receptors • Drainage strategy prepared to prevent contamination of surface water. • Training of staff in permit requirements in addition to the standard training suite of animal welfare requirements, legal requirements, planning of activities, emergency response and planned and preventative maintenance (according to the asset register for this location). • Regular planned inspection of all equipment present on site, including slurry stores when emptied. • Storage of dead poultry in freezers awaiting collection by an approved collector for off-site rendering.
BAT 3	In order to reduce total nitrogen excreted and consequently ammonia emissions while meeting the nutritional needs of the animals, BAT is to use a diet	Feeding regimes include the following: • Reduce the crude protein content by using an N-balanced diet based on the energy needs and digestible amino acids.

	formulation and nutritional strategy which includes one or a combination of the techniques given below *[omitted list…]*	• Multiphase feeding with a diet formulation adapted to the specific requirements of the production period. • Addition of controlled amounts of essential amino acids to a low crude protein diet. • Use of authorised feed additives which reduce the total nitrogen excreted.
BAT 4	In order to reduce the total phosphorus excreted, while meeting the nutritional needs of the animals, BAT is to use a diet formulation and a nutritional strategy which includes one or a combination of the techniques given below *[omitted list…]*	Feeding regimes include the following: • Multiphase feeding with a diet formulation adapted to the specific requirements of the production period. Use of authorised feed additives which reduce the total phosphorus excreted (e.g. phytase). Phytase may not be applicable in case of organic livestock production. • Use of highly digestible inorganic phosphates for the partial replacement of conventional sources of phosphorus in the feed.
BAT 5	In order to use water efficiently, BAT is to use a combination of the techniques given below *[omitted list…]*	• Water use is recorded for the installation as a whole from the metered supply. Leakages will be detected and repaired as required. • High-pressure cleaners for cleaning animal housing and equipment will be used as part of the sanitation regime. • Water wastage will be minimised though use of nipple drinkers, with consumption monitored to ensure adequate consumption per bird. • Rainwater will not be reused for any purposes on site as the majority of water is used for cleaning and drinking purposes, this would be an unacceptable biosecurity risk.
BAT 6	In order to reduce the generation of waste water, BAT is to use a combination of the techniques given below *[omitted list…]*	• Dedicated hardsurfaced areas are provided in front of each poultry house where washwater will be collected in purpose built drainage channels to the slurry tanks. These are kept as small as possible while providing a suitable area for removing waste litter to waiting trailers. • Use of water for cleaning is minimised as far as possible by use of high-pressure cleaners, while using the amount required to ensure sanitary conditions. • Uncontaminated rainwater is segregated from roof areas into soakaways, ensuring it does not enter the slurry tank. High-velocity roof vents help keep roofs clear of potentially contaminative dust.
BAT 7	In order to reduce emissions to water from waste water, BAT is to use one or a	• Wastewater which could be contaminated is drained through dedicated drainage channels to underground slurry stores which meet the

	combination of the techniques given below *[omitted list…]*	requirements of the Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Oil) (England) Regulation 2010, as amended. • Treating of washwater is not feasible on the small scale of this poultry unit. • Wastewater is taken offsite by tanker for landspreading. Process for spreading depends on location.
BAT 8	In order to use energy efficiently in a farm, BAT is to use a combination of the techniques given below *[omitted list…]*	• High efficiency heating/cooling and ventilation systems. • Optimisation of heating/cooling and ventilation systems and management • Walls floors and ceilings of poultry houses will be insulated: o Roof insulation shall have a U-Value of less than 0.3 W/m2/°C; and o The walls and doors insulation shall have a U-Value of less than 0.4 W/m2/°C. • LED lighting will be used which is energy efficient, controlled to provide suitable intensity and day length.
BAT 9	In order to prevent, or where that is not practicable, to reduce noise emissions, BAT is to set up and implement a noise management plan, as part of the environmental management system (see BAT 1), that includes the following elements *[omitted list…]*	A Noise Report was prepared by Miller Goodall Ltd., noise and acoustic consultants on 23 October 2020 (Report reference: 101683-2) and submitted as part of the planning application. This report included noise modelling and concluded "It has been shown that no mitigation is required and it is considered that the development may proceed without any risk of adverse acoustic impact". The Noise Report has been provided as part of this application. However, as Stonegate Agriculture Ltd. is a responsible operator, all permitted installations maintain a Noise Management Plan which meets the requirements of EPR 6.09 "How to comply with your environmental permit for intensive farming" which includes: • A protocol containing appropriate actions and timelines • A protocol for conducting noise monitoring • A protocol for response to identified noise events. No noise reduction programme is currently considered necessary as no substantiated historical noise incidents are known to have occurred.
BAT 10	In order to prevent, or where that is not practicable, to reduce noise emissions, BAT is to use one or a combination of	• Low noise equipment located in optimal locations, the majority will be new installation. • Experienced operators.

	the techniques given below *[omitted list…]*	• Tasks likely to generate noise undertaken during weekdays and during daytime hours. • All-in/all-out regime ensures that litter removal and cleaning operations are all carried out during the same period, leaving long uninterrupted quiet periods.
BAT 11	In order to reduce dust emissions from each animal house, BAT is to use one or a combination of the techniques given below *[omitted list…]*	<u>Further detail is provided in the Housing Review.</u> • Dust generation is reduced through using whitewood shavings that have been pre-cleaned for dust prior to delivery. Fresh litter is spread through mechanical and hand means rather than blowing. • Apply ad libitum feeding • Computer controlled ventilation reduces draughts within the poultry house while maintaining optimal air flow over the chickens and litter. • Water fogging and oil spraying is not considered appropriate due to day-old chicks and wet litter leading to animal welfare issues and the requirement to maintain dry litter to reduce ammonia emissions. • The operator controls dust at source rather than emission controls.
BAT 12	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), that includes the following elements *[omitted list…]*	An air quality report was prepared by Delta Simons Environmental Consultants Ltd., dated October 2019 (Report reference: 18-0995) and submitted as part of the planning application. This report included odour modelling which identified sensitive odour receptors. The closest was 135 Main Road, Dorrington, approximately 60m south west of the installation. The results of the modelling indicate that the majority of nearby sensitive receptor locations considered within the assessment extents would experience a negligible impact on 5-year average 98th%-ile odour concentrations as a result of the operation of the Site. Therefore, based on the extent of predicted population exposure to the impacts and the guidance provided by the IAQM, the overall effect of the Proposed Development was considered to be not significant. However, as Stonegate Agriculture Ltd. is a responsible operator, all permitted installations maintain an Odour Management Plan which meets the requirements of EPR 6.09 “How to comply with your environmental permit for intensive farming” which includes:

		• A protocol containing appropriate actions and timelines • A protocol for conducting odour monitoring • A protocol for response to identified odour nuisance No odour reduction programme is currently considered necessary as no substantiated historical odour incidents are known to have occurred.
BAT 13	In order to prevent, or where that is not practicable, to reduce odour emissions and/or odour impact from a farm, BAT is to use a combination of the techniques given below *[omitted list…]*.	Potential odour emissions will be minimised through the following: • Housing system which meets BAT. • Minimising water ingress through drinking systems and building fabric to keep litter and animals dry. • Ensuring exhaust air from roof ventilation is greater than 5.5m above ground level and greater than 7m/s. As per the odour modelling, odour nuisance is not expected at the identified sensitive receptors within 400 metres.
BAT 14	In order to reduce ammonia emissions to air from the storage of solid manure, BAT is to use one or a combination of the techniques given below *[omitted list…]*	*Not applicable – litter is removed from site once houses are depopulated. No litter is stored on site.*
BAT 15	In order to prevent, or where that is not practicable, to reduce emissions to soil and water from the storage of solid manure, BAT is to use a combination of the techniques given below in the following order of priority *[omitted list…]*	*Not applicable – litter is removed from site once houses are depopulated. No litter is stored on site.*
BAT 16	In order to reduce ammonia emissions to air from a slurry store, BAT is to use a combination of the techniques given below *[omitted list…]*	The slurry tanks will be purpose built underground tanks which comply with the requirements of the Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Oil) (England) Regulation 2010, as amended.
BAT 17	In order to reduce ammonia emissions to air from an earth-banked slurry store (lagoon), BAT is to use a combination of	*Not applicable – no earth banked slurry store will be present.*

	the techniques given below *[omitted list…]*	
BAT 18	In order to prevent emissions to soil and water from slurry collection, piping, and from a store and/or an earth-banked storage (lagoon), BAT is to use a combination of the techniques given below *[omitted list…]*	The slurry tanks will be purpose built underground tanks which comply with the requirements of the Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Oil) (England) Regulation 2010, as amended. This will include the provision of a certificate from the supplier/installer that the store will be impermeable for at least 20 years from installation. Sufficient capacity will be provided to ensure that the tanks can contain an entire washout of all connected poultry houses as well as sufficient freeboard to prevent overflow.
BAT 19	If on-farm processing of manure is used, in order to reduce emissions of nitrogen, phosphorus, odour and microbial pathogens to air and water and facilitate manure storage and/or landspreading, BAT is to process the manure by applying one or a combination of the techniques given below *[omitted list…]*	No on-farm processing of manure takes place at the installation.
BAT 20	In order to prevent or, where that is not practicable, to reduce emissions of nitrogen, phosphorus and microbial pathogens to soil and water from manure landspreading, BAT is to use all the techniques given below *[omitted list…]*	No spreading of poultry litter will take place at the installation. All spreading of poultry litter will be to pre-approved farms under agreed manure management plans.
BAT 21	In order to reduce ammonia emissions to air from slurry landspreading, BAT is to use one or a combination of the techniques given below *[omitted list…]*	No slurry spreading will take place at the installation.
BAT 22	In order to reduce ammonia emissions to air from manure landspreading, BAT is to incorporate the manure into the soil as soon as possible.	Used litter is taken from the installation directly to the location it is to be spread. The receiver then confirms it is spread to land following the requirements of the Code of Good Agricultural Practice (COGAP) for Reducing Ammonia Emissions.

		Stonegate Agriculture Ltd. maintains relationships with trusted receivers and transporters.
BAT 23	*[only applicable to pig farms]*	*Not applicable.*
BAT 24	BAT is to monitor the total nitrogen and total phosphorus excreted in manure using one of the following techniques with at least the frequency given below *[omitted list…]*	The applicant would prefer both calculation techniques were included within the permit: • Calculation 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. Once every year for each animal category. Generally applicable. • Estimation by using manure analysis for total nitrogen and total phosphorus content.
BAT 25	BAT is to monitor ammonia emissions to air using one of the following techniques with at least the frequency given below *[omitted list…]*	The applicant will estimate ammonia emissions to air using emission factors once every year.
BAT 26	BAT is to periodically monitor odour emissions to air.	Odour nuisance is not expected at sensitive receptors (refer to modelling) and employees will use experience and sniff tests when undertaking daily site visits. Any deviation from normal operational practices which may give rise to odour will be recorded.
BAT 27	BAT is to monitor dust emissions from each animal house using one of the following techniques with at least the frequency given below *[omitted list…]*	The applicant will report dust emissions using estimates based on published poultry dust emission factors (0.1 kg dust/animal place/year).
BAT 28	BAT is to monitor ammonia, dust and/or odour emissions from each animal house equipped with an air cleaning system by using all of the following techniques with at least the frequency given below *[omitted list…]*	No air cleaning systems are installed at the installation.
BAT 29	BAT is to monitor the following process parameters at least once every year *[omitted list…]*	• Total water and electricity consumption at the installation will be monitored through metered supply. • LPG consumption will be based on invoices but is expected to vary based on prevailing weather and seasonal conditions.

		• Animal movements will be recorded, including fallen stock, in accordance with established statutory recording procedures. • Feed consumption will be recorded through invoicing. • Manure/litter generation will be recorded through the number of vehicle movements leaving the installation when litter removal operations are undertaken.
BAT 30	*[only applicable to pig farms]*	*Not applicable.*
BAT 31	In order to reduce ammonia emissions to air from each house for laying hens, broiler breeders or pullets, BAT is to use one or a combination of the techniques given below *[omitted list…]*	<u>Further detail is provided in the Housing Review.</u> • is not considered appropriate due to day-old chicks and wet litter leading to animal welfare issues and the requirement to maintain dry litter to reduce ammonia emissions.
BAT 32	*[only applicable to broilers]*	*Not applicable.*
BAT 33	*[only applicable to duck farms]*	*Not applicable.*