

Craignathro Eggs Limited

Easter Meathie Free Range Egg Farm

PPC Part A Permit Application

PPC/A/5003791

Draft for Consultation

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1 NON-TECHNICAL SUMMARY OF DETERMINATION

The application by Craignathro Eggs Limited is for a new free range egg production farm located on agricultural land northwest of Mains of Easter Meathie. The site is located 3.9km south of Forfar, Angus. The farm will house a total of 64,000 free range laying hens in two new poultry housing units on a multi-tier aviary system. The site is located at Ordnance Survey national grid reference NO 4610 4660. The permit application is made under Part A of Section 6.9 (a) of Schedule 1 of the Pollution Prevention and Control (Scotland) Regulations 2012.

The poultry houses are designed to minimise ammonia emissions. All walls and roofs will be insulated to retain heat and minimise condensation. The concrete floors will be protected from water ingress by an impermeable damp-course membrane. The south side of the housing units (free range area) will have an interceptor drain, cutting off drainage from higher ground and diverting it away from the poultry houses.

Temperature and humidity are monitored continuously by sensors located within each individual housing unit. The climatic conditions are recorded and adjusted accordingly to achieve optimal conditions for flock welfare and to maintain low moisture content in the litter. Litter will be monitored to ensure that it is friable and loose.

Ventilation will be by means of roof-mounted fan assisted inlet chimneys, with side wall and gable end extraction fans. Duty operation will be via the side wall extraction fans with the gable end extraction fans only operating during warmer weather. Each house will have a total of 16 inlet chimneys, 4 small extraction fans spaced equidistantly along each side and 8 large extraction fans in the gable end. In addition, each house will be fitted with a heat exchanger.

The aviary production system comprises nest boxes and bird perches, and pop-holes in the base of the housing unit so that the birds may roam. Manure collection will be via manure belts that collect manure from underneath bird perches, nesting boxes and drinking and feeding stations. Manure will be removed from the housing units two/three times per week via conveyor to a covered trailer outside the poultry houses. Manure will then be spread to land outwith the installation boundary.

Hens will be introduced at 16 weeks of age and housed for approximately 55 – 60 weeks before the flock is depleted. At the end of each cycle, the housing units will be destocked of birds and all litter and manure completely removed manually into covered trailers and spread to land outwith the installation boundary. The housing units are then washed down and disinfected before the introduction of the next flock. Washwater will be collected in a sealed below ground tank prior to being spread to land outwith the installation boundary.

No food mixing occurs within the installation boundary. The premixed feed is delivered directly to the site as required. Feed composition is adjusted throughout the flock cycle to provide optimal nutrient uptake and minimise loss via manure.

Water is supplied to the site via mains water supply. Nipple drinkers will be used to water the birds. These reduce wastage of water and maintain dry litter.

Lightly contaminated roof and surface water from the concrete pads around the site and scratch areas will drain to a series of swales for treatment. The swales have been designed in accordance with the CREW Rural SuDS Guide.

Eggs are conveyed to a central service area where they are packed for processing off site.

Bird mortalities will be collected daily and transferred to a freezer within the Central Services Area for removal by an appropriately licenced facility.

The free-range area will be planted with trees. When mature the tree canopy will aid in absorbing dust and ammonia emissions thereby reducing their impact on the surrounding environment.

Collectively, these measures are intended to reduce the production and release of ammonia, odours, and dust from the housing units, to prevent liquid washings escaping to the environment, and to manage the waste produced on-site. All aspects of building design and operation will be supported by management systems that aim to minimise the impact of the permitted activities on emissions to air, water, and land.

A Baseline Report has been submitted with the application and has been assessed as satisfactory to meet PPC Schedule 4 Part 1.

There are duties placed on SEPA for the protection of designated sites under The Conservation (Natural Habitats, &c.) Regulations 1994 and the Nature Conservation (Scotland) Act 2004. Easter Meathie Free Range Egg Farm lies within 10 kilometres of 10 designated sites (please see Section 4.4 of this Decision Document). The applicant submitted detailed modelling (Air Quality Impact Assessment (AQIA)) for the proposed free range layer unit, which was undertaken as part of the planning application. The AQIA was assessed by SEPA as acceptable with no predicted breaches of critical loads and levels at nearby designated sites.

The application submitted complies with both the PPC requirements and the Standard Farming Installation Rules.

Determination was therefore to issue the Permit PPC/A/5003791 based on the application submitted.

Glossary of terms

BAT	Best Available Techniques
BREF	Best Available Techniques Reference Document
CO	Coordinating Officer
CREW Rural SuDS Guide	CREW Rural Suds Design and Build Guide' means the Duffy, A. Moir, S. Berwick, N. Shabashow, J. D'Arcy, B. Wade R. (2016). Rural Sustainable Drainage Systems: A Practical Design and Build Guide for Scotland's Farmers and Landowners, CRW2015/2.2, available online at www.crew.ac.uk/publications
DAA	Directly Associated Activity
ELV	Emission Limit Value
GBR 18	General Binding Rule 18 of the Water Environment (Controlled Activities) (Scotland) Regulations 2011
IA	Intensive Agriculture
IED	Industrial Emissions Directive
NVZ	Nitrate Vulnerable Zone
PM ₁₀	Concentration of particles that are less than or equal to 10 µm in diameter
PPC	Pollution Prevention and Control (Scotland) Regulations 2012
PPD	Public Participation Directive
SAC	Special Area of Conservation
SCAIL	Simple Calculation of Atmospheric Impact Limits
SFIRs	Intensive Livestock Installations, Standard Farming Installation Rules (How to Comply): Incorporating PPC Permit application guidance. April 2013.

SGRPID	Scottish Government Rural Payments and Inspections Directorate
SSSI	Site of Special Scientific Interest
SuDS	Sustainable Drainage System

2 EXTERNAL CONSULTATION AND SEPA'S RESPONSE		
<i>Is Public Consultation Required:</i> Yes		
<i>Advertisements Check:</i>	<i>Date</i>	<i>Compliance with advertising requirements</i>
Edinburgh Gazette	11/11/2022	Yes
Dundee Courier	11/11/2022	Yes
<i>Officer checking advert:</i> CO		
<i>No. of responses received:</i> None		
<i>Summary of responses and how they were taken into account during the determination:</i> No responses received.		
<i>Summary of responses withheld from the public register on request and how they were taken into account during the determination:</i> N/A		
<i>Is PPC Statutory Consultation Required:</i> Yes		
<i>Food Standards Agency:</i>		
<p>Consulted: 08/11/2022 Reconsulted on 14/11/2022 due to an error in the initial consultation.</p> <p>Response received: 22/11/2022 '<i>Based on the application and provided that the applicant complies with the relevant SEPA Guidance and all other relevant PPC Guidance Notes and Regulations, Food Standards Scotland considers it unlikely that there will be any unacceptable effects on the human food chain from the emissions from this installation.</i>'</p>		
<i>Health Board:</i>		
<p>Consulted: 08/11/2022 Reconsulted on 14/11/2022 due to an error in the initial consultation.</p> <p>No response received.</p>		
<i>Local Auth:</i>		
<p>Consulted (Environmental Health): 08/11/2022 Reconsulted on 14/11/2022 due to an error in the initial consultation.</p> <p>No response received.</p>		

Scottish Water: N/A	
Health and Safety Executive: N/A	
Scottish Natural Heritage (PPC Regs consultation): Consulted (NatureScot): 08/11/2022. Response received: 09/11/2022 No comments to make. Reconsulted on 14/11/2022 due to an error in the initial consultation. Response received: 14/11/2022 No 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	14/02/2023
Date draft determination placed on SEPA’s Website	14/02/2023
Details of any other ‘appropriate means’ used to advertise the draft.	
Date public consultation on draft permit opened	14/02/2023
Date public consultation on draft permit consultation closed	
Number of representations received to the consultation	
Date final determination placed on the SEPA’s Website	
Summary of responses and how they were taken into account during the determination:	
Officer: CO	

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

4 INTRODUCTION AND BACKGROUND

4.1 Historical Background to the activity

The application by Craignathro Eggs Limited is for a new free range egg production farm located on agricultural land northwest of Mains of Easter Meathie. The site is located 3.9km south of Forfar, Angus. The farm will house a total of 64,000 free range laying hens in two new poultry housing units on a multi-tier aviary system.

The Applicant was required to demonstrate that the poultry housing units were designed having regard to the following principles outlined in the BREF and the BAT Conclusions:

- reducing the ammonia-emitting surface;
- removing the manure frequently to an external store (e.g., with belt removal systems);
- quickly drying the manure;
- using surfaces which are smooth and easy to clean;
- lowering the indoor temperature and ventilation as much as animal welfare and/or production allow.

The proposals for the new housing demonstrate that the chosen design addresses the above principles.

4.2 Description of activity

The activity proposed is rearing poultry intensively in an installation with more than 40,000 places as described in Part A of Section 6.9 (a) of Schedule 1 of the Regulations.

Craignathro Eggs Limited proposes two poultry housing units with a capacity for 64,000 places for free range hens for egg production.

Directly Associated Activities include:

- Feed delivery & storage
- Generator & fuel storage

- Water storage
- Chemical storage
- Manure handling
- Dirty water storage
- Storage of fallen stock for disposal
- Management of lightly contaminated surface water
- Auxiliary power generation.

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

Easter Meathie Free Range Egg Farm is within 10 kilometres of the following NatureScot designated sites.

Table 4.1: Designated sites within 10 kilometres of Easter Meathie Farm Range Farm

Name	Distance from Easter Meathie	Designation
River Tay	2.3	SAC
Restenneth Moss	5.1	SSSI
Carrot Hill Meadow	5.9	SSSI
Turin Hill	6.1	SSSI
Dilty Moss	6.2	SSSI
Rescobie & Belgavies Lochs	6.2	SSSI
River South Esk	6.8	SAC
Whitehouse Den	7.9	SSSI
Forest Muir	8.8	SSSI
Gagie Marsh	9.6	SSSI

Refer to Sections 5.2 and 6 for an assessment of the impact of the proposal on the identified designated sites.

The site is located in a rural area with outspread residences and other nearby agricultural operations. There are no human health sensitive receptors identified within 250 metres as part of the required screening for PM₁₀ emissions from this site.

5 KEY ENVIRONMENTAL ISSUES

5.1 Summary of significant environmental impacts

SEPA have identified several environmental impacts (not necessarily significant) which need to be assessed. These are identified as follows:

Emissions to Air	Ammonia, dust (PM ₁₀) and odour
Emissions to Land	Waste, faecal material, and nutrient inputs to land
Emissions to Water	Surface water discharge to surface water and indirect to groundwater
Other Emissions	Noise
Associated risks	Fuel and chemical storage

SEPA aims to control these through the conditions contained in the permit and by the requirement on the operator to comply with BAT as indicated in the SFIR and the 2017 BAT Conclusions.

During the pre-application process SEPA liaised with the applicant's consultant and COGEO who undertook the Air Quality Impact Assessment (AQIA) for the proposed free range layer unit. The AQIA was assessed by SEPA as acceptable with no predicted breaches of critical loads and levels at nearby Designated Sites or statutory limits of PM₁₀ (dust).

5.2 Implications of the Application on - Point Sources to Air

The main point source of emissions to air from Easter Meathie Free Range Egg Farm will be from the housing units, ventilation system and the generator in the form of ammonia, dust and fuel fumes.

Ammonia and dust will be minimised by carefully managing air exchange to control humidity levels within the sheds and maintaining the dry matter content of the litter at an optimal value of between 60-65%.

Ammonia (BAT 23 & 31)

Ammonia can be carried on the air and deposited in lochs and ponds causing eutrophication. It is assessed that the main point source of ammonia from the installation will be from the housing and ventilation. To quantify the amount of ammonia which will be emitted, SEPA use DEFRA-approved emission factors. The emission factors are specific to each housing system. Some housing systems are more efficient than others and will result in a lower emission factor. The proposed housing at Easter Meathie Free Range Egg Farm meets the description in BAT Conclusion 31 (b) (4) '*manure belts (in case of aviary)*.'

There are duties placed on SEPA for the protection of designated sites under The Conservation (Natural Habitats, &c.) Regulations 1994 and the Nature Conservation (Scotland) Act 2004. Easter Meathie Free Range Egg Farm lies within 10 kilometres of 10 designated sites (please see Section 4.4 of this Decision Document).

Using the emission factor for free range layers of 0.108 kg NH₃/bird place/year (ammonia produced by an average sized bird)¹ the ammonia released from the installation at Easter Meathie Free Range Egg Farm would be on average 6,912 kg/year (based on a population of 64,000 birds).

To assess the potential impact of ammonia from Intensive Agriculture Installations on designated sites, the applicant is required to undertake modelling. The applicant submitted detailed modelling (Air Quality Impact Assessment (AQIA)) for the proposed free range layer unit, which was undertaken as part of the planning application.

Present advice is that ranging areas should be modelled as an area source equivalent to the whole ranging area with an average emission rate across the whole range. At the time of pre-application advice being given, modelling of the range area explicitly was not proposed for this application and SEPA accepted the use of a combined emission factor (0.108 kg NH₃/bird place/year) modelled as a point source. Taking into consideration that the predicted process contributions presented in the AQIA results are a very low percentage of the critical load for each receptor, the risk of significant adverse effect to site integrity is low and therefore changing the parameters of the model to observe this new requirement is unlikely to change the outcome.

The AQIA was assessed by SEPA as acceptable with no predicted breaches of critical loads and levels at nearby designated sites. It was concluded that a significant effect is unlikely, and no further assessment was required.

¹ SEPA's default position is that the estimated emission factor for time spent on the ranging area is 0.22 kg NH₃ per bird-place per year. Ranging emissions should be factored by 20% (Inventory of Ammonia Emissions from UK Agriculture 2020), to represent the proportion of emission arising from droppings on the range. Housing emissions (0.08 kg NH₃ per bird place per year for an aviary system) should be factored by 80%, to represent the proportion of emission derived from indoors.

During the determination of this permit, the Applicant notified SEPA of an amendment to the PPC application. Each poultry house will be fitted with a heat exchanger. This had not been included in the initial application. The heat exchanger warms the incoming air, which will be directed onto the manure belts, and result in drier conditions within the poultry house. Heat exchangers have been added to satisfy planning requirements for manure management by the local Council.

Heat exchangers attract a 60% reduction in the ammonia emission factor². As the heat exchangers were only included in the proposal after the AQIA had been concluded, the 60% reduction to the ammonia emission factor has not been applied. Therefore, the addition of heat exchangers will reduce ammonia emitted from the poultry houses and reduce impacts on the designated sites and surrounding environment ever further.

A tree planting plan for the site will be developed by the Woodland Trust. The main purpose of the tree planting is to augment the ranging area. Once mature, the trees will act as a shelter belt for ammonia emissions affording greater protection of the surrounding environment. The additional reduction that the trees will afford once mature was not factored into the air quality monitoring.

Dust (PM₁₀) (BAT 11)

Dust from poultry houses mainly originates from feathers, skin particles and used litter and to a lesser extent from feed and bedding.

PM₁₀ dust particles (particulate matter 10 micrometres or less in diameter) are subject to statutory air quality standards. In Scotland, air quality objectives are set out in the Air Quality (Scotland) Regulations 2000 (as amended).

Where sensitive receptors are located within 250 metres of a poultry unit, SEPA requests that the Applicant screens the emission of particulate matter to establish whether the emission will cause any air quality objectives to be breached. COGEO identified several human health receptors within 1 kilometre of the proposed site as part of the AQIA. The closest receptor to the proposed site is approximately 350 meters to the north. The AQIA concluded that the proposed development is not likely to exceed air quality objectives at sensitive receptors.

As there are no sensitive receptors located within 250 metres of the proposed poultry site, and the AQIA showed that there are no predicted exceedances of air quality objectives within 1 kilometre of the proposed site, SEPA has assessed the risk to human health as acceptable.

Diesel Generator

It is a requirement of the animal welfare regulations that the birds have adequate heating and ventilation at all times. The site will be powered by solar panels and supplemented by mains grid electricity. However, in the event of a power failure, a back-up diesel generator will be used. SEPA are aware that diesel generators can give rise to dense fume, especially at start up, or if the generator is poorly maintained, and would expect the operator to use BAT particularly with regard to servicing and maintenance to minimise visible emissions and particulates from the exhaust. The generator will be tested for a short period once per week.

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

Foul Drainage

There are no public sewers within the vicinity of Easter Meathie Free Range Egg Farm and therefore there will be no discharges to the sewer.

A septic tank will be installed to collect all domestic wastewater from the welfare amenities and discharge to a full soakaway north of the poultry sheds. This is to be authorised under The Water

² Inventory of Ammonia Emissions from UK Agriculture 2020.

Environment (Controlled Activities) (Scotland) Regulations 2011. The foul effluent system is not considered part of the Permitted Installation.

Surface Water Drainage

Surface water run-off from the housing unit roofs, scratch areas and low-contamination yards will be directed to two swales (please see EM Drg 1 Drainage layout V11 and EM Drg 2 Design of Swales in the application supporting documentation).

As the swales are located on the range area and the lower range area is known to be closer to the winter water table level, the proposed depth of the swales is less than that recommended in the CREW Rural SuDS Guide. There is a need for the range area to remain as dry as possible to avoid attracting wild birds to standing water and therefore the applicant designed shallow swales with increased surface area. This ensures that that overall treatment volume is maintained, and evaporation and evapotranspiration achieved. The capacity calculations submitted for the swales have demonstrated adequate storage for this purpose.

Scratch areas will be underlined with an impermeable membrane to ensure that all scratch area drainage is captured and directed to the swales. Drainage will be conveyed to the swales via solid pipes. Two swales in parallel will be installed, operating on a first flush separator principle. The first swale will treat the 'first flush' containing most of the dust and nutrients, having a longer period of contact with the grass sward and provide better treatment. The first flush principle is acceptable provided the swales are well maintained. Much of the nutrient loading, particularly phosphorous, will be in the first swale and this may require a greater level of maintenance. A check dam will be provided in the second swale to retain flows for a short period following a storm event.

The south side of the housing units (free range area) will have an interceptor drain, cutting off drainage from higher ground and diverting it away from the poultry houses. The interceptor drain discharges to the Spittal Burn via a pumping station. This is authorised separately by The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (as amended), General Binding Rule 21.

The second swale will be provided with a high-level overflow to the interceptor drain via solid pipe. The high-level overflow will be fitted with a bund that can be closed off to prevent a discharge to the interceptor drain in the event of a pollution incident on site and create additional retention within the swale during an emergency.

The swales will be fenced off to restrict poultry access.

A sheet swale is to be installed to collect and treat run-off from the access road. The sheet swale has been included in the surface water drainage capacity calculations and will be directed to the parallel swale system via solid pipe.

The installation of a Sustainable Drainage System to treat surface and yard runoff via new swales adheres to the guidelines in the CREW Rural SuDS Guide, considered BAT for IA permitted installations.

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

There shall be no direct point source emissions to groundwater as a consequence of this application. The applicant has demonstrated that the swales are designed in line with SEPA advice and are sufficiently sized. If maintained properly, they will provide sufficient treatment of lightly contaminated run off and therefore this is not considered to be a point source discharge to groundwater.

SEPA has assessed as satisfactory the Site & Baseline Report submitted with the application subsequent to further clarifications. This report evaluates past potential contamination and future pollution risks to both soil and groundwater (please see Section 5.20 of this Decision Document).

5.5 Implications of the Application on - Fugitive Emissions to Air (BAT 1 & 11)

There are a few potential fugitive emissions to air. These include the release of dust and ammonia during cleaning or opening of the housing units for fallen stock removal, and from the birds themselves. SEPA accepts that some fugitive releases are unavoidable, for example, unplanned releases due to an unforeseen incident; others such as poor cleaning practices can be controlled through the relevant management techniques. SEPA views fugitive releases to air from these activities as an indication of process or maintenance issues and would require any defects to be reported and rectified as soon as possible.

Feed silos will be fitted with cyclone particle containment and mitigation to contain dust emissions as per the requirement in BAT 11.

Although not specifically covered by conditions within the permit, maintenance issues are covered by the PPC Regulations under Regulation 22 which requires the use of BAT. SEPA seeks to reduce these occurrences by requiring operators to record maintenance issues and demonstrate a high degree of environmental management over the activities they undertake. SEPA has a number of regulatory instruments it can use to gain compliance should the operator fail to comply.

SEPA does not have any specific policies in relation to bioaerosols from IA processes. There are currently no health criteria values available for interpreting the results of bioaerosol monitoring. Routine monitoring would be required at receptors within 250 metres should appropriate criteria for assessment be identified.

5.6 Implications of the Application on - Fugitive Emissions to Water (BAT 1 & 6)

There are several potential sources which could lead to fugitive emissions to water. These include, poorly maintained surfaces and drainage systems, bird delivery and collection, and lack of care during cleaning of the housing units, all of which can lead to contamination of surface waters.

SEPA views fugitive releases as avoidable and can usually link these incidents to either operational error or negligence. SEPA seeks to reduce these occurrences by requiring the permit holder to implement BAT and to provide training to relevant staff in environmental issues, exercising a high degree of environmental management, and continual maintenance of the activities they undertake.

The applicant is installing SuDS which has been designed to be fit-for-purpose and meets BAT.

5.7 Implications of the Application on – Emissions to Land (BAT 7 & 20)

In the case of free-ranging hens, SGRPID considers that deposition on a range will be constant across the whole area. In order to ensure that an installation is BAT and that an Operator is taking all appropriate preventative measures against pollution in a NVZ, the applicant is required to demonstrate that deposition on the ranging area is in accordance with the limit advised by SGRPID as 170 kg N/Ha under the Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008.

The entire ranging area will be included in the installation boundary. The application initially indicated a range area of 32 hectares but after deducting the footprint of buildings, for 64,000 birds to meet the limit of 170 kg N/Ha the applicant was required to increase the range area to at least 40 hectares.

The manure collected from the housing at least twice a week on manure belts will be spread to land as organic fertiliser outwith the installation boundary. Washwater is collected in below ground tanks prior to being spread on land outwith the installation boundary. The spreading to land of manure and washwater outwith the installation boundary is covered by the Water Environment (Controlled Activities) (Scotland) Regulations 2011, General Binding Rule 18 (GBR 18).

A disinfectant wheel-spray applied via knapsack to vehicles entering the site will be available at the farm gate. The nature of the application means that little to no disinfectant is absorbed into the unmade ground on the access road.

5.8 Implications of the Application on – Odour (BAT 1, 12 & 13)

SEPA has identified potential odour issues from this intensive poultry farm. These include ammonia and odours from chlorinated cleaning materials or disinfectants to clean the housing units.

SEPA acknowledges that odour from intensive agriculture installations can give rise to complaints and requires operators to undertake odour assessments, and to formulate and implement an Odour Management Plan to reduce the impact on the local environment.

BAT 1 requires the permit holder to produce an Odour Management Plan having regard to BAT 12 detailing odour techniques and reduction of odour emissions in accordance with BAT 13. The permit will require that offensive odours not be emitted beyond the site boundary.

5.9 Implications of the Application on – Management (BAT 1 & 2)

Good site management is a requirement not only of the PPC Regulations & BREF but also the Food Safety Act 1990, regulated by the Food Standards Agency, and the Animal Welfare Act 2006. Agricultural installations are subject to regulatory controls requiring Operators to operate installations to a high standard both to ensure welfare of animals and to protect products entering the food chain.

BAT 1 requires that the permitted activity is operated in accordance with an environmental management system (EMS). The BREF requires that in order to improve the overall environmental performance, the EMS should incorporate the following key features:

- Management commitment
- Environmental policy
- Financial planning and investment
- Relevant procedures (training, record keeping, maintenance, emergency procedures)
- Checking performance (monitoring, preventative action, auditing)
- Review
- Continual improvement
- Benchmarking
- Noise Management Plan
- Odour management Plan

BAT 2 requires good housekeeping to prevent or reduce the environmental impact and improve overall performance. This includes training, routine maintenance and an emergency plan.

The applicant has indicated that the installation will be operated in full compliance with Section 2.1 of SFIRs requiring an appropriate person and deputy, a management system, competent staff, and record keeping.

5.10 Implications of the Application on - Raw Materials

Chemicals:

Chemicals used in poultry rearing include cleaning and disinfection chemicals, pesticides, rodenticides, herbicides, insecticides and fungicides. All of these chemicals are required to be DEFRA-approved. Chemicals will be delivered to Easter Meathie Free Range Egg Farm and either stored or brought onsite solely for cleaning and then removed. Once onsite chemicals will be kept in the chemical storage area in bunded containers within the Central Service Area of the poultry unit. Dosage into working solutions will take place in the secure Central Service Area (no drains). Procedures are in place to absorb any spillage and ensure appropriate disposal.

Veterinary Medicines:

Veterinary medicines are routinely brought onto the site as needed and stored in a secure, refrigerated store within the Central Services Area. Medicines will be dosed into working solutions in a secure area (no drains). Procedures are in place to absorb any spillage and ensure appropriate disposal.

Agricultural Fuel Oil:

Agricultural fuel oil (also known as red diesel) is stored within the bunded generator itself and there is no separate storage on site. The generator will be sited on a concrete plinth. The fuel storage is compliant with The Water Environment (Miscellaneous) (Scotland) Regulations 2017.

Other Fuel Oils:

Other fuels used for site machinery such as mowers and strimmer's will be stored in small quantities (5 litre containers) in a secure area. There is a filling protocol in place to ensure machinery is filled away from the site drainage system. Emergency absorbent material will be onsite in the event of an accidental spill. Most fuel will be brought onto the site as needed.

Water:

Water is sourced from the mains network and stored in overhead tanks in the Central Services Area. Water is used to supply drinking water to the birds and for washing down the housing units at depletion.

Feed (BAT 3 & 4):

Feed will be supplied to the site, pre-mixed, into 4 fully enclosed silos each fitted with cyclone particle containment and mitigation. Feed will then be transported into the feed chain systems within the units by augers. Any feed spillages will be cleared up immediately to prevent any potential contamination of ground water or watercourses and to deter pests. Rations are formulated by poultry nutritionists. Feed specifications are created to minimise the amount of nitrogen and phosphorous excreted by the birds over the flock cycle by optimising crude protein output and feed utilisation. SEPA is satisfied that this meets the requirements of SFIR and BAT.

Litter:

Up to 20 tonnes of wood chips will be used as bedding litter at the beginning of each flock cycle. Litter is brought onsite as required and no additional litter is stored onsite.

5.11 Implications of the Application on - Raw Materials Selection

All applicants applying for PPC Part A permits are required to examine their Raw Materials usage and seek ways to reduce their impact on the environment. The standard permit condition requiring the formal assessment of resource utilisation on site will require the operator to identify where any efficiencies can be made and demonstrate continuing improvement.

5.12 Implications of the Application on - Waste Minimisation Requirements

Standard permit conditions require the operator to minimise waste and where possible develop and implement recycling or recovery strategies. Records are required to be kept on site of all waste streams and the source, quantity and disposal routes taken. This data will be reviewed every 4 years in the resource efficiency report required in the permit.

It is not anticipated that there will be much waste generated by the site. Packaging such as plastic, paper and cardboard will be collected and stored in small bins in the yard outside the Central Service Area and sent for recycling as appropriate.

5.13 Implications of the Application on - Water Use (BAT 5)

Water use within the food production sector is primarily an animal welfare issue as the operator of the installation is required under other legislation to provide an adequate supply of clean water for both the welfare of the birds and to undertake adequate cleaning of vehicles. It is up to the operator to demonstrate the use of BAT to minimise water usage, but SEPA does directly regulate water use through permit conditions requiring the operator to minimise water consumption and explore options for minimisation, and to report consumption in the resource efficiency report.

The greatest volume of water consumed is drinking water for the birds. Fresh mains water will be delivered to poultry via nipple line drinkers with drip collection cups to prevent spillages (as outlined in the SFIR and BAT standards) thereby reducing wastage and ensuring dry litter.

Water is also used for cleaning the poultry units at the end of the cycle. The housing units are washed down and disinfected before the introduction of the next flock.

5.14 Implications of the Application on – Waste Handling, Waste Recovery or Disposal

An underground washwater storage tank will be used to collect contaminated water from the poultry housing cleaning process. The washwater will be spread to land outwith the permitted installation. The washwater tank must be inspected routinely to ensure its integrity.

Foot washes are located at various locations around the site and spent disinfectant is emptied into the underground washwater tank. Where a disinfectant or effluent from cleaning may contain list I or II substances, washwater must be exported from site and disposed of at a suitably licenced facility. When a disinfectant does not contain list I or II substances, washwater can be spread to land in accordance with GBR 18.

Mortalities will be removed daily to a secure, vermin proof freezer in the Central Services Area. Final removal will be by registered contractors under the fallen stock scheme. All disposal of carcasses will be undertaken in accordance with the Animal By-Products (Enforcement)(Scotland) Regulations 2013.

Manure will be removed from the poultry housing units via manure belts into trailers 2-3 times per week and spread to land outwith the permitted installation.

The volume of other wastes stored on the site is minimal and all will be considered in the relevant section of the resource efficiency assessment required under the standard permit condition. The onus of Duty of Care shall apply to all waste management at the installation.

5.15 Implications of the Application on – Energy (BAT 8)

A computer-controlled system maintains the temperature within the housing units. This is directly linked to the ventilation system to prevent over-heating and lack of free ventilation. SEPA recognises that energy usage is dependent on several factors outwith the control of the operator who has to maintain the welfare of the birds in extremes of weather.

A permit condition requiring the formal systematic assessment of energy consumption on site will require the operator to identify where efficiencies can be made.

The site will be powered by solar panels and supplemented by mains grid electricity. A standby diesel generator will supply back-up power in the event of a mains outage.

5.16 Implications of the Application for - Accidents and their Consequences (BAT 1)

The PPC Regulations specifically preclude SEPA from adding conditions to a Permit regarding the Health and Safety of Staff or workers on-site; however should an accident or incident occur that is likely to pose a risk to the environment or harm to human health in the wider community then SEPA would require, under the conditions of the permit, that not only must the Operator take action to limit the immediate

environmental impact but where necessary implement changes to try to ensure that the event does not happen again.

In general, all accidents or incidents likely to cause pollution and all complaints to the site regarding nuisance emissions are required by Schedule 7 of the Permit to be recorded and dependent on the severity, notified to SEPA. Emergency preparedness and response (incident prevention and mitigation) are required as per BAT 1 as part of the Environmental Management System for the site.

5.17 Implications of the Application for – Noise (BAT 9 & 10)

Noise at the permitted installation is covered by Section 2.9 of the SFIR which is considered by SEPA to meet BAT Conclusions 9 & 10 which the operator is required to have regard to when operating an intensive agriculture site under the PPC Regulations.

The Permit and SFIR recognise that noise can give rise to complaints. The operator is required to undertake noise assessments and produce a Noise Management Plan to prevent or minimise the impact on the local environment.

The predominant source of noise from poultry housing units is generated from the ventilation systems. Other sources of noise related to this type of activity can include vehicle movements in and around the site and the placement and removal of the birds. The latter two are considered unlikely to cause issues as these activities will take place for such short durations as well as being infrequent. Routine maintenance of fans will also prevent noise and the noise management plan will address any issues that should arise and will be updated as stipulated in the permit.

5.18 Implications of the Application for – Monitoring (BAT 24, 25, 26, 27 & 29)

SEPA places a lot of emphasis on self-monitoring and record-keeping as keys to the successful running of a PPC installation. The operator is required within the permit to undertake odour and noise assessments. General monitoring of the site is also covered in the Permit to assess operational conditions and environmental performance.

Various permit conditions require the operator to monitor the level of inputs and the volume of outputs and to consider how changes made benefit the environment. The 2017 BREF introduces the following additional monitoring requirements:

1. The total nitrogen and total phosphorus excreted in manure
2. Ammonia emission to air
3. Dust emissions
4. Process parameters

The European Commission during deliberations around the revised BREF, accepted the proposal from the UK technical Working Group to estimate emissions by using DEFRA approved emission factors to comply with the monitoring requirements for 1-3 identified above.

Process parameters include water consumption, energy consumption, fuel consumption, incoming and outgoing bird numbers, feed consumption and manure generation. This is already well documented and will be formally required via the resource utilisation permit condition.

5.19 Implications of the Application for – Closure

Standard conditions in the permit will be appropriate for this installation including the production of a Decommissioning Plan. The operator has agreed to meet Section 2.15 of the SFIR for Decommissioning.

In order to ensure that the site can be returned to its pre-PPC Permit state, SEPA have required the applicant detail any pre-application problems prior to permitting so that a site surrender report can be compared with the Site Condition and Baseline Reports. Surrender of the permit is by an application to

SEPA who have to be satisfied that the requirements of Regulation 19 of the PPC Scotland Regulations 2012 (as amended) are complied with.

As per the PPC Regulations the Applicant shall need to remediate the site where required to the levels cited in the baseline report (please see Section 5.20 below for more information).

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

As per Regulation 48 of the PPC Regulations a Site Report and a Baseline Report was submitted with the application. SEPA has assessed both reports as satisfactory. These reports evaluate past potential contamination and future pollution risks to both soil and groundwater.

A single round of surface water sampling was undertaken at three monitoring points on the Spittal Burn. The locations of the monitoring points and the analytical suite are acceptable. Nitrate levels were moderately elevated but below the potable limit. As the site is in an NVZ elevated Nitrate levels would be expected.

There is a CAR authorisation for an abstraction from Spittal Burn approximately 175m downstream of the pumping station discharge from the PPC site (CAR/L/1004707 Kinreich Farm, u/s Abs from Spittal Burn @ Moss Lands of Meathie). The operator's site management systems should include contingency plans for appropriate action in the event of a pollution incident, including notifying downstream abstractors in a timely manner.

Due to the location of the site within an NVZ and the nearby downstream abstraction, water quality monitoring will be set annually in the permit. Soil sampling and analyses will be standard (every 10 years).

5.21 Implications of the Application for - Consideration of BAT

SEPA published its view of indicative BAT relating to intensive agriculture operation in its Standard Farming Rules (SFIRs). SFIRs are based on the BAT Reference Document (BREF) for Intensive Agriculture Installations published by the European IPPC Bureau in 2017. The SFIRs have been used throughout this permit variation to benchmark farming activities. The application indicates that the installation will be operated in accordance with Best Available Techniques (BAT).

6	OTHER LEGISLATION CONSIDERED
<i>Nature Conservation (Scotland) Act 2004 & Conservation (Natural Habitats &c.) Regulations 1994</i>	
Is there any possibility that the proposal will have any impact on sites designated under the above legislation? No	
Justification: Refer to Section 5.2 above.	
Screening distance(s) used: 10 kilometres as per the SEPA Nature Conservation Procedure Guidance (NCP-P-01).	
<i>Other legislation</i>	
Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008: The applicant demonstrated that the size of the ranging area is sufficient that deposition is in accordance with the limit of 170 kg N/hectare. See Section 5.7.	
The Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR) and Nitrates Directive:	

This primarily applies to land-spreading activities that will be taking place outwith the installation boundary. These will need to comply with GBR 18. See Section 5.7.

Foul drainage systems such as a septic tank to soakaway will be regulated separately under CAR and this will not form part of the permitted installation.

The swale system to treat surface water drainage has potential to impact groundwater and therefore SuDS design must be in accordance with CREW Rural SuDS Guide. See Section 5.3.

The Water Environment (Miscellaneous) (Scotland) Regulations 2017:

The requirements for the generator oil storage under these Regulations are met. See Section 5.10. consideration of oil storage as BAT. There are no conflicts with ongoing CAR regulation of this process.

Animal By-Products (Enforcement)(Scotland) Regulations 2013:

Regulates carcass disposal. Carcass storage is a is a Directly Associated Activity (DAA) in the permit. See Section 5.14

Medium Combustion Plant Directive (MCPD):

For all proposed plant >1MW regulated as DAA on IA installations, BAT will apply and SEPA should complete Local Air Quality Management and Nature Conservation Habitat screening. If required, SEPA will impose monitoring of emissions within 4 months and then every 3 years with ELVs from Process Guidance Note 1/3 or the MCPD. There is no plant >1MW on site at the time of permit issue.

Officer: CO

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? N/A

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? N/A

Officer: CO

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? N/A as new permit application.

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? No

Emission limit values - Air**Substance:** Ammonia**Relevant emission benchmarks:** BAT AEL's**ELV:** 0.02-0.13 kg NH₃/animal place/year**Emission point:** Poultry housing and ranging areas.

Rationale: BAT Associated Emission Limits (AELs) are a requirement introduced in the BREF. As part of the BREF review and 2017 publication of the BREF it was accepted by the Commission that operators could use emission factors to demonstrate compliance with the BAT AELs for ammonia. The emission factor used for a free-range aviary system is 0.108 kg NH₃/animal place/year, which is comfortably within the required range. The operator will be required to confirm on an annual basis that the DEFRA-emission factor still applies and that no changes have been made.

Substance: Total Nitrogen Excreted**Relevant emission benchmarks:** BAT AEL's**ELV:** 0.4-0.8 kg/animal place/year**Emission point:** Manure collection belts

Rationale: BAT AELs are a requirement introduced in the BREF. There are presently no approved emission factors, but it is expected that compliance will be demonstrated via mass balance using feed information and standard manure analysis.

Substance: Total Phosphorus Excreted**Relevant emission benchmarks:** BAT AEL's**ELV:** 0.10-0.45 kg/animal place/year**Emission point:** Manure collection belts.

Rationale: BAT AELs are a requirement introduced in the BREF. There are presently no approved emission factors, but it is expected that compliance will be demonstrated via mass balance using feed information and standard manure analysis.

10 PEER REVIEW**Has the determination and draft permit been Peer Reviewed?** Yes**Name of Peer Reviewer and comments made:**

- Add in function of heat exchanger.
- Add comment on detailed modelling undertaken as part of planning application.
- Remove reference to Ringleman shade 1 and no visible smoke from the generator requirement.
- Add in BAT 11 – cyclones on feed silos.

11 FINAL DETERMINATION

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: CO

12 REFERENCES AND GUIDANCE

Standard Farming Installation Rules (SEPA's general sector Guidance)

Nature Conservation Procedure NCP-P-01

The assessment of potential impacts on designated sites of atmospheric emissions of ammonia from PPC intensive agriculture installations NCP-P-02

Sniffer ER26: Final Report on the update of the Simple Calculation of Atmospheric Impact Limits (SCAIL) (2014)

BAT Reference Document (BREF) BAT Conclusions for the Intensive Rearing of Poultry or Pigs (2017)

Rural Sustainable Drainage Systems – A practical design and build guide for Scotland's farmers and landowners (2016)

SEPA Guidance on Consultation under PPC (IED-PG-01-04)