1.1. Environmental management systems (EMS)			
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:			
	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
1.	commitment of the management, including senior management;	Applicable	The farm is owned and operated by Michael Noel O' Connor, a second generation poultry farmer. He is also the responsible person and lives close to the farm at Rathcahill West, Templeglantine, Newcastle West, Co. Limerick. Michael Noel O' Connor has at no stage been convicted under the EPA Act 1992, as amended, the Waste Management Act 1996 as amended, the Local Government (water pollution) Acts 1977 and 1990 or the Air Pollution Act 1987 and is committed to the implementation and adherence of the EMS onsite. An EMS is implemented within the site. This includes the identification and monitoring of various environmental aspects on site, mainly the monitoring of: • water (surface and ground), • noise, • air, • waste management The EMS implements measures and procedures for the prevention of accidents in the carrying out of day to day operations with regards to accidental emissions and emergency situations which may arise including for the training, awareness of employees with regards to the EMS plan i.e. toolbox talks. The EMS also includes for provisions with regards to accidental emissions and emergency situations which may arise outside of normal working hours. The EMS provides details relating to the documentation of all incidents and all environmental
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;		monitoring carried out. Michael O' Connor keeps accurate records and management insures that work is carried out professional and that records are appropriately maintained. All the figures in relation to performance are calculated on a yearly basis. Records of growth rates, food conversion efficiency and mortality in each stage of the growth help to ensure that efficiency is maintained. These measurements together with the weight determine the value of the end product. Vermin baiting programmes are followed, according to An Bord Bia standards. Records of these programmes are kept in the flock records. The management of the farm maintains detailed waste management records onsite for disposal of animal carcasses, veterinary waste, general refuse etc. A record is also maintained of poultry manure to Custom Compost, Co. Wexford. An Emergency Response Procedure has been put in place for this facility. This procedure sets out the contact numbers of all the key personnel on-site, who are the responsible people. It also identifies the emergency contact numbers of relevant contractors and specialists that may be required in the event of an emergency. It further includes contact numbers for local Gardai, fire brigade and doctors. This procedure is laminated and erected at a number of key locations around the facility. A register is in place to record all notifiable events on-site in the event of such an incident. A review of both the EMS and the Emergency Response Procedures are carried out on a continuous basis. All poultry units require a major capital investment every 10-20 years to keep them efficient and pleasant places to work. So long as this investment is made
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 (see BAT 9);		
11.	implementation of an odour management plan (see BAT 12).		

			there is no reason that a unit of this type could not operate for up to 40 years. A Closure Restoration and Aftercare Management Plan, Environmental Liability Risk Assessment and Financial Provision Plan is proposed to be carried out on the Unit. Depopulation of a unit occurs when a notifiable disease becomes so rampant on a unit that poultry production becomes uneconomic. In the unlikely event of such a disease outbreak, the Department of Agriculture takes total control. A noise management plan has been prepared, and submitted to the EPA accompanying an IE Licence Application. There is no proposed monitoring for dust or odour at the Poultry Unit. If any complaints are received, a follow-up investigation will be initiated and all results made available to the Local Authority and EPA for inspection.

1.2 Good housekeeping

BAT 2. In order to prevent or reduce the environmental impact and improve overall performance, BAT is to use all the techniques given below.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	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.	Applicable	The buildings and its layout is state of the art for the industry. A thorough review was undertaken of the best available techniques to minimise emissions from the unit and to maximise welfare conditions for animals and staff alike on-site during the initial planning stages. On site activities will only be carried out during normal working hours i.e. 08:00 – 18:00. All storm water from the yard is diverted via a clean water drainage system to a single storm water

			monitoring point indicated as SW1 on the Site Layout Plan which discharges to a small drainage ditch. This monitoring point is inspected weekly and sampled quarterly for COD at an Independent Laboratory. Poultry Litter The poultry litter from this unit is supplied to Custom Compost of Ballyminaun Hill, Gorey, Co. Wexford for use in the production of mushroom compost. The litter is removed off site on the same day as the shed cleaning is carried out. Soiled water Soiled water arising from the washing down of the accommodation houses is utilised on the applicant's land adjacent to the unit and amounts to approximately 5 vacuum tanks a year. The application of the soiled water is regulated under the EU (Good Agricultural Practice for the Protection of Waters) 2014 S.I. 31 of 2014. On site there are currently 2 no 37.6 m3 precise underground effluent tanks which hold all washings from the poultry houses and soiled water from the yards. This tank's construction conforms to the Department of Agriculture, Food and the Marine's specification S123 Minimum Specification for Bovine Livestock Units and Reinforced Tanks - March 2006. A working house-keeping plan is in place.
b.	Educate and train staff, in particular for: — relevant regulations, livestock farming, animal health and welfare, manure management, worker safety; — manure transport and landspreading; — planning of activities; — emergency planning and management; — repair and maintenance of equipment.	Applicable	Toolbox talks are carried out regularly on site between staff and management in relation to the running of the Unit.
c.	Prepare an emergency plan for dealing with unexpected emissions	Applicable	An Emergency Response Procedure has been put in

	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).		place for this facility. This procedure sets out the contact numbers of all the key personnel on-site, who are the responsible people. It also identifies the emergency contact numbers of relevant contractors and specialists that may be required in the event of an emergency. It further includes contact numbers for local Gardai, fire brigade and doctors. This procedure is laminated and erected at a number of key locations around the facility. A register is in place to record all notifiable events on-site in the event of such an incident. A review of these procedures is carried out on a continuous basis.
d.	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.	Applicable	The applicant implements and maintains a comprehensive monitoring and maintenance programme on site to provide maximum protection for the environment, animals and staff alike.
e.	Store dead animals in such a way as to prevent or reduce emissions.	Applicable	Bird carcasses will be temporarily stored in a covered sealed metal skip for transport and disposal to a licensed rendering plant at regular intervals. A register is maintained on site of all collections of animal carcasses

1.3 Nutritional management

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 formulation and nutritional strategy which includes one or a combination of the techniques given below.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Reduce the crude protein content by using an N-balanced diet based on the energy needs and digestible amino acids.	Not applicable	Not in place
b.	Multiphase feeding with a diet formulation adapted to the specific requirements of the production period.		
c.	Addition of controlled amounts of essential amino acids to a low		

	crude protein diet.		
d.	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.			
a.	Multiphase feeding with a diet formulation adapted to the specific requirements of the production period.	Not applicable	Not in place
b.	Use of authorised feed additives which reduce the total phosphorus excreted (e.g. phytase).		
c.	Use of highly digestible inorganic phosphates for the partial replacement of conventional sources of phosphorus in the feed		
1.4. Efficient use of water			
BAT 5. In order to use water efficiently, BAT is to use a combination of the techniques given below.			
	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Keep a record of water use.	Applicable	Records are kept of water usage
b.	Detect and repair water leakages.	Applicable	The applicant implements and maintains a comprehensive monitoring and maintenance programme on site to provide maximum protection for the environment, animals and staff alike.
c.	Use high-pressure cleaners for cleaning animal housing and equipment.	Applicable	Power-washers in place and in use.
d.	Select and use suitable equipment (e.g. nipple drinkers, round drinkers, water troughs) for the specific animal category while ensuring water availability (ad libitum).	Applicable	Nipple type drinkers are in place. Monitoring is place to ensure there is sufficient water available.
e.	Verify and (if necessary) adjust on a regular basis the calibration of the drinking water equipment.	Applicable	The applicant implements and maintains a comprehensive monitoring and maintenance programme on site to provide maximum protection for the environment, animals and staff alike.
f.	Reuse uncontaminated rainwater as cleaning water.	Not applicable	Not in place. The Applicant ensures that water usage is kept to a minimum due to the cost of pumping water to wash houses. However, where the Applicant feels that financial gain can be made, the installation of a rainwater harvesting system will be suggested.

1.5. Emissions from waste water

BAT 6. In order to reduce the generation of waste water, BAT is to use a combination of the techniques given below.

	Technique	Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
a.	Keep the fouled yard areas as small as possible.	Applicable	
b.	Minimise use of water.	Applicable	The Applicant ensures that water usage is kept to a minimum due to the cost of pumping water to wash houses.
c.	Segregate uncontaminated rainwater from waste water streams that require treatment.	Applicable	All storm water run-off water from the existing site is collected via a clean storm water collection system and monitored quarterly for COD through monitoring point SW1.

BAT 7. In order to reduce emissions to water from waste water, BAT is to use one or a combination of the techniques given below.

a.	Drain waste water to a dedicated container or to a slurry store.	Applicable	All soiled water from the site is diverted to the storage tanks.
b.	Treat waste water.	Not applicable	No treatment is required
c.	Landspreading of waste water e.g. by using an irrigation system such as sprinkler, travelling irrigator, tanker, umbilical injector.	Applicable	Soiled water arising from the washing down of the accommodation houses is utilised on the applicant's land adjacent to the unit and amounts to approximately 5 vacuum tanks a year. The application of the soiled water is regulated under the EU (Good Agricultural Practice for the Protection of Waters) 2014 S.I. 31 of 2014.

1.6. Efficient use of energy

BAT 8. In order to use energy efficiently in a farm, BAT is to use a combination of the techniques given below.

	Technique	Applicability Assessment (describe how the technique applies or not to your installation)	State whether it is in place or state schedule for implementation
a.	High efficiency heating/cooling and ventilation systems.	Applicable	Gas heating is installed in each poultry house.
b.	Optimisation of heating/cooling and ventilation systems and management, especially where air cleaning systems are used.	Applicable	The applicant implements and maintains a comprehensive monitoring and maintenance programme on site to provide maximum protection for the environment, animals and staff alike.
c.	Insulation of the walls, floors and/or ceilings of animal housing.	Applicable	The farm buildings are built taking heed of Best Available Techniques which involve the inclusion of a

			high standard of insulation which reduces the requirements for heating and fossil fuel consumption.
d.	Use of energy-efficient lighting.	Applicable	All artificial lighting will be used in the accommodation houses, offices and outside yards and will be low energy lighting. Location of lighting will be strategically planned.
e.	Use of heat exchangers. One of the following systems may be used: 1. air-air; 2. air-water; 3. air-ground.	Not Applicable	Not in place
f.	Use of heat pumps for heat recovery.	Not Applicable	Not in place
g.	Heat recovery with heated and cooled littered floor (combideck system).	Not Applicable	Not in place
h.	Apply natural ventilation.	Applicable	There is no artificial ventilation in the accommodation houses.

1.7. Noise Emissions

BAT 9 is only applicable to cases where a noise nuisance at sensitive receptors is expected and/or has been substantiated.
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 the techniques given below.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Ensure adequate distances between the plant/farm and the sensitive receptors.	Applicable	Applicable Noise levels from the development are unlikely to be a nuisance. The main sources of noise on the development will be from the general farm operations at the site including site traffic, delivery of feed and collection of birds and litter. In addition, operations on site include feeding times and water systems. However, at a distance of 100 metres from the development noise levels are not greatly above ambient background noise levels. To date there has been no direct noise or odour related complaints made to the existing poultry unit.
b.	Equipment location		
c.	Operational measures.		
d.	Low-noise equipment.		
e.	Noise-control equipment.		
f.	Noise abatement.		

1.8. Dust emissions

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.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**

a.	Reduce dust generation inside livestock buildings. For this purpose, a combination of the following techniques may be used:	Applicable	There is no proposed monitoring for dust or odour at the Poultry Unit. In the event that dust or odour from the proposed development is creating an environmental nuisance. An ambient dust deposition survey will be carried out by a quality specialist and mitigation measures will be developed to eliminate the nuisance. In the event of an odour nuisance an investigation following the EPA Air Guidance on Odour Assessment (AG5) will be initiated. The houses operate on a batch system. Following de-population from the previous batch, the houses are cleaned of litter, washed and disinfected. The Applicant utilises a bedding of wood shaving in the 3 no accommodation houses. The houses are then repopulated with day old chicks. These are fed and watered using an automatic system.
1.	1. Use coarser litter material (e.g. long straw or wood shavings rather than chopped straw); 2. Apply fresh litter using a low-dust littering technique (e.g. by hand); 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; 6. Design and operate the ventilation system with low air speed within the house.	Applicable	
b.	Reduce dust concentration inside housing by applying one of the following techniques:	Not application	
	1. Water fogging;		
	2. Oil spraying;		
	3. Ionisation.		
c.	Treatment of exhaust air by an air cleaning system, such as	Not applicable	
	1. Water trap;		
	2. Dry filter;		

	3. Water scrubber;		
	4. Wet acid scrubber;		
	5. Bioscrubber (or biotrickling filter);		
	6. Two-stage or three-stage air cleaning system;		
	7. Biofilter.		

1.9. Odour emissions

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:

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
	i. a protocol containing appropriate actions and timelines; ii. a protocol for conducting odour monitoring; iii. a protocol for response to identified odour nuisance; iv. an odour prevention and elimination programme designed to e.g. identify the source(s), to monitor odour emissions (see BAT 26), to characterise the contributions of the sources and to implement elimination and/or reduction measures; v. a review of historical odour incidents and remedies and the dissemination of odour incident knowledge. The associated monitoring is in BAT 26.	Not applicable	There is no proposed monitoring for dust or odour at the Poultry Unit. In the event that dust or odour from the proposed development is creating an environmental nuisance. An ambient dust deposition survey will be carried out by a quality specialist and mitigation measures will be developed to eliminate the nuisance. In the event of an odour nuisance an investigation following the EPA Air Guidance on Odour Assessment (AG5) will be initiated.

BAT 12 is only applicable to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated.

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.

a.	Ensure adequate distances between the farm/plant and the sensitive receptors.	Not applicable	There is no proposed monitoring for dust or odour at the Poultry Unit. In the event that dust or odour from the proposed development is creating an environmental nuisance. An ambient dust deposition survey will be carried out by a quality specialist and mitigation measures will be developed to eliminate the nuisance. In the event of an odour nuisance an investigation following the EPA Air Guidance on Odour Assessment (AG5) will be initiated.
b.	Use a housing system which implements one or a combination of the following principles: — keeping the animals and the surfaces dry and clean (e.g. avoid feed spillages, avoid dung in lying		

	areas of partly slatted floors); — reducing the emitting surface of manure (e.g. use metal or plastic slats, channels with a reduced exposed manure surface); — removing manure frequently to an external (covered) manure store; — reducing the temperature of the manure (e.g. by slurry cooling) and of the indoor environment; — decreasing the air flow and velocity over the manure surface; — keeping the litter dry and under aerobic conditions in litter-based systems.		
c.	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 (e.g. exhaust air above roof level, stacks, divert air exhaust through the ridge instead of through the low part of the walls); — increasing the vertical outlet ventilation velocity; — effective placement of external barriers to create turbulence in the outgoing air flow (e.g. vegetation); — adding deflector covers in exhaust apertures located in low parts of walls in order to divert exhaust air towards the ground; — dispersing the 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.		

d.	Use an air cleaning system, such as: 1. Bioscrubber (or biotrickling filter); 2. Biofilter; 3. Two-stage or three-stage air cleaning system.		
e.	Use one or a combination of the following techniques for storage of manure:		
	1. Cover slurry or solid manure during storage;		
	2. Locate the store taking into account the general wind direction and/or adopt measures to reduce wind speed around and above the store (e.g. trees, natural barriers);		
	3. Minimise stirring of slurry.		
f.	Process manure with one of the following techniques in order to minimise odour emissions during (or prior to) landspreading:		
	1. Aerobic digestion (aeration) of slurry;		
	2. Compost solid manure;		
	3. Anaerobic digestion.		
g.	Use one or a combination of the following techniques for manure landspreading:		
	1. Band spreader, shallow injector or deep injector for slurry landspreading;		
	2. Incorporate manure as soon as possible.		

1.10. Emissions from solid manure storage

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.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Reduce the ratio between the emitting surface area and the volume of the solid manure heap.	Not Applicable	The poultry litter from this unit is supplied to Custom Compost of Ballyminaun Hill, Gorey, Co. Wexford for use in the production of mushroom compost. The litter is removed off site on the same day as the shed cleaning is carried out.
b.	Cover solid manure heaps.		
c.	Store dried solid manure in a barn.		

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.

a.	Store dried solid manure in a barn.	Not Applicable	The poultry litter from this unit is supplied to Custom Compost of Ballyminaun Hill, Gorey, Co. Wexford for use in the production of mushroom compost. The litter is removed off site on the same day as the shed cleaning is carried out.
b.	Use a concrete silo for storage of solid manure.		
c.	Store solid manure on solid impermeable floor equipped with a drainage system and a collection tank for the run-off.		
d.	Select a storage facility with a sufficient capacity to hold the solid manure during periods in which landspreading is not possible.		
e.	Store solid manure in field heaps placed away from surface and/or underground watercourses which liquid run-off might enter.		

1.11. Emissions from slurry storage

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.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Appropriate design and management of the slurry store by using a combination of the following techniques:	Applicable	Soiled water Soiled water arising from the washing down of the accommodation houses is utilised on the applicant's land adjacent to the unit and amounts to approximately 5 vacuum tanks a year. The application of the soiled water is regulated under the EU (Good Agricultural Practice for the Protection of Waters) 2014 S.I. 31 of 2014. On site there are currently 2 no 37.6 m3 precise underground effluent tanks which hold all washings from the poultry houses and soiled water from the yards. This tank's construction conforms to the Department of Agriculture, Food and the Marine's specification S123 Minimum Specification for Bovine Livestock Units and Reinforced Tanks - March 2006. A working house-keeping plan is in place.
	1. Reduce the ratio between the emitting surface area and the volume of the slurry store;		
	2. Reduce wind velocity and air exchange on the slurry surface by operating the store at a lower level of fill;		
	3. Minimise stirring of slurry.		
b.	Cover the slurry store. For this purpose, one of the following techniques may be used:		
	1. Rigid cover;		
	2. Flexible covers;		
	3. Floating covers such as: — plastic pellets; — light bulk materials; — floating flexible covers;		

	— geometrical plastic tiles; — air-inflated cover; — natural crust; — straw.		
c.	Slurry acidification.	Not applicable	Not required onsite
BAT 17. In order to reduce ammonia emissions to air from an earth-banked slurry store (lagoon), BAT is to use a combination of the techniques given below. Not applicable			
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. Not applicable			
1.12. On farm processing of manure			
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.			
	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
Not applicable			
1.13. Manure landspreading			
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.			
	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Assess the manure receiving land to identify risks of run-off, taking into account: — soil type, conditions and slope of the field; — climatic conditions; — field drainage and irrigation; — crop rotations; — water resources and water protected zones.	Applicable	The following mitigation measures with regards to land-spreading: In order to minimise risks to water it is essential that careful planning is done regarding the application of soiled water with consideration to weather, drain-flow, soil conditions, nutrient requirements and field situation to reduce the risk of the soiled water reaching water. Managed and used in this way, the soiled water produced at this facility will not have any adverse impact on environmental parameters either inside or outside the site.
b.	Keep sufficient distance between manure spreading fields (leaving an untreated strip of land) and:		

	1. areas where there is a risk of run-off to water such as watercourses, springs, boreholes, etc.; 2. neighbouring properties (including hedges).		In order to adhere to the relevant legislation and to minimise the risk of pollution associated with the landspreading of the soiled water, the following measures are followed: The soiled water is applied to the land in as accurate and uniform a manner as possible, using spreading machinery correctly calibrated and in good condition. The soiled water should only be applied using a low trajectory spreaders, band spreaders or injection methods. Spray drift must be avoided and so the use of machinery with an upward facing splashplate is not permitted. The soiled water is not spread during the periods outlined in schedule 4 of the Good Agricultural Practice for Protection of Waters 2010, including amendments S.I. 125 of 2011 and S.I. 134 of 2014 or when heavy rain is forecast within the next 48 hours. The quantity of soiled water applied to the land will not exceed the nitrogen and phosphorus requirements of the crop, or those detailed in the Nutrient Management Plan. The amount of organic matter applied to land, together with that deposited by livestock, cannot exceed an amount equalling 170 kg per hectare per annum. Spreading is not undertaken on lands delineated by Source Protection Areas where areas of extreme vulnerability classification are determined within the Outer Source Protection Area. Areas of high, moderate, or low vulnerability within the Outer Source Protection are subject to organic loading rates, as specified in the GSI Response Matrix for landspreading of organic waste. Spreading of organic fertiliser is not acceptable on lands within the area delineated by the Inner Source Protection Area as stated in the GSI Response Matrrix for Landspreading of Organic Waste. Organic matter cannot be applied to the following: • waterlogged land • land which is flooded or likely to flood
c.	Avoid manure spreading when the risk of run-off can be significant. In particular, manure is not applied when: 1. the field is flooded, frozen or snow-covered; 2. soil conditions (e.g. water saturation or compaction) in combination with the slope of the field and/or field drainage are such that the risk of run-off or drainage is high; 3. run-off can be anticipated according to expected rainfall events.		
d.	Adapt the manure landspreading rate taking into account the nitrogen and phosphorus content of the manure and taking into account the characteristics of the soil (e.g. nutrient content), the seasonal crop requirements and weather or field conditions that could cause run-off.		
e.	Synchronize manure landspreading with the nutrient demand of crops.		
f.	Check the spreading fields at regular intervals to identify any sign of run-off and properly respond when necessary.		
g.	Ensure adequate access to the manure store and that loading of manure can be done effectively without spillage.		
h.	Check that machinery for manure landspreading is in good working order and set at the proper application rate.		

			• frozen or snow covered land • steeply sloping ground • exposed bedrock • fields pipe or mole drained where the soil is cracked down to the drains or backfill • on fields that have been pipe or mole drained in the previous 12 months • on fields that have been sub-soiled over a pipe or mole drainage system in the previous 12 months • free-draining areas where the water-table is within 1m of the surface at the time of application No organic waste shall be spread within the following buffer zones: • Within 200m of an extraction point of water supply providing 100m3 or more of water per day, or serving 500 or more people • Within 100m of an extraction point of water supply providing 10m3 or more of water per day, or serving 50 or more people • Within 25m of an extraction point of any other water supply for human consumption and all wells • Within 20m of a lake shoreline or main river channel • Within 10m of any watercourse • Within 200m of any sensitive building • Within 100m of a dwelling house • Within 50m of any public building or amenity areas • Within 10m of any public road
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.			
a.	Slurry dilution, followed by techniques such as low-pressure water irrigation system.	Not applicable	Not applicable due to the minimal amount of wash water

b.	Band spreader, by applying one of the following techniques: 1. Trailing hose; 2. Trailing shoe.	Not applicable	Not applicable due to the minimal amount of wash water
c	Shallow injector (open slot).	Not applicable	Not applicable due to the minimal amount of wash water
d.	Deep injector (closed slot).	Not applicable	Not applicable due to the minimal amount of wash water
e.	Slurry acidification.	Not applicable	Not applicable due to the minimal amount of wash water
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.			
	Description Incorporation of manure spread on the soil surface is done by either ploughing or using other cultivation equipment, such as tines or disc harrows, depending on the soil type and conditions. Manure is completely mixed with soil or buried. Solid manure spreading is carried out by a suitable spreader (e.g. rota-spreader, rear discharge spreader, dual-purpose spreader). Slurry landspreading is carried out according to BAT 21.		
	Applicability Not applicable due to the minimal amount of wash water		
1.14. Emissions from the whole production process			
BAT 23. In order to reduce ammonia emissions from the whole production process for the rearing of pigs (including sows) or poultry, BAT is to estimate or calculate the reduction of ammonia emissions from the whole production process using the BAT implemented on the farm.			
	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
Not applicable due to the minimal amount of wash water			
1.15. Monitoring of emissions and process parameters			
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.			
	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	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.	Applicable	Low protein diets are being utilised on site.
b.	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.			
a.	Estimation by using a mass balance based on the excretion and the total (or total ammoniacal) nitrogen present at each manure management stage.	Not applicable	Not applicable due to the minimal amount of wash water and litter produced.
b.	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.		
c.	Estimation by using emission factors.		
BAT 26 is only applicable to cases where an odour nuisance at sensitive receptors is expected and/or has been substantiated. 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.			
a.	Calculation by measuring the dust concentration and the ventilation rate using EN standard methods or other methods (ISO, national or international) ensuring data of an equivalent scientific quality.	Not applicable	There is no proposed monitoring for dust or odour at the Poultry Unit. If any complaints are received, a follow-up investigation will be initiated and all results made available to the Local Authority and EPA for inspection.
b.	Estimation by using emission factors.		
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.			
a.	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 applicable	There is no proposed monitoring for dust or odour at the Poultry Unit. If any complaints are received, a follow-up investigation will be initiated and all results made available to the Local Authority and EPA for inspection.
b.	Control of the effective function of the air cleaning system (e.g. by continuously recording operational parameters or using alarm systems).		

BAT 29. BAT is to monitor the following process parameters at least once every year.			
a.	Water consumption.	Applicable	Michael O' Connor keeps accurate records. All the figures in relation to performance with regard to water usage, energy usage, fuel usage, feed consumption and waste water/litter production are calculated on a yearly basis. Records of growth rates, food conversion efficiency and mortality in each stage of the growth help to ensure that efficiency is maintained.
b.	Electric energy consumption.	Applicable	
c.	Fuel consumption.	Recording using e.g. suitable meters or invoices.	
d.	Number of incoming and outgoing animals, including births and deaths when relevant	Recording using e.g. existing registers.	
e.	Feed consumption.	Recording using e.g. invoices or existing registers.	
f.	Manure generation.	Recording using e.g. existing registers.	

3. BAT CONCLUSIONS FOR THE INTENSIVE REARING OF POULTRY

3.1. Ammonia emissions from poultry houses

3.1.1. Ammonia emissions from houses for laying hens, broiler breeders or pullets

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.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Manure removal by belts (in case of enriched or unenriched cage systems) with at least: — one removal per week with air drying; or — two removals per week without air drying.	Not applicable	The poultry litter from this unit is supplied to Custom Compost of Ballyminaun Hill, Gorey, Co. Wexford for use in the production of mushroom compost. The litter is removed off site on the same day as the shed cleaning is carried out.
b.	In case of non-cage systems:		
	Forced ventilation system and infrequent manure removal (in case of deep litter with a manure pit) only if used in combination with an additional mitigation measure, e.g.: — achieving a high dry matter content of the manure; — an air cleaning system.		
	1. Manure belt or scraper (in case of deep litter with a manure pit).		
	2. Forced air drying of manure via tubes (in case of deep litter with a manure pit)		
	3. Forced air drying of manure using perforated floor (in case of deep litter with a		

	manure pit).		
	4. Manure belts (in case of aviary).		
	5. Forced drying of litter using indoor air (in case of solid floor with deep litter).		
c.	Use of an air cleaning system, such as: 1. Wet acid scrubber; 2. Two-stage or three-stage air cleaning system; 3. Bioscrubber (or biotrickling filter).		

3.1.2. Ammonia emissions from houses for broilers

BAT 32. In order to reduce ammonia emissions to air from each house for broilers, BAT is to use one or a combination of the techniques given below.

	Technique	**Applicability Assessment (describe how the technique applies or not to your installation)**	**State whether it is in place or state schedule for implementation**
a.	Forced ventilation and a non-leaking drinking system (in case of solid floor with deep litter).	Not applicable	Not applicable
b.	Forced drying system of litter using indoor air (in case of solid floor with deep litter).	Not applicable	Not applicable
c.	Natural ventilation, equipped with a non-leaking drinking system (in case of solid floor with deep litter).	Applicable	Natural ventilation is utilised. Nipple type drinkers are in place.
d.	Litter on manure belt and forced air drying (in case of tiered floor systems).	Not applicable	Not applicable
e.	Heated and cooled littered floor (in case of combideck systems).	Not applicable	Not applicable
f.	Use of an air cleaning system, such as: 1. Wet acid scrubber; 2. Two-stage or three-stage air cleaning system; 3. Bioscrubber (or biotrickling filter).	Not applicable	Not applicable