H1 Environmental Risk Assessment Methwold (Breckland) Farm Poultry Unit

Source of emission	Emission (e.g., ammonia, dust, run-off, spillage, noise, odour)	Receptor (e.g., air, water, land, humans, plants)	Description of impact and duration of impact i.e., short term (ST), medium term (MT) or long term (LT)	Significance of negative impacts Major +++ Moderate ++ Minor + Nil 0	Mitigation / management measures for this emission
1. Poultry production (for the complete production & cleaning cycle)	Ammonia	Air	Aerial deposition and direct toxic effect on trees (ST)	+++	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and Best Available Techniques (BAT) Reference Document; 2017:- • Feed specifications prepared & continually monitored by nutrition specialists. • Feed composition closely matched to the chicken's nutritional requirements – using, ad-lib feeding with a minimum of 3 nitrogen balanced diets to reduce crude protein in each subsequent stage of growth. • Authorised feed additives used to lower crude protein by adding essential amino acid supplements & non-starch polysaccharide enzymes to improve otherwise poorly digestible feed components & reduce nitrogen excretion into the litter. • Forced ventilation via side inlets and high velocity extraction fans (vents greater than 5.5 metres high and fan efflux velocity greater than 7m/s). • Optimising discharge conditions of exhaust air from all the poultry houses using a combination of techniques to reduce ammonia emissions - maximised outlet heights, exhausting air above roof level through the ridge, and maximised vertical outlet velocity, designed with uncapped outlet cones. • Ventilation computer controlled to remove moisture under all weather & seasonal conditions while meeting the physiological needs of chickens and help keep droppings and litter dry and friable. • Nitrogen sensitive receptors - European sites and sites of Special Scientific Interest (SSSI) for nature conservation within 5km of installation. Environment Agency advised detailed modelling must be submitted with the application to vary the permit in a Pre-application Report dated 28/07/2022.
		Land	Nutrient enrichment of soils (e.g., hyper-eutrophication and acidification) (LT)	++	
		Plants	Changes to sensitive ecosystems (LT)	+++	

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	Dust	Humans	Nuisance (ST) Contributor to odour (ST)	+	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and Best Available Techniques (BAT) Reference Document; 2017:- • Dust & bio-aerosol sensitive receptors - public rights of way within 100m of the boundary and proposed dwelling houses for farm workers. • Created a dust & bio-aerosol management plan with mitigation & contingency actions for rearing poultry.
			Human health (LT)	+	
		Plants	Covers leaves, inhibits photosynthesis (ST)	++	
		Land	Nutrient enrichment of soils (LT)	++	
		Water	Nutrient enrichment of water courses (MT)	++	
		Air	Adverse effect on air quality (ST)	+	
	Dirty water (e.g., due to run-off during or after clean-out)	Land	Nutrient enrichment of soils (LT)	+++	Measures are described in EPR 6.09 SGN; How to comply; Version2, 2010:- • Concrete apron and kerbs channel dirty water into a packaging storage tank. • Underground, concrete encased package dirty water tanks installed with capacity for storing all the dirty water, comes with diverter valve to keep dirty & clean water separate. • Stockman and cleaning contractors keeping roadways, areas around buildings, dirty water grates and drains clear of litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on unmade land.
		Water	Nutrient enrichment of water courses (ST)	++	

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					• Professional contractors empty dirty water tanks after cleaning finished in readiness for the next time and taken off-site. Collections can be increased anytime. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings & equipment with stockman, maintenance team & professional contractors.
	Noise	Humans	Nuisance (ST)	++	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and Best Available Techniques (BAT) Reference Document; 2017:- • Noise sensitive receptors – dwellings, industrial premises & public right of way within 400m of boundary. • Created noise management plan with mitigation/contingency actions for rearing poultry.
	Odour	Humans	Nuisance (ST)	++	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and Best Available Techniques (BAT) Reference Document; 2017:- • Odour sensitive receptors – dwellings, industrial premises & public right of way within 400m of boundary. • Created odour management plan with mitigation/contingency actions for rearing poultry.
	Zoonoses & notifiable diseases	Humans & livestock	Human and livestock health implications (ST)	+	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and Best Available Techniques (BAT) Reference Document; 2017, and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:- • Stockman who are responsible for care of chickens at any point in time, including holiday cover, part-time and temporary workers will be appropriately trained and qualified. • Using a Health Plan with professional veterinary input as required.

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					• Maintaining the bio-security precautions. • Signage warning people against unauthorised entry. • DEFRA approved disinfectants used for cleaning houses and boot dips. • Clean protective clothing for stockman and visitors. • Daily livestock inspections by stockman.
	Feed (e.g., due to spillage from bins	Land Water	Nutrient enrichment of soils (LT) Nutrient enrichment of water courses (MT)	+ +++	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and Best Available Techniques (BAT) Reference Document; 2017, and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:- • Package enclosed feed delivery systems installed (silos, pipes, augers, etc) minimising spillages & dust. • Feed silos protected from collision damage by careful siting relative to traffic flows - in between poultry houses keeping them out of the path of HGVs & easily connected to lorries blowing in feed over as short a distance as possible. • Deliveries monitored by drivers & stockman and any spillage cleared up immediately. • Automatic equipment on which chickens depend will be inspected by the stockman not less than once per day to check there are no defects, and any defects will be repaired immediately. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings & equipment with stockman, maintenance team & professional contractors.
	Pests	Humans	Nuisance caused by vermin and flies (ST)	+	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010:- • Dead chickens removed daily from poultry houses by the stockman. • Carcasses stored in secure, non-leaking, containers and kept covered.

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					• Containers removed weekly by an approved transporter under the National Fallen Stock scheme. Weekly collections are normally considered adequate to avoid attracting vermin and flies but can be increased anytime, for example in warmer weather or in event of higher mortality as result of disease. • Transporter exchanging clean and disinfected containers for the filled ones, so no cleaning or disinfecting of containers on site. • Scheduled programme of pest control with professional contractors licensed to use pest control products, or stockman or other workers will be trained to maintain pest control arrangements.
2. Use of vehicles onsite	Feed, used litter or dirty water (e.g., due to spillage from vehicles)	Land Water	Nutrient enrichment of soils (LT) Nutrient enrichment of water courses (MT)	+ +++	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:- • Feed silos protected from collision damage by careful siting relative to traffic flows - in between poultry houses keeping them out of the path of HGVs and easily connected to lorries blowing in feed over as short a distance as possible. • Deliveries monitored by drivers & stockman; any spillage cleared up immediately. • Removing litter from the floor, using a front end or skid-steer loader to shovel the bulk of the litter carefully & directly off the floor into waiting trailers positioned outside the doors to avoid double handling outside & tipping from minimal height. • Vehicles/ trailers will be kept covered unless loading. • Concrete apron and kerbs channel dirty water into a package storage tank. • Stockman and cleaning contractors keeping roadways, areas around buildings, dirty water grates and drains clear of litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on to unmade land.

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					• Maintaining an inspection and preventive maintenance programme with record keeping for buildings & equipment with stockman, maintenance team & professional contractors.
	Noise	Humans	Nuisance (ST)	++	• See mitigation/ management measures for noise above.
	Odour	Humans	Nuisance (ST)	+	• See mitigation/ management measures for odour above.
3. Storage facilities	Dirty water (e.g., due to overflow or leakage from underground storage tanks)	Land Water	Nutrient enrichment of soils (LT) Contamination of surface and groundwater (MT)	++ +++	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010:- • Concrete apron and kerbs channel dirty water into a package storage tank. • Underground, concrete encased package dirty water storage tank installed with capacity for all the dirty water, comes with diverter valve to keep dirty and clean water separate and manholes will be kept covered. • Stockman and cleaning contractors keeping roadways, areas around buildings, dirty water grates and drains clear of litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on to unmade land. • Professional contractors empty the dirty water tank after cleaning is finished in readiness for next time and taken off-site - avoids anaerobic conditions developing in the settled sludge. Emptying can be arranged anytime if any of the tanks are overfilled for example where a diverter valve was not reset and resulting in a tank being filled with rainwater, to stop dirty water backing up and over spilling on to the concrete apron during washing. If any dirty water backs up and overspills the tank will be emptied within 24 hours and the concrete apron and drains cleaned & disinfected same day to prevent odour. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings & equipment with stockman, maintenance team & professional contractors.

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					• Note, dirty wash water from cleaning & disinfecting the macerator & associated equipment will be stored with the macerated dead-in-shell & non-viable eggs in secure, non-leaking, containers/ wheelie bins with lids & kept locked to be collected under the National Fallen Stock Scheme, & not in the dirty water tanks for land spreading.
	Fuel, disinfectant, and other chemicals (e.g., due to spills or leakage)	Water Land	Contamination of surface & groundwater with consequential effects on animals (ST) Contamination of land (MT)	**+++** **+++**	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010 and DEFRA; 2018 Code of practice for the welfare of meat chickens and meat breeding chickens:- • Concrete apron & kerbs channel spillages into below ground package storage tanks. • Package back-up generators fuel levels will be checked for use/ signs of leaks. • Automatic equipment on which chickens depend must be inspected by the stockman not less than once per day to check there are no defects and any defects repaired immediately. • Disinfectants, pesticides & veterinary medicines to be stored in dry, frost-free, fire-resistant stores, kept secure against unauthorised use and capable of retaining any spillage. • Package footbaths to be used to avoid overflowing. • Spent disinfectant from footbaths emptied into dirty water tank. • Implementing the accident management plan if disinfectant poses risk of entering any surface or groundwater, including using spill kit equipment. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings & equipment with stockman, maintenance team & professional contractors.

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	Health risks due to contact with stored materials, inhalation, etc.	Humans	Human health issues (ST)	+	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010:- • Manufacturer's safety data sheets for materials kept onsite. • Measures set out in the Environmental Accident Management Plan. • Maintaining an inspection and preventive maintenance programme with record keeping for buildings & equipment with stockman, maintenance team & professional contractors.
Surface water & infiltration drainage system	Fire & firefighting water	Ely Ouse Chalk Groundwater Body Land	Contamination of groundwater (MT) Contamination of land (MT)	Moderate Minor	• Maintaining general fire precautions at all times - in accordance with company fire safety procedures & training, including fire extinguishers, provision of designated areas for smoking, storing incompatible materials apart, limiting size of stockpiles of combustible materials & surround them with fire breaks, not storing materials alongside the site boundary & workers checking precautions during the day. Regular mandatory risk assessments & recommendations for buildings & precautions by professional contractors & insurers. • Contaminated firewater might be diverted & stored onsite in underground dirty water storage tanks for offsite disposal.
Surface water & infiltration drainage system	Fuel, disinfectant & other chemicals (e.g., spillage result of unauthorised	Ely Ouse Chalk Groundwater Body Land	Contamination of groundwater (MT) Contamination of land (MT)	Moderate Minor	Measures are described in EPR 6.09 SGN; How to comply; Version2; 2010:- • Perimeter fence & gates & no public access through any part of the site. • Poultry houses & stores will be securely locked at night. • Fuel oil tanks & LPG tanks will be secure & locked. • Relatively small quantity of polluting substances stored onsite at any time including fuel oil for the back-up generators & disinfectants, etc.

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	persons, tampering, vandalism, stealing).				• Any spillage & discharge on unmade land or into the infiltration drainage system must be reported immediately to the Environment Agency. .
River flooding	Dirty litter, dirty water	Ely Ouse Chalk Groundwater Body Land	Contamination of groundwater (MT) Contamination of land (ST)	Minor Minor	Located in flood risk zone 1, very low risk of flooding from rivers. Less than 0.1% (1 in 1,000), chance of flooding in any year, according to government website; *Check long term flood risk for an area in England*. Available at www.gov.uk. Nearest watercourse is the Cut-off Channel 3.3km to the west, and closest flood risk in zones 2&3 are 2km to the north in Methwold village.
Surface water (Flash flooding)	Dirty litter, dirty water	Ely Ouse Chalk Groundwater Body Land	Contamination of groundwater (MT) Contamination of land (ST)	Minor Minor	Very low risk of surface water flooding, chance of flooding between 0.1% and 1.0% (1 in 1,000 and 1 in 100) in any year, according to government website; *Check long term flood risk for an area in England*. Available at www.gov.uk. Shows surface water flooding to be limited to discrete areas nearest the boundary so not likely to adversely impact any poultry houses.
Groundwater flooding	Dirty litter, dirty water	Ely Ouse Chalk Groundwater Body Land	Contamination of groundwater (MT) Contamination of land (ST)	Minor Minor	Flooding from reservoirs is unlikely in this area according to government website; *Check long term flood risk for an area in England*. Available at www.gov.uk.

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Reservoir risk	Dirty litter, dirty water	Ely Ouse Chalk Groundwater Body Land	Contamination of groundwater (MT) Contamination of land (ST)	Minor Minor	Flooding from reservoirs is unlikely in this area according to government website; *Check long term flood risk for an area in England*. Available at www.gov.uk.