



Appendix 2: H1 Environmental Risk Assessment

Environmental Permit Bespoke Application

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1. Odour Risk Assessment

The *Odour* section of the Natural Resources Wales guidance, *How to Comply with Your Environmental Permit for Intensive Farming*, states that;

“Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.”

There are sensitive residential receptors identified within 400m of the site. As part of the permit application and planning application an Odour Impact Assessment, with associated odour modelling, has been carried out for the proposed poultry buildings at Llwyngwilym Poultry Unit. In addition an odour management plan has been produced, taking into account the findings of the resulting Odour Impact Assessment. Sources of odour have been identified in the Amenity Risk Assessment at Appendix 7 and in the Odour Management Plan at Appendix 9.

The following list identifies the main sources or operations which are possible odour sources:

- Broiler house ventilation fan outlets
- Carcase storage
- Carcase disposal
- Litter removal
- Washing operations
- Litter storage
- Litter/slurry spreading

The following table sets out the perceived risks presented by odour, how they could affect the surrounding environment and the measures in place to prevent any harm occurring.

In the event of an odour complaint an Odour Complaint Form will be filled in and appropriate action will be taken to remedy the problem should the complaint be validated. The Odour Complaint Form is included within the updated Odour Management Plan at Appendix 9.

Potential Risks and Receptors			Management of the Risk		Assessment of the Risk	
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Manufacture and selection of feed	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> No on site milling of feed carried out. Feed specifications are prepared by the feed compounder's specialist in nutrition. Feed will be supplied from UKASTA accredited feed mills, so that only approved raw materials will be used. 	Unlikely	Odour Annoyance	Not significant if properly managed
Feed Delivery and Storage	Neighbouring dwelling houses / public on the footpath /	Air	<ul style="list-style-type: none"> Feed delivery systems are sealed to minimise atmospheric dust. Any spillage of feed around the bin is immediately swept up. The condition of feed bins is checked frequently so any damage or leaks can be identified. 	Unlikely	Odour Annoyance	Not significant
Ventilation Systems	Neighbouring dwelling houses /	Air	<ul style="list-style-type: none"> The ventilation system is regularly adjusted according to age and the flock requirements. 	Unlikely	Odour Annoyance	Not significant/minor significance

	public on the footpath		<ul style="list-style-type: none"> • The ventilation system is designed to efficiently remove moisture from the site. • Ventilation system routinely checked and maintained to ensure efficient functioning to specification. • Full odour mitigation measures put in place. 			
Litter Management	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Controls on feed and ventilation to help maintain litter quality (as above). • Use of nipple drinking systems which minimise spillage. • Insulated walls and ceilings to prevent condensation. • Concrete floors to prevent water ingress. • Stocking densities at optimal levels to prevent overcrowding. • Use of a health plan, with specialist veterinary input used as necessary. 	Unlikely	Odour Annoyance	Not significant

Carcass Disposal	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Carcasses are placed in sealed containers immediately after they are removed from the house. • Extra collection can be arranged. 	Unlikely	Odour Annoyance	Not significant
House Clean Out	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • There is no storage of used litter outside the house at any time. • Yards will be cleaned down at clean out. • Litter is carefully placed into trailers positioned inside the doors of the houses. • When trailers are full, they are covered over. • Litter is transported in covered trailers. • Litter is dealt with as part of an approved manure management plan. • Approved and suitable products used. • Full odour management plan put in place and full odour mitigation measures put in place. 	Likely	Odour Annoyance	Not significant if properly managed Minor significance

Dirty Water Management	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none">• Areas around the house are concreted and remain clean.• At clean out, dirty water is directed to underground tanks for storage.• Dirty water spread onto land.	Unlikely	Odour Annoyance	Not significant if properly managed
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2. Noise Risk Assessment

The *Noise* section of the Natural Resources Wales guidance, *How to Comply with Your Environmental Permit for Intensive Farming*, states that;

“Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of Natural Resources Wales, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.”

There are sensitive residential receptors identified within 400m of the site. As part of the permit application and planning application a Noise Assessment, with associated noise modelling, has been carried out for the proposed poultry buildings at Llwyngwilym Poultry Unit. In addition a noise management plan has been produced, taking into account the findings of the resulting Assessment. Sources of noise have been identified in the Amenity Risk Assessment at Appendix 7 and in the Noise Management Plan at Appendix 10.

In the event of a noise complaint a Noise Complaint Form will be filled in and appropriate action will be taken to remedy the problem should the complaint be validated. The Noise Complaint Form is included within the updated Noise Management Plan at Appendix 10.

The main possible operations and sources of noise at the site have been identified as the following;

- Ventilation Fans
- Fuel and Feed Deliveries
- Feeding Systems
- Alarm Systems
- Bird Catching
- Clean Out Operations
- Maintenance and Repairs
- Set up and Placement
- Standby Generator Testing
- Personnel / Staff / Contractors

The following table sets out the perceived risks presented by noise, how they could affect the surrounding environment and the measures in place to prevent any harm occurring.

Potential Risks and Receptors			Management of the Risk		Assessment of the Risk	
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Ventilation Fans	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> Noise assessed during daily inspections Fans operated on an intermittent programme Regular maintenance carried out at the end of each cycle Tree or shrub screening put in place 	Unlikely	Noise annoyance	Not significant
Feed Deliveries	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> Delivery lorries fitted with silencers Driven onto and off site with consideration for neighbours Large capacity lorries to reduce the number of deliveries required Regular road and track maintenance Delivery time restrictions if needed Engines to be switched off when not in use 	Unlikely	Noise annoyance	Not significant
Fuel Deliveries	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> Time restrictions if needed Driven onto and off site with consideration for neighbours 	Unlikely	Noise annoyance	Not significant

			<ul style="list-style-type: none"> • Regular road and track maintenance • Engines to be switched off when not in use 			
Feeding Systems	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Daily inspections • Regular maintenance at the end of each cycle 	Unlikely	Noise annoyance	Not significant
Alarm systems	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Audible alarms timed to normal working hours to avoid disturbance • Use of pagers and mobile phones • Electrics and equipment routinely maintained and inspected 	Unlikely	Noise annoyance	Not significant
Bird Catching	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • The catch teams are fully trained • Lorries scheduled to minimise the duration of the catch • Doors or curtains operated for entry and exit of forklifts as necessary • Lorries parked as close as possible to the sheds in order to reduce forklift travel • Screen curtains fitted to lorries as necessary 	Unlikely	Noise annoyance	Not significant

			<ul style="list-style-type: none"> • Lorries are promptly removed off site when full • Lorries driven onto and off site with consideration for neighbours 			
Clean out Operations	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Litter removal during normal working hours • Trailers parked as close as possible to minimise loader travel distance • Large trailers used to reduce traffic levels • Washing down to be carried out during normal working hours • Regular yard, road and track maintenance • Engines to be switched off when not in use • Machinery driven onto and off site with consideration for neighbours 	Unlikely	Noise annoyance	Not significant
Maintenance and Repair	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Maintenance and repair to be carried out during normal working hours 	Unlikely	Noise annoyance	Not significant
Set up and Placement	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Set up and placement of birds is to be carried out during normal working hours 	Unlikely	Noise annoyance	Not significant

Standby Generators	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Tests run during normal working hours • Fully noise insulated • Electrics and equipment routinely maintained and inspected so that back-up systems are rarely needed to be used 	Unlikely	Noise annoyance	Not significant
Personnel / Staff / Contractors	Neighbouring dwelling houses / public on the footpath	Air	<ul style="list-style-type: none"> • Staff, catchers and other contractors are required to carry out their work without creating excessive noise from shouting and through the use of radios • Vehicles driven onto and off site with consideration for neighbours • Engines to be switched off when not in use 	Unlikely	Noise annoyance	Not significant

3. Fugitive Emissions

Fugitive emissions are emissions to the air, land or water arising from activities either from a localised or a diffuse source that are not controlled by an emissions or background limit. These can result in a number of effects such as; cause harm to human and environmental health, cause offence and human sense, damage property and interfere with amenity.

The main possible sources of fugitive emissions at the site have been identified as the following;

- Releases to air, such as from raw materials or wastes
- Dust
- Releases to water and land, such as spills from the storage or handling of liquid such as fuel oil
- Uncollected run-off from operational and storage areas
- Pest such as flies

The *Fugitive Emissions* section of the Natural Resources Wales guidance, *How to Comply with Your Environmental Permit for Intensive Farming*, states that; “*We do not expect farming installations to produce a written fugitive emissions management plan as part of the permit application*”. However, appropriate measures will be undertaken in order to prevent or minimise fugitive emissions and their effects on the surrounding environment.

The following table sets out the perceived risks present by fugitive emissions, how they could affect the surrounding environment and the measures in place to prevent any harm occurring.

Further details can also be seen in Appendix 3, Summary of Environment Management System, including within the Accident Management Plan at section 10 of Appendix 3, along with Appendix 4 Technical Standards.

	Potential Risks and Receptors				Management of the Risk		Assessment of the Risk	
	Source	Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Air	Feed storage and delivery	<ul style="list-style-type: none"> Spilling feed during delivery to storage Creation of dust 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site.</p> <p>Surrounding vegetation and land.</p>	Air	<ul style="list-style-type: none"> Feed delivery systems sealed to minimise atmospheric dust Any spillage of feed is immediately cleared The condition of feed bins is checked frequently so that damage and leaks can be identified Bins located between the buildings. 	Unlikely	Odour annoyance, marginally offensive odours	Not significant
	Ventilation System	<ul style="list-style-type: none"> Inadequate air movement in the house, leading to high humidity and wet litter Inadequate system design causing poor dispersal of dust or odours 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site.</p> <p>Surrounding vegetation and land.</p>	Air	<ul style="list-style-type: none"> Ventilation system is regularly adjusted according to the age and requirements of the flock The ventilation system is designed to effectively remove moisture from the house Full odour mitigation measures put in place Dust baffles can be used 	Unlikely	Noticeable offensive odours, aerial deposition and direct toxic effect on trees, nutrient enrichment of soils and changes to	Minor significance

							sensitive ecosystems.	
Litter Management	<ul style="list-style-type: none"> • Odours arising from wet litter • The use of insufficient or poor quality litter • Spillage of water from drinking systems • Disease outbreaks leading to wet litter 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site.</p> <p>Surrounding vegetation and land.</p>	Air	<ul style="list-style-type: none"> • Controls on feed and ventilation to maintain litter quality • Appropriate use of small bales of shaving or straw – high welfare system used • Use of nipple drinking systems minimising spillage • Insulated walls and ceilings to prevent condensation • Concrete floors to prevent water ingress • Stocking densities at optimal levels to prevent overcrowding • Use a health plan with special veterinary input used as necessary 	Unlikely	Noticeable offensive odours, aerial deposition and direct toxic effect on trees, nutrient enrichment of soils and changes to sensitive ecosystems	Minor significance	
Carcass disposal	<ul style="list-style-type: none"> • Inadequate storage for carcasses on site 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site</p>	Air	<ul style="list-style-type: none"> • Carcasses are placed in sealed, locked containers immediately after removal • Collection of carcasses undertaken regularly and can be arranged more frequently if necessary 	Unlikely	Noticeable offensive odours, loss of amenity to footpath users	Not significant	

House clean out	<ul style="list-style-type: none"> • Creation of dust associated with litter removal • Use of odorous products to clean houses 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site. Surrounding vegetation and land.</p>	Air	<ul style="list-style-type: none"> • Litter is carefully placed into trailers positioned at the entrance to each house, • Full trailers are covered. • Approved and suitable products used • Full odour management plan put in place and full odour mitigation measures put in place 	Unlikely	Noticeable offensive odours, loss of amenity to footpath users	Minor significance
Used Litter	<ul style="list-style-type: none"> • Storage of litter on site • Transport of litter off site 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site.</p> <p>Surrounding vegetation and land.</p>	Air	<ul style="list-style-type: none"> • There is no storage of litter outside the houses at any time • Litter is transported in covered trailers • Litter used as fertiliser on farm or taken off site for use on other holdings 	Unlikely	Noticeable offensive odours, aerial deposition and direct toxic effect on trees, nutrient enrichment of soils and changes to sensitive ecosystems	Not significant
Zoonoses and notifiable diseases	<ul style="list-style-type: none"> • Diseases within poultry units. 	Human health and livestock health	Air / Direct Contract	<ul style="list-style-type: none"> • Biosecurity precautions in place, as listed in the Accident Management Plan • Frequent stock inspections 	Unlikely	Human and livestock health implications	Not significant if managed carefully

					<ul style="list-style-type: none"> • Use of disinfectants and appropriate clean overalls and boots for staff and visitors to prevent spread of disease 			
Land	Spillages of oil or fuel	<ul style="list-style-type: none"> • Spillage during delivery or refuelling of plant and equipment • Failure of fuel tanks 	Nearby watercourses and ditches	Land	<ul style="list-style-type: none"> • Trained staff to supervise deliveries • Use of spill kits and drip trays • Impervious surface of the surrounding yard • Maintain infrastructure • Values are locked when not in use • Crash barriers put in place • Concrete base with bund containing tanks and fill point. • Regular inspections 	Unlikely	Contamination of land, drains, groundwater and watercourses	Not significant if managed carefully
	Spillages / Leaks of chemicals	<ul style="list-style-type: none"> • During storage • During delivery • Spillage of disinfectant solutions during preparation 	Nearby watercourses and ditches	Land	<ul style="list-style-type: none"> • Supervise deliveries • Use of drip trays and spill materials • Impervious surface of the surrounding yard • Maintain infrastructure • Staff trained in preparing solutions • Regular inspections 	Unlikely	Contamination of land, drains, groundwater and watercourses	Not significant if managed carefully

Water	Dirty water management	<ul style="list-style-type: none"> Wash water run off to nearby water course 	Nearby watercourses and ditches	Land	<ul style="list-style-type: none"> Area around the house remains clean throughout cycle At clean out, dirty water is directed to an underground tank for storage via an enclosed system Dirty water used appropriately on-farm Used litter split on yard / roadway during clean out is swept up immediately. 	Unlikely	Noticeable offensive odours, loss of amenity to footpath users, pollution of watercourses.	Not significant if managed carefully	
	Flies	Flies attracted to manure heaps	<ul style="list-style-type: none"> Manure storage/heaps 	Neighbouring dwelling houses, road, footpath users.	Air	<ul style="list-style-type: none"> Location of heaps away from residential areas No manure to be stored on site 	Unlikely	Irritation caused by flies, potential disease transfer	Not significant
		Flies attracted to feed storage	<ul style="list-style-type: none"> Unsuitable Storage 	Neighbouring dwelling houses, road, footpath users.	Air	<ul style="list-style-type: none"> Design of feed storage Regular maintenance Enclosed feed system. Any spillages swept up immediately. 	Unlikely	Irritation caused by flies, potential disease transfer	Not significant
Vermin	Vermin attracted to feed storage	<ul style="list-style-type: none"> Spillage of feed during delivery 	Road, footpath users / potentially residents if vermin migrate	Land	<ul style="list-style-type: none"> Regular maintenance of feed storage Clearing spillages when they occur 	Unlikely	Vermin infestation, loss of amenity	Not significant	

	Vehicle Movements	<ul style="list-style-type: none"> Inert dust raised from the internal roads and possibly dust from poorly covered vehicles (unlikely due to sheeting requirements) Spillage of feed from delivery 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site.</p> <p>Surrounding vegetation and land. Human health from inhalation</p>	Air	<ul style="list-style-type: none"> All vehicles to be sheeted Clearing spillages up immediately if they occur Use of pelleted feed delivered in sealed systems 	Unlikely	Loss of amenity for residents or walkers. Smothering and direct damage to nearby vegetation.	Not significance if managed carefully.
Dust	Birds, feed and floor litter	<ul style="list-style-type: none"> Extraction through ventilation system 	<p>Neighbouring dwelling houses.</p> <p>Public on roads and footpaths within 400m of site.</p> <p>Surrounding vegetation and land. Human health from inhalation residents within 400m</p>	Air	<ul style="list-style-type: none"> Dust baffles to fans Regular maintenance and cleaning undertaken 	Unlikely	Loss of amenity for residents or walkers	Not significant

4. Accident Risk Assessment and Management Plan

The *Accident Management Plan* section of the Natural Resources Wales guidance, *How to Comply with Your Environmental Permit for Intensive Farming*, states that the operator of a site shall;

“(a) maintain and implement an accident management plan;

(b) review and record at least every 4 years or as soon as practicable after an accident, (whichever is the earlier) whether changes to the plan should be made;

(c) make any appropriate changes to the plan identified by a review.”

An accident risk assessment and management plan has been written in order to identify the main likely accident hazards and put measures in place in order to reduce the risk to the environment of pollution or contamination. This will be amended and reviewed in line with the above statement. The accident management plan will be implemented should an accident occur in order to minimise the risk and damage caused.

All staff will be aware of the location and contents of the accident management plan, along with their responsibilities in the event of an accident. The accident management plan is kept in a designated accessible place such as within the office on the poultry site.

A site layout plan, showing details of all diverter valves, surface and dirty water drains is kept with the accident management plan for staff to obtain at any time.

A back-up copy of the accident management plan, site layout plan and drainage plan will be kept in a specified located in case the office on the poultry site is inaccessible in an emergency.

The potential for accidents has been covered in the risk assessment table below. This should be read in conjunction with the Accident Management Plan at Appendix 3.

Potential Risks and Receptors			Management of the Risk		Assessment of the Risk	
Hazard	Receptor	Pathway	Risk Management	Probability of Exposure	Consequence	Overall Risk
Chemical Spillages e.g. pesticides from handling/storage	Groundwater beneath site, local drains / watercourses	Cracks in impermeable surfaces and through the ground	<ul style="list-style-type: none"> Keep infrastructure well maintained and repair if necessary Regular inspection Design appropriate containment measures including diverter valves / shut off systems 	Very unlikely	Contamination of local groundwater / watercourses	Not significant
Feed Spillage	Local drains / watercourses	Surface water drainage system	<ul style="list-style-type: none"> Any spillages are immediately swept up Feed bins condition checked frequently Repair any damage as soon as possible Keep infrastructure well maintained Barriers are put in place to prevent collision, if necessary 	Unlikely	Contamination of local watercourses	Not significant
Below ground dirty water tank overflows	Local drains / watercourses via clean water drainage system	Surface water drainage system	<ul style="list-style-type: none"> Block off drain inlets with sand bags If already entered drain, block off outlets as indicated on the Accident Management Plan 	Unlikely	Contamination of local watercourses	Not significant

			<ul style="list-style-type: none"> • If necessary contact the Environment Agency • Alarm systems in place 			
Fuel tank leaking and escaping containment	Local drains / watercourses	Surface water drainage system	<ul style="list-style-type: none"> • Regular inspection • Keep infrastructure well maintained and repair if necessary • Prevent overflowing by monitoring levels • Maintain oil spill equipment, which will be located nearby • Barriers in place, if necessary, to prevent vehicles damaging equipment 	Unlikely	Contamination of groundwater / local watercourses	Not significant
Fire in buildings and water run-off from fire fighting	Broilers Local drains / watercourses	Surface water drainage system	<ul style="list-style-type: none"> • Monitoring system and alarms in place • Staff training undertaken • Locate firefighting equipment / call emergency services • Direct water to dirty water drains • Evacuation system 	Unlikely	<p>Death of birds</p> <p>Contamination of groundwater / local watercourses</p> <p>Smoke / local nuisance</p> <p>Risk of fire spreading to other areas</p>	Not significant