



Title:	Environmental Risk Assessment	
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1 Introduction

1.1 Background

This environmental risk assessment (ERA) has been carried out in support of an Environmental Permit application for an intensive farming Pig Unit to be operated by Linton Wold Farm. The Environment Agency Pre-Application Reference Number related to this application is EPR/VP3927SX/P001. The ERA systematically evaluates any potential environmental risks and associated impacts of the proposed site activities. The methodology and results documented below are to be read in conjunction with all the relevant application documentation.

1.2 Summary of Proposed Operations

The pigs will be housed in sheds providing accommodation for a total of 3,180 pigs ranging in weight 40kg – 125kg. The sheds are equipped with high velocity roof fans and the pigs are housed on a fully slatted floor system, with frequent vacuum slurry removal to an on farm, above ground covered storage tank. The capacity of the farms slurry storage infrastructure is in excess of seven months. A detailed description of the proposed operations has been provided within the application report referenced PWG-R01-F1 – Installation Information.

1.3 Report Approach & Guidance

The ERA undertaken follows current Environment Agency (EA) guidance for undertaking ERA's in support of permit applications [Risk assessments for your environmental permit - GOV.UK \(www.gov.uk\)](http://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit)

. This ERA follows the EA methodology by:

- Identifying and considering potential environmental risks for the site, and the sources of the potential environmental risks.
- Identifying the potential receptors (people, animals, property and anything else that could be affected by the hazard) at risk from the site.
- Identifying the possible pathways from the sources of the potential risks to the identified receptors.
- Assessing the potential risks relevant to the specific activity and evaluating whether they are acceptable and can be screened out.
- Detailing risk control measures if the potential environmental risks are considered too high.

In summary, the following risks and associated impacts were evaluated when undertaking the ERA:

- Amenity (litter / vermin / mud / fire / flood).
- Odour.
- Noise.
- Fugitive Air Releases (dust / bioaerosols).
- Surface Water.
- Groundwater.
- Air.
- Waste Produced.

- Global Warming Potential (GWP) / Photochemical Ozone Creation Potential (POP).

1.4 Report Format

This ERA follows the format detailed below:

- Introduction.
- Initial Assessment.
- Sensitive Receptors.
- Environmental Risk Assessments.
- Environmental Impact Evaluations.
- Conclusions and Improvements.

2 Initial Assessment

2.1 Methodology

The initial assessment, considers the potential environmental risks and impacts for both normal operations and abnormal/accident situations. Tables 2.2.1 and 2.2.2 below detail the results of the initial assessments and have been used to determine which combinations of operations and potential impacts require a further detailed assessment.

Where it is assessed that there is minimal or no potential for an environmental impact to occur, a brief explanation has been provided for each impact criterion and activity. For those potential risks and impacts that cannot immediately be effectively controlled further evaluation is required.:

‘RA’ indicates - further evaluation for assessing environmental risk has been undertaken as detailed in Section 4 of this report, for normal operations, abnormal operations or accident situations.

‘IA’ indicates- where more detailed evaluation of emissions is required and has been undertaken as detailed in Section 5 of this report.

2.2 Initial Assessment

Table 2.2.1 Initial Assessment – Normal Operations				
Impact / Process – Operations	Transportation of Livestock	Livestock Housing	Slurry Storage / Removal	Generator
Amenity (litter / vermin / mud / fire / flood)	Pest control in place as part of the site assurance scheme. No risk of mud and litter as all external operational areas covered by hardstanding and kept clean. No foreseeable fire risk from transport operations. Site located in Flood Zone 1, no perceivable risk of flooding.	Pest control in place as part of the site assurance scheme. Pig units and feed systems contained and kept clean to ensure compliance with animal welfare requirements, therefore, no potential amenity issues. No risk of mud and litter as all housing operational areas are internal. No foreseeable fire risk under normal operation from the housing of livestock.	Pest control in place as part of assurance scheme site works to. Frequent removal of slurry from the sheds into a SSAFO compliant above ground storage tank. No risk of mud and litter as all external operational areas covered by hardstanding and kept clean. No foreseeable fire risk under normal operation from slurry storage / removal.	No foreseeable amenity issues from the operation of a generator at site under normal operations.

Table 2.2.1 Initial Assessment – Normal Operations				
Impact / Process – Operations	Transportation of Livestock	Livestock Housing	Slurry Storage / Removal	Generator
		Site located in Flood Zone 1, no perceivable risk of flooding.	Site located in Flood Zone 1, no perceivable risk of flooding.	
Odour	RA	RA	RA	No foreseeable odour issues from the operation of a generator at site under normal operations.
Noise	RA	RA	RA	Generator enclosed by acoustic housing. Given low potential for noise from operation of the generator and the distance of sensitive receptors from generator, no further assessment required.
Fugitive Air Releases (Dust / Bioaerosols)	No risk of dust / bioaerosol from reception / removal of livestock as all operational areas covered by hardstanding.	RA	RA	No plausible dust / bioaerosol issues from the operation of an generator at site under normal operations.
Surface Water	No risk to surface waters from the transfer of livestock under normal operations as livestock handling systems are contained.	No risk to surface water from livestock housing under normal operations as livestock buildings are contained.	No risk to surface water from slurry storage and removal under normal operations as livestock buildings are contained, slurry storage system is SSAFO compliant.	No foreseeable risk to surface water from the operation of a generator at site under normal operations.
Groundwater	No risk to ground waters from the transfer of livestock under normal operations as livestock handling systems are contained.	No risk to ground water from livestock housing under normal operations as livestock buildings are contained.	No risk to ground water from slurry storage and removal under normal operations as livestock buildings are contained, slurry storage system is SSAFO compliant.	No foreseeable risk to ground water from the operation of a generator at site under normal operations.
Air	No point source emissions to air from livestock transfers	IA	IA	IA

Table 2.2.1 Initial Assessment – Normal Operations				
Impact / Process – Operations	Transportation of Livestock	Livestock Housing	Slurry Storage / Removal	Generator
	that site have direct control over.			
Waste	No waste generated from livestock transfers under normal operations.	IA	No waste generated under normal operations.	No waste generated under normal operations.
GWP / POP	No point source / fugitive emissions to air from livestock transfers that site have direct control over.	No point source / fugitive emissions to air from livestock housing that site have direct control over.	No point source / fugitive emissions to air from slurry storage / transfers that site have direct control over.	IA

Table 2.2.2 Initial Assessment – Abnormal Operations				
Impact / Process – Operations	Transportation of Livestock	Livestock Housing	Slurry Storage / Removal	Generator
Amenity (litter / vermin / mud / fire / flood)	<p>Pest control in place as part of the site assurance scheme.</p> <p>No risk of mud and litter as all external operational areas covered by hardstanding and kept clean.</p> <p>No foreseeable fire risk from transport operations.</p> <p>Site located in Flood Zone 1, no perceivable risk of flooding.</p>	<p>Pest control in place as part of the site assurance scheme.</p> <p>Pig units and feed systems contained and kept clean to ensure compliance with animal welfare requirements, therefore, no potential amenity issues.</p> <p>No risk of mud and litter as all housing operational areas are internal.</p> <p>Site located in Flood Zone 1, no perceivable risk of flooding.</p> <p>Fire – RA</p>	<p>Pest control in place as part of the site assurance scheme.</p> <p>Slurry removed from site frequently, therefore, no potential amenity issues.</p> <p>No risk of mud and litter as all operational areas covered by hardstanding and kept clean.</p> <p>No fire risk under abnormal operation from slurry storage / removal.</p> <p>Site located in Flood Zone 1, no perceivable risk of flooding.</p>	<p>No foreseeable amenity issues from the operation of a generator at site under normal operations.</p> <p>Fire - RA</p>
Odour	RA	RA	RA	Given low potential for odour from operation of the generator

Table 2.2.2 Initial Assessment – Abnormal Operations				
Impact / Process – Operations	Transportation of Livestock	Livestock Housing	Slurry Storage / Removal	Generator
				and the distance of sensitive receptors from generator, no further assessment required.
Noise	RA	RA	RA	Generator enclosed by acoustic housing. Given low potential for noise from operation of the generator and the distance of sensitive receptors from generator >500 metres, no further assessment required.
Fugitive Air Releases (dust / bioaerosols)	No risk of dust / bioaerosol from reception / removal livestock as all operational areas covered by hardstanding.	RA	RA	No plausible dust / bioaerosol issues from the operation of the generator at site under normal operations.
Surface Water	RA	RA	RA	RA
Groundwater	RA	RA	RA	RA
Air	No point source emissions to air from livestock transfers that site have direct control over.	RA	IA	RA
Waste	RA	RA	RA	RA
GWP / POP	No point source / fugitive emissions to air from livestock transfers that site have direct control over.	No point source / fugitive emissions to air from livestock housing that site have direct control over.	No point source / fugitive emissions to air from slurry storage / transfers that site have direct control over.	RA

3 Sensitive Receptors

3.1 Site Location

The site is located at the following address - Linton Wold Farm, Wold Road, West Luton, Malton, Yorkshire, England, YO17 8DG.

The centre of the site is at National Grid Reference (NGR) SE 90664 70917.

Site plans outlining the site location and the receptors identified below can be found in the supporting report referenced – PWG-R06-F1.

3.2 Sensitive Receptors

Table 3. 1 below details sensitive receptors identified within a 2 kilometre radius (unless otherwise specified), of the proposed installation boundaries. For clarity only the closest receptor in each direction is listed.

Table 3.1 - Sensitive Receptors			
Receptor Classification	Compass Direction	Approx Distance from the Proposed Installation ¹	Plan Reference ²
Human Occupied Receptors (within 1 km)			
Residential	N	c. 1.18 km	R1
	SE	c. 1.20 km	R2
	SW	c. 0.95 km	R3
	Farm workers housed on the farm c.260 metres South East of the installation boundary. This receptor is not marked on the receptor plan.		
Industrial / Commercial / Offices	None identified within 1 km.		
Habitat Receptors³			
Ramsar (England) (within 5km)	None identified within 5 km.		
Lady Hills SSSI (England) (within 5km)	NE	c. 1.30 km	H1
Wintringham Marsh SSSI (England) (within 5km)	NW	c.3.90km	Not shown on the receptor map due to distance from site.
Nine Springs Dale SSSI (England) (within 5km)	SW	c. 4.00 km	Not shown on the receptor map due to distance from site.
Special Areas of Conservation (England) (within 5km)	None identified within 5 km.		
Special Protection Areas (England) (within 5km)			

Table 3.1 - Sensitive Receptors			
Receptor Classification	Compass Direction	Approx Distance from the Proposed Installation ¹	Plan Reference²
Local Nature Reserve (England)			
National Nature Reserve (England)			
Priority Habitat Inventory Deciduous Woodland	SE	c. 0.28 km	H2
Priority Habitat Inventory Deciduous Woodland	SE	c. 0.95 km	H3
Water Resource Receptors (within 1 km)			
Farm Pond	SE	c. 0.12 km	W1
Pond	E	c. 0.56 km	W2
Ground Water ³	The site is located on a Principal Aquifer.		
	The site is within a Source Protection Zone III, Drinking Water Safeguard Zones (Groundwater) and a Nitrate Vulnerable Zone.		
Other Receptors			
Highways and Transportation ⁴	S	c. 1 km	T1
Air Quality Management Areas ⁵	Site is not located within an Air Quality Management Area.		
Scheduled Monuments (within 1km)	None identified within 1 km.		
<p>Table Notes:</p> <p>*: Closest receptor identified from the Pig Unit Sheds.</p> <p>1: Distance shown measured using Ordnance Survey data provided by Promap.</p> <p>2: Locations shown on Sensitive Receptor Plan, Report Ref PWG-R06-F1.</p> <p>3: Habitat / Groundwater Source Protection Zones areas identified using the MAGIC Website, August 2024.</p> <p>4: Closest local road network only.</p> <p>5: AQMA locations reviewed through DEFRA's website – August 2024.</p>			

4 Environmental Risk Assessment

4.1 Methodology

The risk assessment has been undertaken for each potential environmental risk identified in the tables set out in section 2.2 above, for normal operations, abnormal operations and accident situations, where **RA** has been stated. The risk classification assigned has been evaluated by assessing the likelihood of an incident occurring and the severity of impact should it occur, using the following methodology.

Table 4.1 – Environmental Risk Scoring Matrix		
Score	Description	Definition
Probability of an event occurring		
1	Very Low	Extremely unlikely to occur (<1 per 10 years)
2	Low	Unlikely to occur (<1 per year)
3	Moderate	Could occur (1 per year)
4	High	Could occur frequently (>1 per year)
5	Very High	Could occur continuously
Severity of impact should the event occur		
1	Very Low	Negligible impact
2	Low	Minor impact (contained in localised area on site & recoverable)
3	Moderate	Medium impact (contained within site boundary & recoverable)
4	High	Major impact (spread off site &/or difficult to recover)
5	Very High	Major impact (spread off-site & long term/permanent damage)

The Probability (P) and Severity (S) scores assigned to each item are then multiplied together to provide a total risk assessment score (R):

$$\text{Risk} = \text{Probability} \times \text{Severity}$$

$$R = P \times S.$$

Scores are considered to be high or low risk using the following risk classification:

< 10 – Low Risk – Insignificant

≥10 – High Risk - Significant Risk

Where the residual risks are found to be significant a more detailed assessment will be undertaken, or improvements i.e. additional control measures implemented, to mitigate the risks will be recommended within the conclusions section of this report.

4.2 Pre-Requisite Policies and Procedures

The procedures and policies to be implemented at the site to minimise the potential for environmental risk that form part of the sites Environmental Management System are summarised within the report referenced PWG-R04-F1. These policy and procedures, along with the identified impact control measures, have been considered when calculating the residual risk.

4.3 Risk Assessment Key

The tables set out below detail the risk assessments undertaken based on the methodology outlined above, for all activities and associated impacts recorded as a 'RA' in Tables 2.2.1 and 2.2.2.

Table 4.3 below summaries the abbreviations and notes associated with the risk assessments.

Table 4.3 – Table Key	
Letter / Symbol	Abbreviation
P	Probability
S	Severity (Impact / Consequence)
R	Risk Level
N	Normal
A	Abnormal
E	Emergency (accident).
General Notes – <ol style="list-style-type: none"> 1. This is an Environmental Risk Assessment. No account of Health and Safety risk assessments (human receptors) have been considered in the tables below. 2. All contingency planning requirements are dealt with in the Environmental Accident Management Plan and associated procedures. 	

4.4 Risk Assessment Tables

Table 4.4.1: Transportation of Livestock						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
<p>Odour > Air > Humans</p> <p>Closest human occupied receptor is c.0.95km from the Permit Boundary.</p>	Odours from livestock and associated transport vehicles.	N / A / E	<ul style="list-style-type: none"> Livestock delivered and removed from site are clean in line with animal welfare requirements. Livestock transport vehicles kept clean, in line with animal welfare requirements. 	1	4	4
<p>Noise > Air > Humans</p> <p>Closest human occupied receptor is c.0.95km from the Permit Boundary.</p>	Noise from livestock and associated transport vehicles.	N / A / E	<ul style="list-style-type: none"> Transport vehicles maintained under service contract. Site speed limit. Site access road well maintained. Livestock handled by trained stockmen to ensure they are not startled. 	2	3	6
<p>Surface Water > Ground / Groundwater > Watercourses</p> <p>Closest watercourse is c.120 metres from the Permit Boundary.</p>	Livestock vehicle fuel containment failure, or collision leading to significant spillage of materials, including vehicle fuels and oils that escape off site into surface waters.	A / E	<ul style="list-style-type: none"> Site speed limit enforced. Vehicles maintained under surface contract. Livestock vehicles on site for only a brief period of time. 	1	4	4
	Fuel leaks from parked vehicles that escape off site into surface waters.	A / E	<ul style="list-style-type: none"> Vehicles maintained under surface contract. Livestock vehicles on site for only a brief period. 	2	4	8
<p>Ground Water > Groundwater</p>	Livestock vehicle fuel containment failure, or collision leading to significant spillage of materials, including vehicle fuels and oils that	A / E	<ul style="list-style-type: none"> Site speed limit enforced. Vehicles maintained under surface contract. Vehicles on site for only a brief period. 	1	4	4

Table 4.4.1: Transportation of Livestock						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Underlying ground / groundwater. Site located on a Principal Aquifer, within a Source Protection Zone III and a Drinking Water Safeguard Zone (Groundwater & Surface Water).	escape off site to ground / groundwater.					
	Fuel leaks from parked vehicles that escape off site into ground / groundwater.	A / E	<ul style="list-style-type: none"> Vehicles maintained under surface contract. Livestock vehicles on site for only a brief period. 	2	4	8
Waste > Production of Waste	Waste generated from the clean-up of spilt fuels / oils from transport vehicles.	A / E	<ul style="list-style-type: none"> Staff trained in spill containment and control procedures. Dedicated containers used for the clean-up and handling of waste to ensure waste generation is kept to a minimum. 	2	3	6

Table 4.4.2: Livestock Housing						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Amenity > Air > Humans	Equipment electrical failure resulting in fire.	A / E	<ul style="list-style-type: none"> Key equipment maintained under service contract. 	1	5	5

Table 4.4.2: Livestock Housing						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
<p>Odour > Air > Humans</p> <p>Closest human occupied receptor is c.0.95km from the Permit Boundary.</p>	Odours from livestock / livestock houses.	N / A / E	<ul style="list-style-type: none"> Livestock kept clean as per animal welfare requirements. 	1	4	4
<p>Noise > Air > Humans</p> <p>Closest human occupied receptor is c.0.95km from the Permit Boundary.</p>	Noise from livestock.	N / A / E	<ul style="list-style-type: none"> Pig houses are contained. Livestock handled by trained stockmen to ensure they are not startled. Livestock welfare at the unit monitored by a dedicated stockman. Operations on site undertaken in such a manner as to not startle livestock. 	3	2	9
	Noise from feed / fuel delivery vehicles.	N / A / E	<ul style="list-style-type: none"> Site speed limit enforced. Vehicles maintained under surface contract. 	2	3	6
<p>Fugitive Releases – Dust / Bio Aerosols > Air > Humans</p> <p>Closest human occupied receptor is c.0.95km from the Permit Boundary.</p>	Dust / bioaerosols from the Pig units and associated feed systems.	N / A / E	<ul style="list-style-type: none"> Units ventilated and systems maintained under service contract. Feed stored in contained silos. Feed distribution systems contained. Feed delivered by suitably trained drivers to prevent overfilling of feed silos. Spillages of feed cleaned promptly. Pig units are contained. Housing and livestock kept clean to ensure animal welfare requirements are met. 	3	3	9

Table 4.4.2: Livestock Housing						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
			<ul style="list-style-type: none"> Stocking density in line with animal welfare requirements. 			
Surface Water > Ground / Groundwater > Watercourses Closest watercourse is c.120 metres from the Permit Boundary.	Failure of housing and slurry / feed systems leading to significant loss of materials, including litter, feed and wash waters. Materials enter ground / surface water.	A / E	<ul style="list-style-type: none"> Floor of the pig units is impermeable and resistant to slurry. Wash water / slurry collection systems are impermeable, corrosion resistant and form part of the Infrastructure Monitoring Programme implemented on site. Only dry feeds are used on site. 	1	4	4
	Feed delivery vehicle fuel containment failure, or collision leading to significant spillage of materials, including vehicle fuels and oils, feed that escape off site to ground / groundwater.	A / E	<ul style="list-style-type: none"> Site speed limit enforced. Vehicles maintained under surface contract. Vehicles on site for only a brief period. Only dry feed used on site. 	1	4	4
	Fuel leaks from parked vehicles that escape off site into ground / groundwater.	A / E	<ul style="list-style-type: none"> Vehicles maintained under surface contract. Livestock vehicles on site for only a brief period. 	2	4	8
	Fire, resulting firewater escaping from site.	A / E	<ul style="list-style-type: none"> Key equipment maintained under service contract. Safe handling of combustible materials in line with assurance scheme requirements. 	1	5	5
	Failure of housing and dirty water systems leading to significant loss	A / E	<ul style="list-style-type: none"> Floor of the pig units is impermeable and resistant to slurry. 	1	4	4

Table 4.4.2: Livestock Housing						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Ground Water > Groundwater Underlying ground / groundwater. Site located on a Principal Aquifer, within a Source Protection Zone III and a Drinking Water Safeguard Zone (Groundwater & Surface Water).	of materials, including litter, feed and wash waters. Materials enter ground / surface water.		<ul style="list-style-type: none"> Slurry systems impermeable, corrosion resistant and form part of the Infrastructure Monitoring Programme implemented on site. Only dry feeds are used on site. 			
	Feed delivery vehicle fuel containment failure, or collision leading to significant spillage of materials, including vehicle fuels and oils that escape off site to ground / groundwater.	A / E	<ul style="list-style-type: none"> Site speed limit enforced. Vehicles maintained under surface contract. Vehicles on site for only a brief period. Only dry feed used on site. 	1	4	4
	Fuel leaks from parked vehicles that escape off site into ground / groundwater.	A / E	<ul style="list-style-type: none"> Vehicles maintained under surface contract. Livestock vehicles on site for only a brief period. 	2	4	8
	Fire, resulting in firewater escaping from site.	A / E	<ul style="list-style-type: none"> Key equipment maintained under service contract. Safe handling of combustible materials in line with assurance scheme requirements. 	1	5	5
Point Source Air Releases > Atmosphere > Habitats Closest specified habitat receptor, is Priority Habitat Inventory Deciduous	Failure / malfunction of site ventilation systems resulting in poor dispersion of pig unit air, impacting on atmosphere / identified habitats.	A / E	<ul style="list-style-type: none"> Ventilation systems maintained under service contract. Performance of ventilation systems monitored daily by operatives / stockman. 	1	5	5

Table 4.4.2: Livestock Housing						
Potential Risks ¹			Control Measures		Assessment	
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Woodland c.280 metres from site.						
Waste > Production of Waste	Waste generated from the clean-up of spilt fuels / oils / feed from feed delivery vehicles.	A / E	<ul style="list-style-type: none"> Staff trained in spill containment and control procedures. Dedicated containers used for the clean-up and handling of waste to ensure waste generation is kept to a minimum. 	2	3	6

Table 4.4.3: Slurry Storage / Removal						
Potential Risks ¹			Control Measures		Assessment	
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Odour > Air > Humans			<ul style="list-style-type: none"> Vacuum removal of slurry from sheds to slurry storage tank on a frequent basis. Slurry collected from tank in enclosed tankers our pumped direct from store to spreading equipment. 	2	2	4
Closest human occupied receptor is c.0.95km from the Permit Boundary.	Odours from slurry.	N / A / E				
Noise > Air > Humans			<ul style="list-style-type: none"> Transport vehicles maintained under service contract. Site speed limit. Site access road well maintained. Slurry can pumped direct from on-site storage. 	2	3	6
Closest human occupied receptor is c.0.95km from the Permit Boundary.	Noise from vehicles collecting slurry.	N / A / E				

Table 4.4.3: Slurry Storage / Removal						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Fugitive Releases – Dust / Bio Aerosols > Air > Humans Closest human occupied receptor is c.0.95km from the Permit Boundary.	Bioaerosols from slurry storage systems / transport vehicles.	N / A / E	<ul style="list-style-type: none"> Slurry store fitted with a floating cover. By maintaining the required freeboard ensures wind velocity and air exchange on the slurry surface is minimised. 	3	2	6
Surface Water > Ground / Groundwater > Watercourses Closest watercourse is c.120 metres from the Permit Boundary.	Failure of slurry store or collection tanker / pipework leading to significant loss of materials. Materials enter ground / surface water.	A / E	<ul style="list-style-type: none"> Slurry store meets SSAFO requirements and is therefore impermeable to materials stored. Slurry collected in dedicated tanker / pumped direct from store to dedicated spreading equipment. 	2	3	6
	Slurry collection vehicle / pump fuel containment failure, or collision leading to significant spillage of materials, including vehicle fuels and oils, litter that escape off site to ground / surface water.	A / E	<ul style="list-style-type: none"> Site speed limit enforced. Vehicles / pumps maintained under surface contract. Vehicles on site for only a brief period. 	1	4	4
	Fuel leaks from parked vehicles / pump units that escape off site into ground / groundwater.	A / E	<ul style="list-style-type: none"> Vehicles / pump units maintained under surface contract. Vehicles / pump units on site for only a brief period. 	2	4	8
Ground Water > Groundwater	Failure of slurry store or collection tanker / pipework leading to significant loss of materials.	A / E	<ul style="list-style-type: none"> Slurry store meets SSAFO requirements and is therefore impermeable to materials stored. 	2	3	6

Table 4.4.3: Slurry Storage / Removal						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Underlying ground / groundwater. Site located on a Principal Aquifer, within a Source Protection Zone III and a Drinking Water Safeguard Zone (Groundwater & Surface Water).	Materials enter ground / ground water.		<ul style="list-style-type: none"> Slurry collected in dedicated tanker / pumped direct from store to dedicated spreading equipment. 			
	Slurry collection vehicle / pump fuel containment failure, or collision leading to significant spillage of materials, including vehicle fuels and oils, litter that escape off site to ground / groundwater.	A / E	<ul style="list-style-type: none"> Site speed limit enforced. Vehicles / pumps maintained under surface contract. Vehicles on site for only a brief period. 	1	4	4
	Fuel leaks from parked vehicles / pump units that escape off site into ground / groundwater.	A / E	<ul style="list-style-type: none"> Vehicles / pump units maintained under surface contract. Vehicles / pump units on site for only a brief period. 	2	4	8
Waste > Production of Waste	Waste generated from the clean-up of spilt fuels / oils / slurry from slurry collection / spreading vehicles and associated infrastructure.	A / E	<ul style="list-style-type: none"> Staff trained in spill containment and control procedures. Dedicated containers used for the clean-up and handling of waste to ensure waste generation is kept to a minimum. 	2	3	6

Table 4.4.4: Generator						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Amenity > Air > Humans Closest human occupied receptor is c.0.95km from the Permit Boundary.	Malfunction of the generator resulting in fire.	A / E	<ul style="list-style-type: none"> Generator maintained under service contract. Generator tested weekly on full load. Firefighting equipment available local to generator housing / staff trained in use. 	1	5	5
Surface Water > Ground / Groundwater Watercourses Closest watercourse is c.120 metres from the Permit Boundary.	Fuel spill during delivery, from vehicle collision, during filling or overfilling of fuel tank, resulting in the escaped materials entering ground / surface water.	A / E	<ul style="list-style-type: none"> Spills cleaned up immediately. Site speed limit. Generator included as part of the site's infrastructure monitoring programme. Integrated bunded tank. Staff trained how to refill without "overfilling". 	2	3	6
	Generator poorly maintained leading to tank / pipe work failure, resulting in the escaped materials entering ground / surface water.	A / E	<ul style="list-style-type: none"> Generator maintained under service contract. Integrated bunded tank. 	1	4	4
	Fire, resulting in firewater escaping from site.	A / E	<ul style="list-style-type: none"> Generator maintained under service contract. Safe handling of combustible materials in line with assurance scheme requirements. 	1	5	5
Ground Water > Groundwater	Fuel spill during delivery, from vehicle collision, during filling or overfilling of fuel tank, resulting in the escaped materials entering ground / surface water.	A / E	<ul style="list-style-type: none"> Spills cleaned up immediately. Site speed limit. Generator included as part of the site's infrastructure monitoring programme. 	2	3	6

Table 4.4.4: Generator						
Potential Risks ¹			Control Measures	Assessment		
Environmental Risk > Pathway > Receptors	Initiating Event	Condition N/A/E	Risk Management Controls ²	Residual Risk		
				P	S	R
Underlying ground / groundwater. Site located on a Principal Aquifer, within a Source Protection Zone III and a Drinking Water Safeguard Zone (Groundwater & Surface Water).	Generator poorly maintained leading to tank / pipe work failure, resulting in the escaped materials entering ground / surface water.	A / E	<ul style="list-style-type: none"> Generator maintained under service contract. 	1	4	4
	Fire resulting in firewater escaping from site.	A / E	<ul style="list-style-type: none"> Generator maintained under service contract. Safe handling of combustible materials in line with assurance scheme requirements. 	1	5	5
Point Source Air Releases > Atmosphere > Habitats / GWP Closest specified habitat receptor, is Priority Habitat Inventory Deciduous Woodland c.280 metres from site.	Failure / malfunction of generator, resulting in release to atmosphere of gases following incomplete combustion of fuel.	A / E	<ul style="list-style-type: none"> Generator maintained under service contract. 	1	5	5
Waste > Production of Waste	Waste generated from the clean-up of spilt fuels / oils / litter from fuel delivery vehicles.	A / E	<ul style="list-style-type: none"> Staff trained in spill containment and control procedures. Dedicated containers used for the clean-up and handling of waste to ensure waste generation is kept to a minimum. 	2	3	6

5 Detailed Impact Assessments

5.1 Introduction

The screening assessment detailed above sets out those activities and associated emissions that require a Detailed Impact Assessment of their potential impacts under normal operations. Detailed Impact Assessments are required for the following emissions:

- Air – Ammonia releases from livestock operations and combustion emissions from the site generator.
- Waste – Waste produced from livestock operations.
- Global Warming Potential (GWP) and Photochemical Ozone Creation Potential (POCP) from site's proposed operations.

5.2 Releases to Air

5.2.1 Ammonia

Details of the proposed operation were provided to the Environment Agency as part of the pre-application process. As part of their screening assessments completed at pre-application, the Environment Agency concluded the following -

'We have completed an initial ammonia screening assessment for your proposal to identify if you will need to submit a detailed modelling assessment with your application.

The screening assessment is based on your proposal to operate a farm which is permitted to stock 3,180 production pigs over 30 kg.

Summary of the assessment:

The ammonia screening results carried out by the Environment Agency are only intended to apply to any EPR permit application and not for use in local council planning submissions.

Based on the information you have provided you do not need to submit detailed modelling with your application.'

A copy of the Environment Agency's Ammonia Screening Assessment is located in Appendix 1 of this report. It is noted that an additional flexible covered slurry storage system with a surface area of c.550m has been added to the proposal that was presented to the Environment Agency. This is to enable frequent vacuum removal of the slurry, improving the emission factor of the housing system. Given the improvement in the emission factor used to assess the ammonia emissions from places on site and the small surface area of the covered store, the additional site detail will only improve the EA's initial assessment.

Based on the above, the ammonia impacts from the proposal have been screened out and therefore detailed modelling is not required.

5.2.2 Combustion Sources

The only combustion source on site is a Generator with a thermal input rating of less than 0.5 MWth.

Given the size of the Generator, emissions can only be considered to be negligible and no further detailed assessment is required.

5.3 Waste

5.3.1 Assessment of Wastes

Table 5.1 below identifies the waste streams produced on-site and assesses their potential for environmental impact. The potential for environmental impact of the recovery routes selected for the wastes identified have been assessed, including scoring them following Environment Agency guidance as set out on .gov.uk - <https://www.gov.uk/guidance/select-a-waste-recovery-or-disposal-method-for-your-environmental-permit>. Although classed as Animal By-Products / non-wastes - slurry and fallen stock have been included within the assessment below for completeness.

Table 5.1 – Waste Assessment						
EWC / Origin / Nature	Annual Volume	Description / Hierarchy	EA Hazard Rating	EA Impact Score	Hazard Rating x Impact Score	Assessment
02 01 06 – slurry Non-Hazardous.	Anticipated to be 825 t per production cycle.	R10 - Land treatment resulting in benefit to agriculture or ecological improvement.	4	4	16	Material is an ABP and recovery to land represents the best available environmental option for the material. Therefore, considered as insignificant in terms of environmental impact.
02 01 02 - Fallen stock. Non-Hazardous.	Variable.	R3 - Rendering.	4	3	12	Material is an ABP and processed in line with ABP and biosecurity requirements and best available environmental option for the material. Therefore, considered as insignificant in terms of environmental impact.
02 01 99 / Veterinary Waste from welfare activities. Non-Hazardous.	Unknown and variable.	Returned to supplier.	2	N / A	2	Veterinary medicines will be supplied on an as required basis, therefore any wastage will be minimal and considered as insignificant in terms of environmental impact.
15.01.02 - Plastic packaging from raw materials. Non-Hazardous.	< 5 t /yr	R3 – Recycling	4	3	12	Recycling represents the best available environmental option for the material. In addition, the volume of waste produced is anticipated to be below Permit Reporting thresholds. Therefore, considered as insignificant in terms of environmental impact.

5.3.2 Conclusion

The majority of materials detailed above are sent for recovery by rendering or to land for agricultural benefit, which is considered the best available environmental option for the streams. It is anticipated that all other streams produced will be at levels below Permit reporting thresholds. On this basis, all waste streams produced, and their associated disposal / recovery routes are considered to be insignificant in terms of environmental impact.

A review of wastes will be undertaken as required in the timescales specified in the Environmental Permit to provide a complete assessment of waste recovery.

5.4 Global Warming Potential (GWP) and Photochemical Ozone Creation Potential (POCP)

5.4.1 Introduction

Both the direct emissions from the facility and the indirect emissions from the use of energy have global warming potential (GWP) and these need to be calculated along with the Photochemical Ozone Creation Potential (POCP) of the site. These have been calculated following the Environment Agency guidance note on .gov.uk - <https://www.gov.uk/guidance/assess-the-impact-of-air-emissions-on-global-warming#identify-greenhouse-gas-emissions>.

5.4.2 Assessment

The table below outlines the GWP and POCP of the site based on the estimated energy consumption under normal operations. Energy consumption sources and levels are as follows -

- Electricity - 54 MWh / yr.
- Gas Oil – c. 88,813 kg / yr.

Table 5.1 – Global Warming Potential Assessment								
Energy Source	Quantity of Fuel Used	Delivered Energy (MWh)	Primary Energy (MWh)	GWP CO ₂ (tonnes)	N ₂ O (GWP t CO ₂ equivalent)	VOC (GWP as t CO ₂ equivalent)	Total GWP (t / yr CO ₂ Equivalent)	Total POCP (kg / yr)
Electricity		54	130	22				
Gas Oil	88813 kg	-	1051	263	1	0.28	285	7.94
Solar		Variable	Variable	0				
Reference Factors								
Electricity	Electricity converted to primary energy factor of 2.4;							
	Electricity converted to CO ₂ apply EA's H1 factor 0.166 t / MWh Primary							
Gas Oil	Usage estimated at 2,000 litres a week.							
	Gas Oil k.g. converted to MWh using DEFRA's 2023 GHG Conversion Factors for Company Reporting factor of 42.6 MJ/kg.							
	Gas Oil converted to CO ₂ by applying EA's factor of 0.25 t / MWh Primary;							
	Gas Oil N ₂ O emissions based on AP 42 factor of 0.036 g N ₂ O/ kg , and EA GWP factor of 310 t CO ₂ equivalent / t N ₂ O;							
	Gas Oil VOC emissions based on AP42 factor of 0.11 g NMVOC / kg + 0.039 g CH ₄ / kg. As a conservative calculation, it is assumed that all VOCs are methane and therefore the methane EA GWP factor of 21 CO ₂ equivalent / t VOC has been applied.							

6 Conclusion

The Environmental Risk Assessment identified a number of processes and activities on site that have the potential to create an environmental impact on identified environmentally sensitive receptors, under normal, abnormal and emergency (accident) scenarios.

The results of the Environmental Risk Assessment has been summarised in Table 6.1 below.

Table 6.1 Environmental Risk Assessment Summary	
Impact	Significance / Further Assessment
Amenity (litter / vermin / mud / fire / flood).	Insignificant impact - no further assessment required.
Odour.	Insignificant impact - no further assessment required.
Noise.	Insignificant impact -no further assessment required.
Fugitive Air Releases (dust / bioaerosols).	Insignificant impact - no further assessment required.
Surface Water.	Insignificant impact - no further assessment required.
Groundwater.	Insignificant impact - no further assessment required.
Air.	Combustion Equipment - Insignificant impact - no further assessment required. Ammonia – Insignificant impact - no further assessment required.
Waste Produced.	Insignificant impact - no further assessment required.
Global Warming Potential (GWP) / Photochemical Ozone Creation Potential (POP).	Values calculated. No further assessment required.

Appendix 1 – Environment Agency Ammonia Screening Assessment

Pre-application Report

To: Edward Bennett (on behalf of H.M. Pigs Limited)

Pre-application number: EPR/VP3927SX/P001

Linton Wold Farm
Wold Road
West Luton
Malton
YO17 8DG

Date Completed – 12/07/24

Thank you for seeking advice before submitting an application for an Environmental Permit.

We have completed an initial ammonia screening assessment for your proposal to identify if you will need to submit a detailed modelling assessment with your application.

The screening assessment is based on your proposal to operate a farm which is permitted to stock 3,180 production pigs over 30 kg.

Summary of the assessment:

The ammonia screening results carried out by the Environment Agency are only intended to apply to any EPR permit application and not for use in local council planning submissions.

Based on the information you have provided you do not need to submit detailed modelling with your application. Further information about the screening results is provided in detail in Annex 1.

Please include this report in your H1 Environmental Risk Assessment and submit with your completed application form to the address given below.

For an example H1 Environmental Risk Assessment refer to the example Intensive Farming EPR application available on the national archives for the Environment Agency Website:

<http://webarchive.nationalarchives.gov.uk/20140328084622/http://www.environment-agency.gov.uk/business/sectors/40057.aspx>

Applying for your permit

You will need to complete application form part B3.5:

<https://www.gov.uk/government/publications/application-for-an-environmental-permit-part-b35>

Your application should be emailed to:
PSC@environment-agency.gov.uk
or sent to:

Environment Agency Permitting and Support Centre
Environmental Permitting Team
Quadrant 2
99 Parkway Avenue
Parkway Business Park
Sheffield
S9 4WF

If you need further information about this screening assessment or applying for your permit please email us at the following address:

preapplicationservice@environment-agency.gov.uk

Pre-application nature conservation data are correct at the time of screening. We will consider all nature conservation sites using best available information at the time of permitting. Our GIS data are updated regularly, and we are occasionally made aware of additional nature conservation sites by other organisations which we will consider when determining a permit.

The Environment Agency takes care to ensure that the conclusions of the screening assessment are correct at the time of preparation but reserves the right to change the basis of the assessment in the light of technical developments or changes in Environment Agency procedures.

Annex 1 Ammonia Screening Results

Screening Input

Grid Reference used for the assessment: 490682,470931 (with a 90m buffer)

Animal numbers and types

Animal numbers and types, housing systems, manure and slurry storage assessed are listed below. The animal numbers and emission factors are based on an interpretation of the information provided by the applicant during the pre-application process and have been used in this initial risk assessment to identify if modelling is necessary.

Category of livestock	Housing system	Number of animal places	Ammonia emission factor (kg NH ₃ /animal place/year)
Pigs >30 kg and unserved gilts	Fully slatted floor Roof ventilation only (vents greater than 5.5 metres high, fan efflux velocity at or greater than 13 m/s)*	3,180	3.08 **

* this can include gable end fans that are used for heat extraction only during the summer months

** Bespoke emission factor calculated based on a 74% occupancy rate (105-day cycle, with average occupancy of 78 days).

Manure Storage - none

Slurry Storage - none

If you decide to alter your proposal by increasing the number of animal places or by changing the animal housing type or by increasing the manure or slurry storage you will need to request a new screening assessment.

Screening Overview

This screening assessment has considered any Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites within 5km, any Sites of Special Scientific Interest (SSSIs) within 5km and also any National Nature Reserves (NNRs), Local Nature Reserves (LNRs), ancient woodlands and Local Wildlife Sites (LWSs) within 2km of the farm.

We have used the Environment Agency's Ammonia Screening Tool (AST v4.6) to assess the impact of your proposal at those sites identified within the above distance criteria.

We have applied a two-stage screening criteria to the ammonia screening tool results:

For SACs, SPAs, Ramsar sites and SSSIs, the screening assessment has taken into account other intensive farms that could act in-combination with the proposal, where applicable.

Where the ammonia screening tool predicts that emissions of ammonia or ammonia deposition (nutrient nitrogen or acid) will be <Y% (see Table 1 below) of the relevant critical level (CLE) (ammonia) or critical load (CLO) (nutrient nitrogen or acid), the proposal screens out of the requirement for an ammonia assessment.

Further modelling is required where:

- emissions of ammonia or ammonia deposition (nutrient nitrogen or acid) are in excess of Z% of the relevant CLe or CLOs at any SSSIs and/or other nature conservation sites (e.g. NNRs, LNRs, LWSs, ancient woodlands)
- emissions of ammonia or ammonia deposition (nutrient nitrogen or acid) are in excess of Y% of the relevant CLe or CLOs for any SACs, SPAs or Ramsar sites
- there is the potential for an in-combination effect with existing farms at any SSSIs if emissions are > Y% of the relevant CLe or CLOs
- the proposal is within 250m of any nature conservation sites

Table 1 Screening thresholds

Designation	Y%	Z%
SAC, SPA, Ramsar	4	n/a
SSSI	20	50
NNR, LNR, LWS, ancient woodland	100	100

Screening Results

The ammonia impacts from the proposal screened out and therefore detailed modelling is not required.