

Environmental Risk Assessment



Farm name: Carrick's Farm **Operator:** Mr E S Field (Foxton Farmers Ltd)

Table 1 Assessment of Odour Risk

What do you do that can harm and what could be harmed?			Managing the risk		Assessing the risk	
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs, who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
Odour from feed mixing, delivery and storage	Employees / visitors onto site	Air	<p>Odour Management Plan in place</p> <p>Feed delivery will be sealed and blown directly into bins to minimise atmospheric dust. Any spillage of feed around the bin is immediately cleaned up.</p> <p>The condition of feed bins is checked frequently so that any damage or leaks can be identified</p> <p>All feed ingredients are stored in covered tanks</p> <p>The unit is relatively isolated so there is minimal risk of dust causing direct odour nuisance</p>	Unlikely	Odour annoyance	Not significant

<ul style="list-style-type: none"> • Odour arising from problems with housing ventilation system • Inadequate air movement in the house leading to high humidity and wet bedding • Inadequate system design causing poor dispersal of odours. 	Employees / visitors onto site	Air	<p>The ventilation system will be regularly adjusted according to the age and requirements of the pigs</p> <p>The ventilation system will be designed to efficiently remove moisture from the house.</p> <p>Buildings with higher ventilation rates will discharge exhaust air via roof vents for improved dispersal.</p> <p>Stocking density maintained at or below levels set out in Welfare Regulations.</p>	Unlikely	Odour annoyance	Not significant
<p>Manure and slurry management:</p> <ul style="list-style-type: none"> • Odours arising from slurry collection, removal and distribution • The use of insufficient or poor quality straw or shavings • Spillage of water from drinking systems • Disease and vice outbreaks 	Employees / visitors onto site	Air	<p>Controls on feed and ventilation (see above) help to maintain air quality</p> <p>Additional controls include: Insulated walls and ceilings to prevent condensation</p> <p>Regular maintenance and correct positioning to avoid overflow from feed and drinking systems</p> <p>Frequent removal of the slurry; wind direction observed</p> <p>Slurry not agitated on removal and potentially odorous spillages cleaned up promptly</p>	Unlikely	Odour annoyance	Not significant
<p>Carcase disposal:</p> <ul style="list-style-type: none"> • Inadequate storage of carcasses on site • On-site disposal of carcasses by incineration. • Removal of carcasses by A Hughes and Son 	Employees / visitors onto site	Air	<p>Odours controlled by after burner</p> <p>All odour complaints are logged and investigated</p> <p>Pig carcasses are placed in sealed containers immediately after they are removed and are promptly removed and disposed of off-site by contractors- incinerator applied</p>	Unlikely	Odour annoyance	Not significant

			for so disposal can happen immediately.			
Buildings: <ul style="list-style-type: none"> • Cleaning and disinfection • Emptying slurry pits 	Employees / visitors onto site	Air	<p>Pens and yards kept clean</p> <p>Slurry not agitated on removal unless absolutely necessary and potentially odorous spillages cleaned up promptly</p> <p>Regularly removed (quarterly) to reduce opportunity of ammonia build up</p>	Likely	Odour annoyance	Not significant if carefully managed
Odour arising from slurry spreading	Employees / visitors onto site	Air	<p>Any which is land-spread is highlighted in the manure management plan and also follows NVZ rules</p> <p>Intermittent activity only</p>	Likely	Odour annoyance	Not significant if carefully managed
Odour arising from manure and slurry. Storage – slurry	Employees / visitors onto site	Air	<p>Site will operate under odour management plan</p> <p>Feed selection to minimise excretion of nutrients</p> <p>Areas of open, dirty concrete minimised</p> <p>Stores regularly emptied</p> <p>Composting of manure</p> <p>All stores sealed</p>	Likely	Odour annoyance	Not significant if carefully managed

Table 2 Assessment of Noise Risk

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence
<p>Noise problems from large vehicles travelling to and from the farm.</p> <p>Mobile source</p>	<p>Employees / visitors onto site</p>	<p>Air</p>	<p>Vehicles are required to be driven on to and off site with due consideration for neighbours</p> <p>Deliveries of feed and fuel are made only during the daytime, if possible, so that disturbance is minimised</p> <p>General animal movements made during daylight hours and of short duration with minimum stress</p> <p>All vehicles maintained so as to minimise engine noise and are driven slowly to and from the site</p> <p>Roads and tracks maintained to minimise noise produced</p> <p>Speed limit enforced with road bumps on drive into farm</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant if managed carefully</p>

<p>Large vehicles on site for delivering feed, loading live pigs at end of the growing period, removal slurry from houses</p> <p>Mobile source</p>	<p>Employees / visitors onto site</p>	<p>Air</p>	<p>Vehicles have to be well maintained and must be driven slowly around the site</p> <p>Engines to be switched off when not in use</p> <p>Vehicles which are fitted with an audible 'vehicle reversing' warning system are generally used only in the daytime</p> <p>Idling of machines avoided and engine revs kept low with an effective silencer</p> <p>Minimal manual feeding restricted to day working hours, limited at weekends and bank holidays</p> <p>Slurry tanker filling and emptying done as a quarterly activity</p> <p>Pigs are loaded as discretely as possible, minimising stress or noise</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant</p>
<p>Small vehicles travelling to and from the farm eg staff and visitors' cars, courier van deliveries, etc</p> <p>Mobile source</p>	<p>Employees / visitors onto site</p>	<p>Air</p>	<p>Small vehicles arrive during the normal working day and therefore are seen as low risk</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant</p>
<p>Feed transfer from lorry to bins and tanks</p> <p>Fixed source</p>	<p>Employees / visitors onto site</p>	<p>Air</p>	<p>Vehicles are well maintained and designed so that noise during feed transfer is minimised</p> <p>Conveyors and augers not operated when empty</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant</p>

			<p>Tipping type delivery vehicles and augers used whenever possible for bulk dry ingredient delivery</p> <p>Blower and vacuum type delivery vehicles fitted with low noise units</p>			
<p>Operation of fans</p> <p>Fixed source</p>	<p>Employees / visitors onto site</p>	Air	<p>Efficient extractor fans used and maintained in good condition to avoid excessive noise</p> <p>Forced ventilation systems with automated controls to minimise run time and fan speed</p>	Unlikely	Noise annoyance	Not significant
<p>Alarm system and standby generator</p> <p>Fixed source</p>	<p>Employees / visitors onto site</p>	Air	<p>Weekly system test (required by law) is carried out weekly</p> <p>All electrics and equipment are routinely maintained so that the back-up systems rarely need to be used in practice. (BCM Walker-electrician)</p>	Unlikely	Noise annoyance	Not significant
<p>Pigs</p> <p>Mobile source</p>	<p>Employees / visitors onto site</p>	Air	<p>Noise from pigs may be considered to be a likely cause for complaint during the growing period (no complaints logged)</p> <p>During loading, noise from animals is minimised by careful handling and by prompt removal of the lorry from the site when full (loading occurs twice a week for one month in a four month period)</p>	Unlikely	Noise annoyance	Not significant
<p>Personnel</p> <p>Mobile source</p>	<p>Employees / visitors onto site</p>	Air	<p>Staff and other contractors are required to carry out their work without creating excessive noise from shouting and use of radios, etc</p> <p>Any noisy work is carried out during daylight hours</p>	Unlikely	Noise annoyance	Not significant

Repairs	Employees / visitors onto site	Air	<p>If repairs to the site are required, the work is undertaken with due regard for possible noise nuisance and during the normal working day</p> <p>In the event of major repair work being undertaken which is likely to cause significant noise and disruption, neighbouring residents will be notified in advance.</p> <p>Work carried out during day time hours where residents are at work. Holidays of staff and major repair work are taken into consideration.</p>	Unlikely	Noise annoyance	Not significant
Manure/slurry spreading	Employees / visitors onto site & wildlife	Air	<p>Machinery operated at reasonable times where possible and idling avoided (often requested at night to reduce odour)</p> <p>Equipment maintained to optimum standards</p>	Likely	Noise annoyance	Not significant if managed carefully

Table 3 Assessment of Fugitive Emissions Risk

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
To air						
Dust Sources: <ul style="list-style-type: none"> • Feed • Incinerator ash • Shavings 	Employees / visitors onto site Surrounding vegetation: Covers leaves and inhibits photosynthesis Surrounding land: Nutrient enrichment of soils Contributes to respiratory problems for pigs, and staff	Air	Use of suitable bedding materials and good storage of such materials. Shavings are always covered. Use of pelleted feed delivered in sealed systems and stored in covered containers Incinerator ash is transferred to covered container prior to removal from the site Regular clearing of dust to prevent build up within buildings, on roofs and around vents, as part of the disease control strategy Treatment of lightly contaminated surface water by soak-away	Dust could potentially reach the road and neighbouring houses and surrounding land when a strong wind blows in that direction, which it does around 50 days per year Management actions should prevent this happening	Nuisance: dust on surrounding vegetation, cars, clothing Smothering and direct damage to nearby vegetation Pigs/staff may get stressed and become unwell	Not significant if managed carefully

<p>Ammonia</p> <p>Source: Pig housing and slurry storage, removal and spreading</p>	<p>Employees / visitors onto site</p> <p>Pigs and staff: high levels can cause respiratory problems</p> <p>Also perceived as a nuisance as it contributes to odours</p> <p>Surrounding vegetation: direct toxic effect and changes to sensitive ecosystems</p> <p>Surrounding land: Nutrient enrichment and acidification of soils</p>	<p>Air</p>	<p>Mitigation measures as for odour</p> <p>Feed formulated to match pig requirements and to minimise amount of ammonia produced</p> <p>Rations under periodic review</p> <p>Ventilation and heating control systems designed to provide optimal environment and regularly monitored and maintained</p> <p>Regular monitoring of tank and store contents and maintenance of facilities and equipment</p> <p>Frequency of slurry/manure/litter removal to optimise pen cleanliness</p> <p>Dedicated purpose built facilities for slurry</p> <p>Manure/slurry spread at low level and in accordance with the Manure Management Plan and NVZ rules</p> <p>Fully trained operators</p> <p>Soils regularly analysed and applications made in response to crop requirements to avoid spreading more slurry/manure than is needed</p>	<p>The impact of ammonia on air emissions from the installation has been assessed in the building review and calculations</p> <p>The results demonstrate that there will be little likelihood of impact to nearby wildlife sites</p>	<p>Aerial deposition and direct toxic effect on trees</p> <p>Nutrient enrichment of soils and changes to sensitive ecosystems</p> <p>Respiratory problems in humans and mammals</p>	<p>Not significant</p>
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Zoonoses and notifiable diseases	Human health and livestock health	Air/direct contact	<p>Detailed biosecurity precautions in place, eg frequent stock inspection, use of disinfectants and appropriate clean overalls, boots, etc for staff, visitors and contractors, to prevent spread of disease</p> <p>Secure site visitor policy</p> <p>Livestock monitored for signs of disease and incidents reported quickly</p> <p>Use of a health plan, with specialist veterinary input in place.</p> <p>Quarterly veterinary visits planned although more regular visits common</p>	Unlikely	Human and livestock health implications	Not significant if managed carefully
To water						
<p>Nutrients such as N and P plus organic matter</p> <p>Source: Wash water run off to nearby water course, muck and slurry spreading</p>	<p>Adjacent Water Course</p> <p>Nutrient leaching from soil to surface waters and groundwater, causing eutrophication and increased biochemical oxygen demand (BOD) of watercourses</p>	Land	<p>Curbing prevents wash water entering the nearby water course</p> <p>Used bedding/feed spilt on yard/roadways during clean out is cleaned up</p> <p>Manure management plan followed including NVZ rules for spreading manure and slurry</p>	Unlikely	Pollution of water course leading to eutrophication and poisoning of flora and fauna	Not significant if managed carefully

Spillages from storage and use of pesticides and fuel/chemicals	Vulnerable groundwater beneath site	Land	<p>Management techniques employed aimed at avoiding or minimising use where possible</p> <p>Use of approved chemicals only</p> <p>Operators fully trained and all equipment regularly maintained to avoid any in-field spillage or discharge</p> <p>Regular inspections planned</p> <p>All tanks bunded and compliant with legislation</p>	Unlikely	<p>Contamination of surface and groundwaters</p> <p>Killing of flora and fauna</p>	Not significant
To land						
Ammonia from storage of slurry and housing	Sensitive nature and conservation sites identified in pre-application screening	Air	<p>As for odour and 'To water' above</p> <p>Feed selected to minimise excretion of nutrients</p> <p>Storage sites sited away from sensitive receptors</p>	Likely	<p>Direct toxic effect on trees, nutrient enrichment and acidification of soils</p> <p>Changes to sensitive ecosystems</p>	Not significant if managed carefully

<p>Waste materials, packaging, etc.</p> <p>Source: Non-organic waste storage and disposal</p>	<p>Neighbouring dwellings and surrounding habitats and countryside</p>	<p>Air</p>	<p>Policy to avoid production where possible</p> <p>Dedicated storage areas and facilities</p> <p>Collected by licensed contractors (Bruntons) for re-cycling or disposal</p> <p>Regular checks made for rubbish dumped by third parties</p>	<p>Unlikely</p>	<p>Amenity value of countryside spoilt by rubbish</p> <p>Possibility of causing harm to wildlife</p>	<p>Not significant</p>
Pests						
<p>Flies on manure heap could move off-site and affect nearby residents</p> <p>Flies on slurry</p> <p>Also, birds, rats, etc.</p>	<p>Employees / visitors onto site</p>	<p>Air</p>	<p>Pest management programme in place</p> <p>When washed slurry stores are treated with maggot killer</p> <p>In vulnerable places regular fly stickers and spray is used</p> <p>Food sources covered and secure from pests</p> <p>Pest control programme in operation</p>	<p>Unlikely</p>	<p>Flies and rats are a vector of pollution that can harm human health</p> <p>Concerns about this pollution can cause offence and affect amenity</p>	<p>Not significant if managed carefully</p>

Table 4 Assessment of Accident Risk

What do you do that can harm and what could be harmed			Managing the risk	Assessing the risk		
Hazard	Receptor	Pathway	Risk management	Probability of exposure	Consequence	What is the overall risk?
What has the potential to cause harm?	What is at risk? What do I wish to protect?	How can the hazard get to the receptor?	What measures will you take to reduce the risk? If it occurs – who is responsible for what?	How likely is this contact?	What is the harm that can be caused?	What is the risk that still remains? The balance of probability and consequence.
Spillages from pesticide and biocide handling and storage areas escaping	Potentially polluting liquids flow over yard to clean drain inlet, ditch/stream/pond/swale and surrounding land Also vulnerable groundwater beneath site	Flowing over yard or through cracks in poor impermeable surface and through the ground	Repair any infrastructure and design appropriate containment measures Maintenance and regular inspection procedure designed and implemented Foot dips on good concrete with drains to slurry store located where overflowing gutters will not dilute Removed from site by licensed contractor – skip removal	Very unlikely	Contamination of local groundwater and potential nearby abstractions	Not significant with measures indicated
Fuel oil in storage tank/vehicles escaping the containment	Land, local water course	The surface water drainage system	Regular inspection in accordance with the site maintenance and inspection procedure and complies with SSAFO regulations Concrete base and plastic bund containing tank and fill point	Very unlikely	Contamination of local water course	Not significant
Spillage of slurry, feed and fuel due to operator error when loading and unloading			Standard operating procedures applied for loading and unloading Any spillage of feed around the bins and tanks is immediately cleaned up using materials which are stored nearby			

	Land, local water course	Land, the surface water drainage system	<p>Area drains to slurry store so containment provided</p> <p>The condition of feed bins and tanks is checked frequently so that any damage or leaks can be identified in accordance with the site maintenance and inspection procedure</p> <p>Levels measured to prevent overfilling</p> <p>All suppliers are supervised while on site</p> <p>Overhead pipework checked regularly</p> <p>Fully trained operators</p>	Unlikely	Contamination of local water course	Not significant
Failure to contain firewater or off-site pollutants	Ditches, local water course		Accident Management Plan in place	Unlikely	Contamination of local watercourse and surrounding land	Not significant
Incorrect disposal of wash water	Clean drain, ditches, local water course and soakaways	Drains, ditches, land	<p>Staff trained in correct operation procedures</p> <p>All drains shown on drainage plan</p>	Unlikely	Contamination of ground and surface waters	Not significant
Spillage when loading and emptying incinerator of non SRM material, eg ash containing trace elements, heavy metals, calcium, phosphate and dust	Surrounding land and water courses	Air, land and water	<p>Accident Management Plan in place</p> <p>Regulation and regular inspection of facilities and records kept</p> <p>Impermeable hard standing with liquid collection</p> <p>APHA approved activity includes records and inspections</p>	Unlikely	Contamination of local water course, groundwater, vegetation, soil, etc.	Not significant

Acts of vandalism which cause damage to structures and fittings	Surrounding land, surface and ground waters	Land, water	Site security Regular site checks after working day Bright lights minimising risk	Low	Contamination of soil and or water	Low
Flooding and other storm damage	Surrounding land, surface and ground waters	Land, drains, water courses	Good site layout and design Maintenance of site infrastructure and local flood defences Observe weather forecasts and weather warnings	Low	Water and soil pollution	Low
Power outage causing failure of slurry pumping systems resulting in tank overflow Failure of automatic liquid level control sensors and devices	Surrounding land, surface and ground waters	Land, drains, water courses	Stand-by generator with automatic start-up and switch over	Low	Overflow of storage facilities	Low