

ODOUR

BPEX MODEL TEMPLATE B3.5 6A

Environmental Risk Assessment

Farm name: Grange Farm Corringham Gainsborough

Operator: Mr L Chafer

Permit number: EPR/

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 delivery and storage	Neighbouring dwelling houses within 400m of the installation	Air	Measures as described in 'How to comply with your environmental permit for intensive farming V2 Jan 2010' (EPR 6.09 Sector Guidance Note) Odour Management Plan in place	Unlikely	Odour annoyance	Not significant

ODOUR

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			<p>Feed delivery will be sealed to minimise atmospheric dust. Any spillage of feed around the bin and sheds is immediately cleaned up.</p> <p>The condition of feed bins is checked frequently so that any damage or leaks can be identified and immediately repaired.</p> <p>The unit is relatively isolated so there is minimal risk of dust causing direct odour nuisance.</p>			

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<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. 	Neighbouring dwelling houses within 400m of the installation	Air	<p>Measures as described in 'How to comply-Intensive Farming'.</p> <p>The ventilation system (where applicable) will be regularly adjusted according to the age and requirements of the livestock and weather conditions.</p> <p>The ventilation system will be designed to efficiently remove moisture from the house.</p> <p>Stocking density maintained at or below</p>	Unlikely	Odour annoyance	Not significant

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			levels set out in Welfare Regulations			
Manure and slurry (where applicable) management: <ul style="list-style-type: none"> • Odours arising from poorly managed muck and dirty water/ slurry (where applicable) collection, removal and distribution • The use of insufficient or poor-quality straw 	Neighbouring dwelling houses within 400m of the installation	Air	Measures as described in 'How to comply-Intensive Farming' Controls on feed and ventilation (see above) help to maintain air quality Additional controls include: Insulated building materials to prevent condensation, where applicable Regular maintenance and correct positioning to	Unlikely	Odour annoyance	Not significant

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<ul style="list-style-type: none"> • Spillage of water from drinking systems • Disease and vice outbreaks 			avoid overflow from feed and drinking systems Concrete floors to prevent water ingress and surfaces arranged to avoid build-up of stagnant water Stocking density at optimal levels to prevent overcrowding Pens and yards kept clean Dirty water collection systems enclosed and regularly emptied to avoid anaerobic conditions			

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			Frequent removal of manure and dirty water; wind direction observed Minimal agitation of the dirty water lagoon (where applicable) on removal and potentially odorous spillages cleaned up promptly			
Carcase disposal: <ul style="list-style-type: none"> • Inadequate storage of carcasses on site • On-site disposal of carcasses by incineration. 	Neighbouring dwelling houses within 400m of the installation	Air	Measures as described in 'How to comply-Intensive Farming' Carcasses are placed in sealed containers immediately after they are removed and are promptly disposed of via a	Unlikely	Odour annoyance	Not significant

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			licenced deadstock collector There is no incinerator. All odour complaints are logged and investigated promptly.			
Buildings: <ul style="list-style-type: none"> • Cleaning and disinfection • Emptying dirty water/slurry lagoon (where applicable) • Removal of manure 	Neighbouring dwelling houses within 400m of the installation	Air	Pens and yards kept clean Dirty water collection systems enclosed and regularly emptied to avoid anaerobic conditions Frequent removal of manure and dirty water, wind direction observed	Likely	Odour annoyance	Not significant if carefully managed

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			Minimal agitation of dirty water lagoon (where applicable) on removal and potentially odorous spillages cleaned up promptly			
Odour arising from manure/slurry (where applicable) spreading	Neighbouring dwelling houses within 400m of the installation	Air	As above FYM and dirty water which is landsread is highlighted in the manure management plan and also follows NVZ rules (where applicable) Intermittent activity only	Likely	Odour annoyance	Not significant if carefully managed

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<p>Odour arising from manure and dirty water/slurry (where applicable).</p> <p>Storage – dirty water/slurry lagoon (where applicable) FYM field heaps</p>	<p>Neighbouring dwelling houses within 400m of the installation</p>	<p>Air</p>	<p>Site will operate under odour management plan</p> <p>Feed selection and ration managed to minimise excretion of nutrients</p> <p>Storage areas (including field heaps) sited away from neighbours</p> <p>Areas of open, dirty concrete minimised and cleaned regularly</p> <p>Stores regularly emptied</p> <p>Composting of manure</p>	<p>Likely</p>	<p>Odour annoyance</p>	<p>Not significant if carefully managed</p>

NOISE

Table 2 Assessment of Noise Risk

What do you do that can harm and what could be harmed	Managing the risk	Assessing the risk				
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<p>Noise problems from large vehicles travelling to and from the farm.</p> <p>Mobile source</p>	<p>Neighbouring dwelling houses within 400m of the installation</p>	<p>Air</p>	<p>Measures as described in 'How to comply- Intensive Farming'</p> <p>Vehicles are required to be driven on to and off site with due care and 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 at</p>	<p>Unlikely</p>	<p>Noise annoyance</p>	<p>Not significant if managed carefully</p>

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			social hours and of short duration with minimum stress All vehicles maintained so as to minimise engine noise and are driven slowly to and from the site Roads and tracks maintained to minimise noise produced			
Large vehicles on site for delivering feed, loading live livestock at end of the growing period, removal of muck and dirty	Neighbouring dwelling houses within 400m of the installation	Air	Measures as described in 'How to comply- Intensive Farming' Vehicles have to be well maintained and must be	Unlikely	Noise annoyance	Not significant

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water/slurry (where applicable) from houses, removal of dirty water from storage lagoon (where applicable) Mobile source			driven slowly around the site at all times Engines to be switched off when not in use Vehicles which are fitted with an audible 'vehicle reversing' warning system are generally used only in the daytime Idling of machines avoided and engine revs kept low with an effective silencer where possible			

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			Minimal manual feeding restricted to day working hours. Slurry tanker filling and emptying done as an intermittent activity (where applicable) (exported – third party control) Machinery and equipment sited as far as possible from neighbours			

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Small vehicles travelling to and from the farm eg staff and visitors' cars, courier van deliveries, etc Mobile source	Neighbouring dwelling houses within 400m of the installation	Air	Measures as described in 'How to comply- Intensive Farming' Small vehicles arrive during the normal working day and therefore are seen as low risk	Unlikely	Noise annoyance	Not significant
Feed transfer from lorry to bins and tanks Fixed source	Neighbouring dwelling houses within 400m of the installation	Air	Vehicles are well maintained and designed so that noise during feed transfer is minimised Conveyors and augers not operated when empty	Unlikely	Noise annoyance	Not significant

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			Tipping type delivery vehicles and augers used whenever possible for bulk dry ingredient delivery Blower and vacuum type delivery vehicles fitted with low noise units			
Operation of fans (where applicable) Fixed source	Neighbouring dwelling houses within 400m of the installation (N/A as no fans are used)	Air	Some buildings naturally ventilated When required, the fans (where applicable) suck cool air in, blow it into the livestock sheds. The fans (where applicable) are only in use in hot weather. Fans (where applicable) are	Unlikely	Noise annoyance	Not significant

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			maintained in good condition to avoid excessive noise Fans (where applicable) sited away from neighbours. [Fans N/A]			
Alarm system and standby generator (where applicable) Fixed source	Neighbouring dwelling houses within 400m of the installation, staff and livestock (N/A as alarm system and generator are not present)	Air	Weekly system test (required by law) is carried out, timed in order to minimise nuisance to neighbours All electrics and equipment are routinely maintained so that the back-up systems rarely	Unlikely	Noise annoyance	Not significant

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			need to be used in practice			
Livestock Mobile source	Neighbouring dwelling houses within 400m of the installation	Air	Noise from livestock may be considered to be a likely cause for complaint during the growing period. During loading, noise from animals is minimised by careful handling and by prompt removal of the lorry from the site when full.	Unlikely	Noise annoyance	Not significant
Personnel Mobile source	Neighbouring dwelling houses within 400m of the installation	Air	Staff and other contractors are required to carry out their work without creating excessive noise from	Unlikely	Noise annoyance	Not significant

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			shouting and use of radios, etc			
Repairs	Neighbouring dwelling houses within 400m of the installation	Air	<p>Noise Management Plan in place</p> <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</p>	Unlikely	Noise annoyance	Not significant

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			will be notified in advance			
Manure/dirty water spreading	Neighbouring dwelling houses within 400m of the installation, wildlife	Air	Machinery operated at reasonable times where possible and idling avoided Equipment maintained to optimum standards	Likely	Noise annoyance	Not significant if managed carefully

FUGITIVE EMISSIONS

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?
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To air						
Dust (including bio aerosols) Sources: <ul style="list-style-type: none"> • Straw • Feed 	Neighbouring dwelling houses within 400m of the installation: <ul style="list-style-type: none"> • Nuisance • Contributes to odours • Negative impact on Human health (inhalation) Surrounding vegetation:	Air	Use of suitable bedding materials, where applicable, and good storage of such materials Use of dry feed delivered in sealed systems and stored in covered feed bins Regular clearing of dust to prevent build up within buildings, on vehicles, on roofs and around vents, as part of the disease control strategy Uncontaminated road and yard rainwater is directed into gutters. Dirty water that has arisen from effluent in the buildings is directed to the midden areas and dirty water storage facilities.	Dust could potentially reach the road and neighbouring houses and surrounding land when a strong wind blows in that direction Management actions should	Nuisance: dust on surrounding vegetation, cars, clothing Smothering and direct damage to nearby vegetation Livestock/staff may get stressed and	Not significant if managed carefully

FUGITIVE EMISSIONS

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	<p>Covers leaves and inhibits photosynthesis</p> <p>Surrounding land: Nutrient enrichment of soils</p> <p>Contributes to respiratory problems for livestock and staff</p>			prevent this happening	become unwell	

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<p>Ammonia</p> <p>Source: Livestock housing and manure/slurry/dirty water (where applicable) storage, removal and spreading</p>	<p>Neighbouring dwelling houses within 400m of the installation</p> <p>Livestock and staff: high levels can cause respiratory problems</p> <p>Also perceived as a nuisance as it contributes to odours</p>	Air	<p>Measures as described in ‘How to Comply – Intensive Farming’</p> <p>Mitigation measures as for odour</p> <p>Feed formulated to match livestock requirements and to minimise amount of ammonia produced</p> <p>Rations under periodic review</p> <p>A slurry (where applicable) additive (Active NS) is used, with IPPC approval, to lower the ammonia emissions of the slurry (where applicable) (http://www.calcialiment.com/media/9168/130924-Active-NS-brochure-engelsk.pdf).</p> <p>Provision of sufficient straw in bedding to bind nitrogen, where appropriate</p>	<p>The impact of ammonia on air emissions from the installation has been assessed using the H1 methodology and detailed air dispersion modelling</p> <p>The results demonstrate that there will be little</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>	Not significant

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	<p>Surrounding vegetation: direct toxic effect and changes to sensitive ecosystems</p> <p>Surrounding land: Nutrient enrichment and acidification of soils</p>		<p>Ventilation and heating control systems designed to provide optimal environment and regularly monitored and maintained</p> <p>Covered slurry store (where applicable) fitted with double gate valves</p> <p>Regular monitoring of tank and store contents and maintenance of facilities and equipment</p> <p>Frequency of slurry/manure (where applicable) removal to optimise pen cleanliness</p> <p>Dedicated purpose-built facilities for slurry, dirty water (where applicable) and manure</p> <p>Manure/slurry (where applicable) spread at low level and in accordance with the Manure Management Plan and NVZ rules [exported]</p>	likelihood of impact to nearby wildlife sites		

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			<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 [exported]</p>			
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 daily for signs of disease and incidents reported quickly</p>	Unlikely	Human and livestock health implications	Not significant if managed carefully

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			Use of a health plan, with specialist veterinary input in place.			
To water						
Nutrients such as N and P plus organic matter Source: Wash water run off to nearby watercourse, muck and slurry (where applicable) spreading	Any adjacent watercourses Nutrient leaching from soil to surface waters and groundwater, causing eutrophication and increased biochemical	Land	Used bedding/feed spilt on yard/roadways during clean out is cleaned up promptly Field manure heaps sited away from watercourses and boreholes Manure management plan followed including NVZ rules for spreading manure and slurry (where applicable)	Unlikely	Pollution of water course leading to eutrophication and poisoning of flora and fauna	Not significant if managed carefully

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	oxygen demand (BOD) of watercourses					
Spillages from storage and use of pesticides and fuel/chemicals	Vulnerable groundwater beneath site	Land	Management techniques employed aimed at avoiding or minimising use where possible Use of approved chemicals only Operators fully trained and all equipment regularly maintained to avoid any in-field spillage or discharge All tanks bunded and compliant with legislation	Unlikely	Contamination of surface and groundwaters Killing of flora and fauna	Not significant
To land						

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Ammonia from storage of dirty water, slurry, (where applicable) manure and housing	<p>Sensitive nature and conservation sites identified in pre-application screening</p> <p>There is no SSSI within 500m.</p>	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> <p>Manure stored on impermeable concrete pad</p> <p>There are no SSSI areas within a 500m vicinity</p>	<p>Likely</p> <p>Unlikely</p>	<p>Direct toxic effect on trees, nutrient enrichment and acidification of soils</p> <p>Changes to sensitive ecosystems</p>	<p>Not significant if managed carefully</p> <p>Not Significant</p>

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Waste materials, packaging, etc. Source: Non-organic waste storage and disposal	Neighbouring dwellings and surrounding habitats and countryside	Air	Policy to avoid waste production where possible Dedicated storage areas and facilities Collected by licensed contractors for re-cycling or disposal Regular checks made for rubbish dumped by third parties	Unlikely	Amenity value of countryside spoilt by rubbish Possibility of causing harm to wildlife	Not significant
Pests						

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Flies on manure heap could move off-site and affect nearby residents Also, birds, rats, etc.	Neighbouring dwelling houses	Air	Pest management programme in place Manure heap is regularly inspected to check for maggots and flies Heap will be treated with pesticide and covered with sheeting if flies become an issue Food sources covered and secure from pests Pest control programme in operation	Unlikely	Flies and rats are a vector of pollution that can harm human health Concerns about this pollution can cause offence and affect amenity	Not significant if managed carefully

ACCIDENT RISK

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?
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Spillages from pesticide and biocide handling and storage areas escaping	Potentially polluting liquids flow over yard to clean drains/ditches and surrounding land Also vulnerable groundwater beneath site	Flowing over yard or through cracks in poor impermeable surface and through the ground	Accident Management Plan in place Repair any infrastructure and design appropriate containment measures Maintenance and regular inspection procedure designed and implemented Foot dips on good concrete with drains to dirty	Very unlikely	Contamination of local groundwater and potential nearby abstractions	Not significant with measures indicated

ACCIDENT RISK

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			<p>water system and located where overflowing gutters will not dilute</p> <p>Regular inspection of facilities and records kept</p> <p>Dedicated container for storage with impermeable hard standing within bund</p> <p>Removed from site by licensed contractor</p>			

ACCIDENT RISK

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			Damaged or suspect packaging rejected at time of delivery			
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 bund containing tank and fill point	Very unlikely	Contamination of local water course	Not significant

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			Double valves locked when not in use If spills occur the oil spill equipment is located nearby and clean-up is prompt			
Spillage of slurry (where applicable), manure, feed and fuel due to operator error when loading and unloading	Land, local water course	Land, the surface water drainage system	Standard operating procedures applied for loading and unloading Any spillage of feed around the bins and tanks is immediately cleaned up using	Unlikely	Contamination of local water course	Not significant

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			<p>materials and equipment which are stored nearby</p> <p>Area drains to dirty water lagoon (where applicable) 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</p>			

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			inspection procedure Levels measured to prevent overflowing and sight gauge enclosed by guard Barriers are in place to prevent collision All suppliers are supervised while on site Fully trained operators			
Failure to contain firewater or off-site pollutants	Ditches, local water course		Accident Management Plan in place	Unlikely	Contamination of local watercourse	Not significant

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			<p>Sandbags kept by diesel tank</p> <p>Drain inlets to be covered by sandbags, drain bung inserted, diverter valve closed</p> <p>Stem flow of runoff from edge of yard using sandbags, use loader to push soil into a dam and excavate a sump</p>		and surrounding land	
Incorrect disposal of wash water	Clean drain, ditches, local	Drains, ditches, land	Staff trained in correct operation procedures	Unlikely	Contamination of ground and surface waters	Not significant

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	water course and soakaways		All drains shown on site plan			
Spillage when loading and emptying incinerator of non SRM material, eg ash containing trace elements, heavy metals, calcium, phosphate and dust	Neighbouring dwelling houses Surrounding land and water courses	Air, land and water	N/A – no incinerator	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. Remote from centres of population. Farmer resident at site.	Low	Contamination of soil and or water	Low

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Flooding and other storm damage	Surrounding land, surface and ground waters	Land, drains, water courses	<p>Good site layout and design for purpose</p> <p>Maintenance of site infrastructure and local flood defences</p> <p>Observe weather forecasts and weather warnings</p>	Low	Water and soil pollution	Low
Power outage causing failure of slurry (where applicable) pumping systems resulting in tank overflow	Surrounding land, surface and ground waters	Land, drains, watercourses	<p>Frequent monitoring.</p> <p>Dirty water lagoon (where applicable) emptied with a tanker system.</p>	Low	Overflow of storage facilities	Low

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Failure of automatic liquid level control sensors and devices						
Fire	Livestock, staff, buildings, fuel and oils, chemicals, bedding, feed, local habitats and neighbouring dwellings	Air	Regular inspection and maintenance of equipment	Unlikely	Toxic smoke and other pollutants, surface run-off from firefighting water, surface run-off from failed storage tanks, pipes and stores Exploding gas and fuel canisters and containers	Low

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					<p>Increased numbers of dead animals for disposal</p> <p>Dust and fibres from sheet building material which may contain asbestos</p>	
Below ground dirty water tank and pipe ruptures/overflows (including used disinfectant)	Dirty water flows over yard to clean drain inlet at the back of the office and into local water course	The surface water drainage system	<p>Curbing to prevent water entering gutter/pond/nearby land</p> <p>Use of Defra/NOAH approved disinfectants</p>	Unlikely	Contamination of local water course	Not significant

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			Block off drain inlet with sand bags kept by diesel tank Contact office or duty manager. If necessary contact Environment Agency			

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