**BPEX MODEL TEMPLATE B3.5 6A**

**Environmental Risk Assessment**

**Farm name: Red House Farm Operator: Ford Farms (Suffolk) Ltd Permit number:** EPR/NEW/A001

**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 and offices/workplaces within 400m of the installation | Air | Measures as described in ‘How to comply with your environmental permit for intensive farming- latest version (EPR 6.09 Sector Guidance Note)  Odour Management Plan in place due to sensitive receptors within 400m.  Feed delivery sealed to minimise atmospheric dust. Any spillage of feed around the bins is immediately cleaned up.  The condition of feed bins is checked regularly for integrity, so that any damage or leaks can be identified  All feed ingredients are stored in covered silos. | Unlikely | Odour annoyance | Not significant |
| Odour from the manufacturing and  selection of feed | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | No milling or mixing on site. All bought-in, pelleted feed.  Feed specifications will be prepared by the feed compounder's  nutritionist. Feed targeted to maximise FCR and minimise amount of ammonia produced.  Feed sourced from UFAS (or equivalent) accredited mill. | Unlikely | Odour annoyance | Not significant |
| * 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 and offices/workplaces within 400m of the installation | Air | Measures as described in ‘How to comply-Intensive Farming’.  The ventilation system is adjusted by computer controls (where applicable) according to the requirements of the pigs  The ventilation system will be designed to efficiently remove moisture and stale air from the house.  Stocking density maintained at or below levels set out in Welfare Regulations. | Unlikely | Odour annoyance | Not significant |
| * Manure and Slurry management. * Odours arising from slurry/manure * The use of insufficient or poor quality bedding. * Spillage of water from the drinking system. * Disease problems resulting in wet bedding. | Neighbouring dwelling houses and offices/workplaces 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 bedding quality.  Fully insulated and draught controlled buildings, which prevent condensation and damp patches.  Stocking density at least at farm assured levels.  A veterinary health plan is used and there are regular veterinary visits to help prevent disease outbreaks.  Regular maintenance and correct positioning to avoid overflow from feed and drinking systems  Surfaces prevent water ingress and arranged to avoid build-up of stagnant water  Stocking density at optimal levels to prevent overcrowding.  Building managed for optimum hygiene and cleanliness  Potentially odorous spillages (very unlikely) cleaned up promptly.  Frequent removal of slurry from slatted buildings. Shallow pits.  Sufficient capacity on site for storing over 6 months’ worth of slurry production as and when necessary. Floating cover on lagoons and rigid cover on tank to reduce emissions. Minimal contaminated concrete areas.  Plan to roof over muck pad and associated lagoon to exclude rainwater.  Good quality bedding provided (where applicable) and in sufficient quantities to bind ammonia and liquids and maintain a dry, clean lying area. Wet areas frequently removed, along with mucking out of pens between groups. | Unlikely | Odour annoyance | Not significant |
| Carcase disposal:   * Inadequate storage of carcases on site * On-site disposal of carcases by incineration. | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Measures as described in ‘How to comply-Intensive Farming’  Carcases are burnt on-site in the APHA approved incinerator. Ash is stored on site in secure and leak proof container and disposed of by incorporation in to FYM and application to land (under U15 waste exemption).  Carcases are stored in locked and leak-proof containers before incineration. | Unlikely | Odour annoyance | Not significant |
| Buildings:   * House clean out | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Slurry/Manure removal is done quickly and efficiently by our own staff.  Slurry system all enclosed, removed by vacuum system to tanker before slurry is added under the surface level of the covered above ground store to reduce risk of aerosol creation.  Potentially odorous spillages (very unlikely) cleaned up promptly. | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure/slurry storage and spreading | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | All slurry and manure applied to operator owned land, in accordance with a manure management plan and best practice.  See above for storage measures to reduce emissions | Likely | Odour annoyance | Not significant |

**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** |
| Noise problems from large vehicles travelling to and from the farm.  Mobile source | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Measures as described in ‘How to comply-Intensive Farming’  Vehicles are required to be driven on to and off site with due consideration for neighbours  Deliveries of feed are made only during the daytime, if possible, so that disturbance is minimised  Loading of pigs is carried out in as short a duration whilst maintaining minimum stress. All vehicles are maintained so as to minimise noise. Potholes around the site will be repaired as necessary.  All vehicles maintained so as to minimise engine noise and are driven slowly to and from the site. Engines to be switched off when not in use  Roads and tracks maintained to minimise noise produced  Vehicles fitted with an audible 'vehicle reversing' warning system are generally used only in the daytime  Idling of machines avoided where possible and engine revs kept low with an effective silencer  Noise Management Plan in place as there are sensitive receptors within 400m. | Unlikely | Noise annoyance | Not significant if managed carefully |
| Small vehicles travelling to and from the farm eg staff and visitors’ cars, courier van deliveries, etc    Mobile source | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Measures as described in ‘How to comply-Intensive Farming’  Operators live on site, just outside the installation boundary. Deliveries sometimes occur early in the morning so vehicles could turn up then. Mostly vehicles are modern and well maintained. Other vehicles movements will be during normal working hours and therefore seen as low risk. | Unlikely | Noise annoyance | Not significant |
| Feed transfer from lorry to bins and tanks  Fixed source | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Feed is brought to the site by a modern vehicle and regularly maintained to minimise excessive noise. It is unlikely to be used outside of normal working hours.  Vehicles are well maintained and designed so that noise during feed transfer is minimised  Conveyors and augers not operated when empty  Blower and vacuum type delivery vehicles fitted with low noise units | Unlikely | Noise annoyance | Not significant |
| Operation of fans  Fixed source | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Efficient extractor fans used and maintained in good condition to avoid excessive noise  Forced ventilation systems with automated controls to minimise run time | Unlikely | Noise annoyance | Not significant |
| Alarm system and standby generator  Fixed source | Neighbouring dwelling houses and offices/workplaces within 400m of the installation, staff and pigs | Air | Weekly tests are carried out (required by law) during normal working hours. Equipment is regularly maintained to minimise problems to minimise emergency situations. The generator is housed which keeps the noise level to within the legal limits. Generator outside the installation boundary and not primarily used for the pig enterprise.  It is a fixed unit and tractor run. | Unlikely | Noise annoyance | Not significant |
| Pigs  Mobile source | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Noise from the pigs is not considered to be significant as they are housed in very well insulated buildings which minimise any noise.  During loading, noise from animals is minimised by careful handling and by prompt removal of the lorry from the site when full.  Risk of noise is further reduced by housing the pigs in small and stable groups as far as possible to reduce risk of fighting; by reducing competition at e.g. feed trough; by feeding ad lib; and by maintaining their health and comfort to avoid distress. | Unlikely | Noise annoyance | Not significant |
| Personnel  Mobile source | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | Staff and contractors are required to do their job quietly without excessive noise from shouting and use of radios outside, etc. | Unlikely | Noise annoyance | Not significant |
| Repairs | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | If repairs to the site are required, the work is undertaken with due regard for possible noise nuisance and during the normal working day  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 | Unlikely | Noise annoyance | Not significant |

**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  (including bio aerosols)  Sources:   * FYM * Straw * Feed * Incinerator ash | Neighbouring dwelling houses and offices/workplaces within 400m of the installation:   * Nuisance * Contributes to odours * Human health (inhalation)     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 of good quality (i.e. not excessively dusty and/or mouldy). Stored in covered barn to prevent deterioration.  Bedding applied internally.  Only one solid floor, bedded, house. All others are slatted.  Minimal FYM production.  Regular clearing of dust to prevent build up within buildings, on roofs and around vents, as part of the disease control strategy.  Exhaust fans (where applicable) are designed to mitigate risk of deposits of dust being made on the roof. Only one building has roof fans.  Feed is pelleted, delivered in sealed systems and fed ad lib. Falls to the trough are minimised to avoid creation of dust plumes.  Incinerator ash stored and moved in container to reduce release of ash to the air. Ash is disposed of by incorporation in to FYM and application to land, under U15 waste exemption. | Dust is unlikely to travel outside of the site boundary.  The prevailing wind is away from neighbouring houses. | 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 |
| Ammonia  Source:  Pig housing and manure/slurry storage, removal and spreading | Neighbouring dwelling houses and offices/workplaces within 400m of the installation  Pigs and staff: high levels can cause respiratory problems  Also perceived as a nuisance as it contributes to odours  Surrounding vegetation: direct toxic effect and changes to sensitive ecosystems  Surrounding land: Nutrient enrichment and acidification of soils | Air | Measures as described in ‘How to Comply – Intensive Farming’  Mitigation measures as for odour  Bedding area kept in a dry condition. Feed formulated to match pig requirements at different stages and to minimise amount of ammonia produced.  Rations under periodic review.  Ventilation control systems designed to provide optimal environment and regularly monitored and maintained.  Slats kept clean. Regular removal of slurry from under-slat shallow pits, via vacuum system.  Frequent removal of slurry from slatted buildings. Shallow pits.  Sufficient capacity on site for storing over 6 months’ worth of slurry production as and when necessary. Floating cover on lagoons and rigid cover on tank to reduce emissions. Minimal contaminated concrete areas.  Plan to roof over muck pad and associated lagoon to exclude rainwater.    All slurry and FYM applied to operator owned and managed land and in accordance with a manure management plan.  In straw housing, provision of sufficient straw in bedding to bind nitrogen, where appropriate.  Ventilation control systems designed to provide optimal environment and regularly monitored and maintained  Frequency of slurry/manure removal to optimise pen cleanliness    Dedicated purpose-built facilities for storage of slurry and manure.  Regular monitoring of slurry tank and lagoon contents and maintenance of facilities and equipment  Fully trained operators | No detailed modelling required following screening by the Environment Agency. | Aerial deposition and direct toxic effect on trees  Nutrient enrichment of soils and changes to sensitive ecosystems  Respiratory problems in humans and mammals | Not significant |
| Zoonoses and notifiable diseases | Human health and livestock health | Air/direct contact | Detailed biosecurity precautions in place, eg changing area, defined biosecure area, visitor and vehicle protocols, use of disinfectants, PPE.  Secure site.  Livestock monitored for signs of disease and incidents reported quickly  Use of a health plan, with specialist veterinary input in place. | Unlikely | Human and livestock health implications | Not significant if managed carefully |
| **To water** |  |  |  |  |  |  |
| Nutrients such as N and P plus organic matter  Source: Wash water run off to nearby water course, manure and slurry spreading | Nutrient leaching from soil to surface waters and groundwater, causing eutrophication and increased biochemical oxygen demand (BOD) of watercourses | Land | Wash water is collected in slurry system. All enclosed and with sufficient contingency margin to prevent overflow.  All contaminated outside area draining to slurry storage.  Lagoons are clay lined.  Feed spilt on yard/roadways (unlikely) is cleaned up promptly  Bunded muck pad with effluent capture.  All storage and spreading of muck/slurry will be in accordance with the regulations and good practice.  All on site storage meet SSAFO regulations and structures are inspected frequently as part of the inspection and maintenance programme | 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 | 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 spillage or discharge  Fuel and chemicals stored in secured and bunded containers, meeting all relevant regulatory requirements. | Unlikely | Contamination of surface and groundwaters  Killing of flora and fauna | Not significant |
| Spillages entering direct pollution pathway, i.e. the on-site borehole | Vulnerable groundwater beneath site | Borehole | Borehole housed and is located outside of the installation and without any risk of direct pollution pathway from installation.  Trays under slurry connection pipes  Minimum of annual water tests (independently tested), taking samples as close as possible from source, checking total TVC and coliform levels (Red Tractor requirement).  Risk of spillages and leaks mitigated by frequent inspection and maintenance of all equipment, vehicles and infrastructure.  Staff trained in Emergency Action Plan and materials and equipment readily available to contain spills. | unlikely | Contamination of groundwaters | Not significant |
| **To land** |  |  |  |  |  |  |
| Ammonia from storage of slurry/FYM and housing | Sensitive nature and conservation sites identified in pre-application screening  Is there a SSSI within 500m? | Air | As for odour and ‘To water’ above  No SSSI within 500m. Nearest is 1.6km at the nearest point. Geological designation, not sensitive to ammonia. | Unlikely | Direct toxic effect on trees, nutrient enrichment and acidification of soils  Changes to sensitive ecosystems  . | Not significant if managed carefully |
| Waste materials, packaging, etc.  Source: Non-organic waste storage and disposal | Neighbouring dwellings and surrounding habitats and countryside | Air | Policy to avoid 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** |  |  |  |  |  |  |
| Flies on e.g. manure heap could move off-site and affect nearby residents  Also, birds, rats, etc. | Neighbouring dwelling houses and offices/workplaces and food factory within 400m of the installation | Air | Pest management programme in place  Manure heap monitored daily for signs of pests, including flies. Manure exported from the site frequently. Minimal quantities stored at any one time.  Food sources covered and secure from pests | 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 |
| Emissions from the incinerator (incl. Exhaust from gas combustion, and ash from incineration) | Neighbouring dwelling houses and offices/workplaces within 400m of the installation | Air | APHA approved incinerator, within emissions guidelines. Incinerator operated intermittently. Cleaning out ash at manufacturers recommended intervals. | Very Unlikely |  |  |

**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 water soakaways/surrounding land/vulnerable groundwater beneath site | Flowing over yard or through cracks in poor impermeable surface and through the ground | Accident Management Plan in place  Repair and maintain any infrastructure and have appropriate containment measures.  Any pesticides only applied by qualified staff.  Maintenance and regular inspection procedure designed and implemented  Foot dips on good concrete – and undercover or covered to prevent rainwater dilution/overflowing.  Regular inspection of facilities and records kept  Dedicated container for storage with impermeable hard standing within bund  Removed from site by licensed contractor  Damaged or suspect packaging rejected at time of delivery | 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, groundwater | The surface water drainage system | Tanks are bunded and on impermeable surface. Tanks regularly inspected for damage. Collision protected. Any spillage will be contained using materials held on site. | Unlikely | Contamination of local groundwater and potential nearby abstractions | Not significant with measures indicated |
| Spillage of feed, manure, incinerator ash or fuel due to operator error when loading and unloading | Land, groundwater | Land, the surface water drainage system | Standard operating procedures applied for loading and unloading  The feed is contained in a sealed system.  Any spillage cleaned up immediately.  Systems and equipment inspected regularly in accordance with the site maintenance and inspection procedure.  Bins and tanks collision protected.  Levels measured to prevent overfilling and sight gauge enclosed by guard.  All suppliers are supervised while on site  Overhead pipework routed through buildings.  No mill and mix on site.  Fully trained operators | Unlikely | Contamination of local groundwater and potential nearby abstractions | Not significant with the measures indicated |
| Slurry tanks overflow | Slurry flows over yard and into natural soakaway | The surface water drainage system | Significant slurry storage capacity with contingency margin (allowing for 10 weeks’ worth of production under slats).  As the only outside contaminated area is a small, bunded muck pad which drains to an associated lagoon, excessive rainfall is very unlikely to cause a problem for slurry storage capacity.    Store contents monitored daily and ahead of any removal of slurry from buildings.  There are steps up the side of the above ground store to enable monitoring of the store contents and levels before tanker emptying. | Very unlikely | Contamination of local groundwater and potential nearby abstractions | Not significant with the measures indicated |
| Failure to contain firewater or off-site pollutants | Natural soakaways  Groundwater |  | Accident Management Plan in place  Firewater would be directed to the slurry system and removed by tankers.  Straw bales/ sandbags are available for containment to protect natural soakaways or drain inlets.  Contaminants to be contained and removed or directed to slurry storage as appropriate.  See Emergency Action Plan. | Unlikely | Contamination of local groundwater and potential nearby abstractions and surrounding nearby land | Not significant with measures indicated. Significant containment capacity. |
| Incorrect disposal of wash water | Natural soakaways, groundwater and nearby land | The surface water drainage system | Staff trained in correct operation procedures  All drainage routes shown on drainage plan  All wash water automatically collected to slurry system from housing. | Unlikely | Contamination of ground and surface waters | Not significant |
| Acts of vandalism which cause damage to structures and fittings | Surrounding land, surface and ground waters | Land, water | Site security. Red House Farm can only be accessed by passing a residence lived in by the operators. Farm gates will be kept shut out of hours. Sheds, stores and equipment are securely locked at night. Signs are placed around the perimeter to warn unauthorised people against entering the site  There is a public footpath through the installation and precautions are taken for security and biosecurity as well as health and safety. | Low | Contamination of soil and or water | Low |
| Flooding and other storm damage | Surrounding land, surface and ground waters | Land, water | The site is mostly considered to be at “very low risk” of flooding, though the areas closer to the adjacent ponds may be considered “low risk”.  Good site layout and design.  Maintenance of site infrastructure.  Observe weather forecasts and weather warnings | Low | Water and soil pollution | Low |
| Fire | Livestock, staff, buildings, fuel and oils, chemicals, bedding, feed, local habitats and neighbouring dwellings | Air | Refer to Fire Prevention Plan below.  Regular inspection and maintenance of equipment.  Fire alarms. | Unlikely | Toxic smoke and other pollutants, surface run-off from firefighting water, surface run-off from failed storage tanks, pipes and stores  Increased numbers of dead animals for disposal  Dust and fibres from sheet building material. | Low |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Fire Prevention Plan | | | | | |
| What can do harm and could be harmed | | Managing the risk | | Assessing the risk | |
| Hazard | Possible cause of fire | Risk Management | Probability of exposure | Consequence | What is the overall risk? |
| Straw bales | Arson | Straw bales not stored within the installation.  Farm gates will be kept shut out of hours.  Operators live in the houses on site. Sheds are separated from each other, allowing for some fire break margin. | Unlikely | Fire | As long as precautions are taken, there is little more that can be done. |
| Incinerator fire  Gas explosion | Malfunction | Machinery is tested at regular intervals by an approved and licenced contractor.  Incinerator housed away from main building by a fire break. | Unlikely | Fire  Flood | Not significant if managed carefully |
| Shed | Electrical fire | Electrics are checked. Fire extinguishers available in the control rooms. Sheds constructed in steel. Most sheds are slatted, so reduced flammable materials. | Unlikely | Fire | Not significant if managed carefully |
| Shed | Fire spread from outside | The areas around the sheds are kept free of vegetation and build up of storage materials or equipment. Sheds constructed in steel. There are escape doors at strategic locations on each building. | Very Unlikely | Fire | Unlikely |

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