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

**Environmental Risk Assessment**

**Farm name: Manor Farm Operator: J A Fry Ltd Permit number:** **EPR/UP3037FQ/V003**

**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 | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | 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  Feed delivery will be sealed to minimise atmospheric dust. Feed pelleted, thereby binding together dusty ingredients. Any spillage of feed around the bin and sheds is immediately cleaned up.  The condition of feed bins is checked frequently so that any damage or leaks can be identified and immediately repaired.  The unit is relatively isolated and there is minimal risk of dust causing direct odour nuisance. | 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. | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Measures as described in ‘How to comply-Intensive Farming’.  All buildings are naturally ventilated, with automatically controlled gale breakers. Stocking density maintained at or below levels set out in Welfare Regulations.  Frequent scraping out of scrape passages maintains a clean and dry bedding and a good air quality. | Unlikely | Odour annoyance | Not significant |
| Manure and slurry management:   * Odours arising from poorly managed muck and dirty water/ slurry collection, removal and distribution * The use of insufficient or poor-quality straw * Spillage of water from drinking systems * Disease and vice outbreaks | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Measures as described in ‘How to comply-Intensive Farming’  Regular maintenance and correct positioning to avoid overflow from feed and drinking systems  Concrete floors to prevent water ingress and surfaces arranged to avoid build-up of stagnant water. Dirty water and effluent captured and stored appropriately. Muck store roofed over.  Stocking density at optimal levels to prevent overcrowding. Pigs carefully managed to mitigate risks of disease and vice and to tackle any problems arising promptly and with veterinary supervision where appropriate.  Pens kept clean.  Good quality straw used.  Wash water and effluent from the muck store is collected in the dirty water stores (DW1 and DW2). The waste water storage is underground and contained. Effluent from the FYM store is directed to this waste water store along with all wash water and lightly contaminated water from the site.  Dirty water regularly removed to avoid anaerobic conditions.  Frequent removal of manure; wind direction observed  Potentially odorous spillages cleaned up promptly | Unlikely | Odour annoyance | Not significant |
| Carcase disposal:   * Inadequate storage of carcases on site * On-site disposal of carcases by incineration. | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Measures as described in ‘How to comply-Intensive Farming’  Carcases are placed in sealed containers immediately after they are removed and are promptly disposed of via a licenced deadstock collector  There is no incinerator.  All odour complaints are logged and investigated promptly. | Unlikely | Odour annoyance | Not significant |
| Buildings:   * Cleaning and disinfection * Emptying dirty water/slurry lagoon * Removal of manure | There are no sensitive receptors within 400m of the installation boundary | Air | Pens and yards kept clean  No slurry.  Frequent removal of manure and dirty water, wind direction observed  Potentially odorous spillages cleaned up promptly | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure/slurry spreading | There are no sensitive receptors within 400m of the installation boundary | Air | As above  FYM and dirty water which is land-spread is highlighted in the manure management plan and also follows NVZ rules  Intermittent activity only | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure and dirty water/slurry.  Storage – dirty water/slurry lagoon FYM field heaps | There are no sensitive receptors within 400m of the installation boundary | Air | Site will operate under odour management plan  Feed selection and ration managed to minimise excretion of nutrients  Storage areas (including field heaps) sited away from neighbours  Areas of open, dirty concrete minimised and cleaned regularly  Muck pad roofed over and dirty water tank underground.  Stores regularly emptied  Composting of manure | 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** |
| Noise problems from large vehicles travelling to and from the farm.  Mobile source | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Measures as described in ‘How to comply-Intensive Farming’  Vehicles are required to be driven on to and off site with due care and consideration for neighbours  Deliveries of feed and fuel are made only during the daytime, if possible, so that disturbance is minimised  General animal movements made at 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 | Unlikely | Noise annoyance | Not significant if managed carefully |
| Large vehicles on site for delivering feed, loading live livestock at end of the growing period, removal of muck and dirty water/slurry from houses, removal of dirty water from storage lagoon  Mobile source | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Measures as described in ‘How to comply-Intensive Farming’  Vehicles have to be well maintained and must be 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  Feed system is ad-lib.  Dirty water tanker filling and emptying done as an intermittent activity  Machinery and equipment sited as far as possible from neighbours | Unlikely | Noise annoyance | Not significant |
| Small vehicles travelling to and from the farm eg staff and visitors’ cars, courier van deliveries, etc    Mobile source | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | 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 | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | 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 |
| Alarm system and standby generator | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | All natural ventilation, so no alarm system required.  All electrics and equipment are routinely maintained so that the back-up systems rarely need to be used in practice. | Unlikely | Noise annoyance | Not significant |
| Livestock  Mobile source | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Noise from livestock may be considered to be a likely cause for complaint during the growing period. Adlib feeding, small group sizes and generous stocking densities reduces likelihood of noise.  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 | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Staff and other contractors are required to carry out their work without creating excessive noise from shouting and use of radios, etc | Unlikely | Noise annoyance | Not significant |
| Repairs | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Noise Management Plan in place  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 |
| Manure/dirty water spreading | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Machinery operated at reasonable times where possible and idling avoided  Equipment maintained to optimum standards | 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  (including bio aerosols)  Sources:   * Straw * Feed | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m    Surrounding vegetation: Covers leaves and inhibits photosynthesis  Surrounding land: Nutrient enrichment of soils  Contributes to respiratory problems for livestock and staff | Air | Use of suitable bedding materials of good quality, and good storage of such materials  Use of dry pelleted 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 gale breakers, as part of the disease control strategy.  Uncontaminated road and yard rainwater is directed into clean water sinks and ultimately drains in to a ditch. Dirty water that has arisen from effluent in the buildings is directed to the dirty water store under the muck store. | Dust could potentially reach the road and neighbouring houses and surrounding land when a strong wind blows in that direction  Management actions should prevent this happening | Nuisance: dust on surrounding vegetation, cars, clothing  Smothering and direct damage to nearby vegetation  Livestock/staff may get stressed and become unwell | Not significant if managed carefully |
| Ammonia  Source:  Livestock housing and manure/slurry/dirty water storage, removal and spreading | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m  Livestock 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  Feed formulated to match livestock requirements and to minimise amount of ammonia produced  Rations under periodic review  Provision of sufficient straw in bedding to bind nitrogen  All buildings are naturally ventilated. Air quality regularly monitored (sensory test) and recorded, and maintained  Regular monitoring of FYM store and dirty water store and maintenance of facilities and equipment.  Frequency of dirty water/manure removal to optimise pen cleanliness    Dedicated purpose built facilities for dirty water and manure.  There is no slurry production. Wash water, lightly contaminated yard water and effluent from the muck store is collected in the wash water store. This is tested regularly and the DM content is shown to be under 1%. The dirty water storage is underground. Effluent from the FYM store is directed to this waste water store along with all wash water and lightly contaminated water from the site.  Manure and dirty water spread at low level and in accordance with the Manure Management Plan and NVZ rules  Fully trained operators  Soils regularly analysed and applications made in response to crop requirements to avoid spreading more dirty water/manure than is needed | The impact of ammonia on air emissions from the installation has been assessed using the H1 methodology and detailed air dispersion modelling  The results demonstrate that there will be little likelihood of impact to nearby wildlife sites | 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 frequent stock inspection, use of disinfectants and appropriate clean overalls, boots, etc for staff, visitors and contractors, to prevent spread of disease  Secure site visitor policy  Livestock monitored daily 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, muck and slurry spreading | Nutrient leaching from soil to surface waters and groundwater, causing eutrophication and increased biochemical oxygen demand (BOD) of watercourses | 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 dirty water | 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 in-field spillage or discharge  Diesel tank bunded and compliant with legislation | Unlikely | Contamination of surface and groundwaters  Killing of flora and fauna | Not significant |
| **To land** |  |  |  |  |  |  |
| Ammonia from storage of dirty water, slurry, manure and housing | Sensitive nature and conservation sites identified in pre-application screening  No SSSI within 2km radius of installation boundary | Air | As for odour and ‘To water’ above  Feed selected to minimise excretion of nutrients  Storage sites sited away from sensitive receptors  Manure stored on impermeable concrete pad, roofed over, and then moved to temporary field stores.  There are no SSSI areas within a 2km vicinity.  There are no SPA, SAC, or RAMSAR sites, or local nature reserves, within 5 km.  There is one site of special scientific interest (SSSI) within 5km for the installation, River Hull Headwaters SSSI. In addition, there are 5 local wildlife sites (LWS) within 2km. Pre-application advice (Appendix 1) concluded that no detailed modelling was required for the new proposal. | Likely  Unlikely | Direct toxic effect on trees, nutrient enrichment and acidification of soils  Changes to sensitive ecosystems | Not significant if managed carefully  Not Significant |
| 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** |  |  |  |  |  |  |
| Flies on manure heap could move off-site and affect nearby residents  Also, birds, rats, etc. | There are no sensitive receptors within 400m of the installation boundary, except for the operator’s residence within 100m | Air | Pest management programme in place  Manure heap is regularly inspected to check for maggots and flies  Manure store is roofed over.  Field heaps 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 |

**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 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 water system and located where overflowing gutters will not dilute. Unused footdips disposed of in to dirty water store.  Regular inspection of facilities and records kept  Dedicated container for storage. Minimal quantities held at any one time. Store would contain any spillages.  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, 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  Double valves locked when not in use  If spills occur the oil spill equipment is located nearby and clean-up is prompt | Very unlikely | Contamination of local water course | Not significant |
| Spillage of slurry, 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 materials and equipment which are stored nearby  Area drains to dirty water collection so containment provided  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  Levels measured to prevent overfilling and sight gauge enclosed by guard  Barriers are in place to prevent collision  All suppliers are supervised while on site  Fully trained operators | 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  Sandbags kept by diesel tank  Drain inlets to be covered by sandbags, drain bung inserted, diverter valve closed  Stem flow of runoff from edge of yard using sandbags, use loader to push soil into a dam and excavate a sump | 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 | Staff trained in correct operation procedures  All drains shown on site plan | 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 | 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. Gated entrance. | 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 for purpose  Maintenance of site infrastructure and local flood defences  Not in flood risk area.  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 | Frequent monitoring.  Dirty water store emptied with a tanker system.  Storage capacity very unlikely to be reached before emptying – significant contingency margin. | Low | Overflow of storage facilities | Low |
| Fire | Livestock, staff, buildings, fuel and oils, chemicals, bedding, feed, local habitats | 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  Increased numbers of dead animals for disposal  Dust and fibres from sheet building material which may contain asbestos | Low |
| 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 | Curbing to prevent water entering clean water sinks/nearby land  Use of Defra/NOAH approved disinfectants  Storage capacity very unlikely to be reached before emptying – significant contingency margin.  Contact office or duty manager. If necessary, contact Environment Agency | Unlikely | Contamination of local water course | Not significant |

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