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

**Environmental Risk Assessment**

**Farm name: Moorside Farm Operator: PA & S Copeland 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 | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | 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 placeFeed 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. | 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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | Measures as described in ‘How to comply-Intensive Farming’. All buildings are naturally ventilated and designed to enable optimum air movement. Stocking density maintained at or below levels set out in Welfare Regulations. Frequent scraping out of scrape passages (where applicable) maintains a clean and dry bedding and a good air quality. Wet areas of deep bedded systems typically removed on a monthly basis, or as needed.  | 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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | Measures as described in ‘How to comply-Intensive Farming’Regular maintenance and correct positioning to avoid overflow from feed and drinking systemsConcrete floors to prevent water ingress and surfaces arranged to avoid build-up of stagnant water. Dirty water and effluent captured and stored appropriately. 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, lightly contaminated yard water and effluent from the muck pads and buildings is collected in the dirty water stores which are located adjacent to each muck pad. The waste water storage is underground and contained. Dirty water regularly removed to avoid anaerobic conditions to slurry lagoon, by tanker or pipe.Underground rigid covered tanks within the midden areas, linked by pipe to a lagoon to the North East. Lagoon has low-tech floating cover. Slurry introduced to lagoon under the surface to reduce aerosol effect.6 month storage capacity achieved Frequent removal of manure from muck pads to temporary field heaps (every 10-12 weeks); wind direction observedPotentially 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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | 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 collectorThere is no incinerator.All odour complaints are logged and investigated promptly. | Unlikely | Odour annoyance  | Not significant |
| Buildings: * Cleaning and disinfection
* Emptying dirty water/slurry stores
* Removal of manure
 | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | Pens and yards kept cleanFrequent removal of manure and dirty water, wind direction observedPotentially odorous spillages cleaned up promptly | Likely | Odour annoyance | Not significant if carefully managed |
| Odour arising from manure/slurry spreading | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | As aboveFYM and dirty water land-spreading is highlighted in a 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 tanks FYM field heaps | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | Site will operate under odour management planFeed selection and ration managed to minimise excretion of nutrientsAll FYM and dirty water is removed from the site on a regular basis (exported to separate sites; around 75% of muck is exported to a neighbour (3rd party) and the remaining 25% is applied to land owned and managed by the operators.  Areas of open, dirty concrete minimised and cleaned regularlyDirty water tanks underground. Lagoon has low tech floating cover.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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | 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 minimisedGeneral animal movements made at social hours and of short duration with minimum stressAll 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 from houses and muck pads, removal of dirty water from storage tanksMobile source | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | 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 timesEngines to be switched off when not in useVehicles which are fitted with an audible 'vehicle reversing' warning system are generally used only in the daytimeIdling of machines avoided and engine revs kept low with an effective silencer where possibleFeed system is ad-lib.Dirty water tanker filling and emptying done as an intermittent activityMachinery 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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | 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 tanksFixed source | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | Vehicles are well maintained and designed so that noise during feed transfer is minimised Conveyors and augers not operated when emptyBlower and vacuum type delivery vehicles fitted with low noise units | Unlikely | Noise annoyance | Not significant |
| Alarm system and standby generator | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | 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.No fixed generator | Unlikely | Noise annoyance | Not significant |
| LivestockMobile source | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | Noise from livestock may be considered to be a likely cause for complaint during the growing period. Adlib feeding, smaller 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 |
| PersonnelMobile source | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | 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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | Noise Management Plan in placeIf 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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) | Air | All manure and dirty water is removed to other sites. Machinery operated at reasonable times where possible and idling avoidedEquipment 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 two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators) Surrounding vegetation: Covers leaves and inhibits photosynthesisSurrounding land: Nutrient enrichment of soilsContributes 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/boarding, as part of the disease control strategy.Uncontaminated road and yard rainwater is directed into clean water pathways, releasing to dykes located to the East and West of the installation. Dirty water that has arisen from the buildings is directed to the dirty water stores. | Dust could potentially reach the road and neighbouring houses and surrounding land when a strong wind blows in that directionManagement actions should prevent this happening | Nuisance: dust on surrounding vegetation, cars, clothingSmothering and direct damage to nearby vegetationLivestock/staff may get stressed and become unwell | Not significant if managed carefully |
| AmmoniaSource: Livestock housing and manure/slurry/dirty water storage, removal and spreading | There are two sensitive receptors within 400m of the installation boundary, including one within 100m (both residences are associated with the operators)Livestock and staff: high levels can cause respiratory problemsAlso perceived as a nuisance as it contributes to odoursSurrounding vegetation: direct toxic effect and changes to sensitive ecosystemsSurrounding land: Nutrient enrichment and acidification of soils | Air | Measures as described in ‘How to Comply – Intensive Farming’Mitigation measures as for odourFeed formulated to match livestock requirements and to minimise amount of ammonia producedRations under periodic reviewProvision of sufficient straw in bedding to bind nitrogenAll buildings are naturally ventilated. Air quality regularly monitored and maintained.Regular monitoring of FYM stores and dirty water stores 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. Wash water, lightly contaminated yard water and effluent from the muck pads and buildings is collected in the stores. This is tested regularly and the DM content is shown to be under 1%. The dirty water storage tanks are underground and enclosed. All FYM and dirty water removed regularly from site to separate sites that are under the control of the operators. The lagoon is within the permitted installation area, though it is located over 350m from the pig buildings. The permitted area also includes the pipe pathway connecting the underground stores to the lagoon. Manure and dirty water will be spread by fully trained operators at low level and in accordance with the Manure Management Plan and NVZ rules, and with the soil conditions and crop requirements.  | The impact of ammonia on air emissions from the installation has been assessed using the H1 methodology and air dispersion modelling by the pre-application screening team. No detailed modelling required. The results demonstrate that there will be little likelihood of impact to nearby wildlife sites | Aerial deposition and direct toxic effect on treesNutrient 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 diseaseSecure site visitor policyLivestock monitored daily for signs of disease and incidents reported quicklyUse 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 matterSource: 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.Concrete, impermeable, surfaces collect all contaminated water – thereby protecting surrounding land and water. Field manure heaps are sited away from watercourses and boreholes and manure and dirty water will be spread by fully trained operators at low level and in accordance with the Manure Management Plan and NVZ rules, and with the soil conditions and crop requirements.  | 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 possibleUse of approved chemicals onlyOperators fully trained and all equipment regularly maintained to avoid any in-field spillage or dischargeNo fuel storage within installation boundary or related primarily with the pig enterprise.  | Unlikely | Contamination of surface and groundwatersKilling 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  | Air | As for odour and ‘To water’ aboveFeed selected to minimise excretion of nutrientsStorage sites sited furthest away from nearest sensitive receptorsThe site is within a Surface Water Nitrate Vulnerable Zone (River Hull from Arram Beck to Humber NVZ) and is within 5km of two SSSI designated sites, Tophill Low (approx. 4.7km at closest point), River Hull Headwaters (approx. 4.6km at closest point). There are no Ramsar, SAC or SPA designations within 5km.  | Unlikely (refer to Appendix 1a for pre-application screening. No detailed modelling required) | Direct toxic effect on trees, nutrient enrichment and acidification of soilsChanges 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 waste production where possibleDedicated storage areas and facilitiesCollected by licensed contractors for re-cycling or disposalRegular checks made for rubbish dumped by third parties | Unlikely | Amenity value of countryside spoilt by rubbishPossibility of causing harm to wildlife | Not significant |
| **Pests** |  |  |  |  |  |  |
| Flies on manure heap could move off-site and affect nearby residents Also, birds, rats, etc. | Neighbouring dwellings | Air | Pest management programme in placeManure pads and slurry tanks and lagoon are regularly inspected to check for maggots and fliesManure is exported typically every 10-12 weeks, reducing potential for pests. Ponding of contaminated water avoided. Underground dirty water stores are emptied frequently and are enclosed.Food sources covered and secure from pestsPest control programme in operation | Unlikely | Flies and rats are a vector of pollution that can harm human healthConcerns 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 landAlso 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 measuresMaintenance and regular inspection procedure designed and implementedFoot dips on good concrete with drains to dirty water system and located where overflowing gutters will not dilute. Unused footdips disposed of into dirty water stores.Regular inspection of facilities and records keptDedicated container for storage. Minimal quantities held at any one time. Store would contain any spillages. Removed from site by licensed contractorDamaged 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 | No fuel stored on site. If spills occur from vehicles 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 nearbyArea 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 procedureLevels measured to prevent overfilling and sight gauge enclosed by guardBarriers are in place to prevent collisionAll suppliers are supervised while on siteFully trained operatorsSlurry storage facilities inspected regularly for signs of damage, leaks or risk of overflowing. Pipe also regularly inspected as part of any event of pumping slurry from the tanks to the lagoon.  | Unlikely | Contamination of local water course | Not significant |
| Failure to contain firewater or off-site pollutants | Ditches, local water course |  | Accident Management Plan in placeDrain inlets to be covered by sandbags, drain bung inserted. Protect clean water. pathwaysStem 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 proceduresAll 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. Operators live on site and in neighbouring property.  | 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 purposeMaintenance of site infrastructure and local flood defencesNot 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 overflowFailure of automatic liquid level control sensors and devices | Surrounding land, surface and ground waters | Land, drains, water courses  | N/A – no slurry system | N/A | Overflow of storage facilities | Low |
| Fire | Livestock, staff, buildings, fuel and oils, chemicals, bedding, feed, local habitats | Air | Regular inspection and maintenance of equipmentMaintenance of tidy site and fire break areas between buildings. Emergency plan displayed on site and in office, details response plan and contacts – including assembly point and livestock removal and management plan.B&B pig company, vet and deadstock collectors on call.  | Unlikely | Toxic smoke and other pollutants, surface run-off from firefighting water, surface run-off from failed storage tanks, pipes and storesExploding gas and fuel canisters and containersIncreased numbers of dead animals for disposalDust and fibres from sheet building material which may contain asbestos | Low |
| Below ground dirty water tank and pipe ruptures/overflows (including used disinfectant) | Clean drain inlets and soakaways | The surface water drainage system | Curbing to prevent water entering clean water pathways/nearby landPipe regularly inspected and monitored through events of pumping slurry from the underground tanks to the lagoon.Use of Defra/NOAH approved disinfectantsStorage 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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