**Dust and Bioaerosol Management Plan**

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

**Date:** August 2024  **Prepared by:** L Bentley

**Introduction**

This bespoke Dust and Bioaerosol Management plan has been prepared to support the overall Environmental Management System in place at Manor Farm. The overriding principle of this plan is to ensure the day-to-day activities are carried out in accordance with this document to help minimise the overall environmental impact. The permit operators live within 100m of the installation boundary. There are no other sensitive receptors within 400m, with the next nearest curtilage being at 495m.

There have been no previous issues relating to odour, dust, noise or flies in relation to the farm.

**Setting**

The installation is located at National Grid Reference TA 01164 52570. Please refer to Appendix 4.

Figure 1 shows the location of the installation and of the receptors which have been considered in this odour management plan.

Figure 1: Sensitive receptors

The purpose of this Dust and Bioaerosol Risk Management Plan is to:

* Establish the likely source of dust and bioaerosol arising from the farm
* Set out procedures at the farm to mitigate or minimise the risk
* Formalise an effective method of dealing with any complaints quickly and effectively

**Potential Sources**

In accordance with the document, ‘How to comply with your environmental permit for intensive farming’, a risk assessment of dust and bioaerosol pollution was performed.

As a result, the following sources have been identified as contributing to a potential low risk dust/bioaerosol source:

* Dust and bioaerosol emissions from feed selection and storage (all delivered in, no milling or mixing on site)
* Dust and bioaerosol emissions from bedding material
* Dust and bioaerosol emissions from manure storage
* Dust and bioaerosol emissions ventilation
* Dust and bioaerosol emissions cleanout
* Dust and bioaerosol emissions housing
* Dust emissions from yard areas
* Dust and bioaerosol emissions from carcase storage and disposal

**Pathways and receptors**

The pathway for all of the above sources is via the atmosphere. The wind direction will significantly influence how receptors are affected. We have not received any complaints from neighbours relating to dust or bioaerosols from the farm.

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| **Odour related issues** | Actions taken to minimise odour | **Completion date** |
| Effects of diet on bioaerosols, dust and ammonia emissions (feed selection) | * Feed composition is closely matched to pigs’ requirements, especially protein
* Diets are ad-lib dry pelleted feed with minimal falls into troughs to reduce dust emissions
* Diets are continually reviewed with a professional nutritionist to ensure good performance
* Records of crude protein levels and diet formulation are kept in the site office.
 | On-going |
| Manure storage | * Manure is scraped from passages every day to ensure that the pens remain dry and clean.
* Gradient of the passages prevents ponding of dirty water, draining to the manure pad which has a dirty water store.
* Manure is removed from the site approximately monthly. Increased bioaerosol and dust emissions are expected when moving manure. We will avoid removing manure wherever possible when the wind direction is blowing towards nearest receptors.
* Wash water, effluent and lightly contaminated water is captured directly in to the dirty water store. Effluent production is reduced due to the muck store being roofed over.
 | On-going |
| Slurry/Dirty water storage | * Dirty water store sited as far as possible from nearest receptors. Underground tank.
* Unnecessary running of vacuum pumps avoided.
* Increased bioaerosol emissions to be expected when store out-loaded, so observe wind direction if cropping/soil constraints allow.
 | On-going |
| Cleanliness of yard areas | * Yard surfaces are properly maintained
* Yard areas are kept clear from build up of dust
* The drainage system works effectively to prevent ponding of dirty water.
 | On-going as part of the inspection and maintenance programme |
| All housing and management | * New builds and refurbishments are all in line with BAT requirements
* All pens and stock are checked for cleanliness as part of daily welfare checks
* All pens and buildings are cleaned out in accordance with written cleaning plan
* Potentially odorous/dusty spillages (feed ingredients, manure, etc.) are cleaned up promptly
* Stocking density maintained at or below levels set out in Defra Welfare Regulations
* Ventilation corresponds to animals’ requirements to optimise the housed environment for the pigs and air quality conditions. Air quality is checked as part of minimum twice daily checks on stock.
* Build-up of waste feed in front of feeders is prevented and waste feed is removed from pens
* Feeders and drinkers have been designed to prevent wastage and leaks
* Pen and wall surfaces are constructed from non-porous smooth surfaces
* Troughs and feeders are constructed and arranged to minimise feed waste and prevent pigs from climbing in or wallowing.
 | On-going |
| Emissions from housing (straw based) | * Pens well bedded with clean, dry bedding to ensure clean animals and to bind ammonia, scraped out every other day and manure is transferred to the covered muck store
* All scraped areas within buildings are maintained and managed to prevent ponding
* Bedding material is stored under cover to ensure it is kept clean and dry to prevent wastage and deterioration.
 | On-going |
| Cleaning out | * Cleaning out occurs as soon as possible after destock to allow maximum time for the building to dry before restocking.
* Scraping out of straw yards is typically between 7.30am and 10.30am daily.
 | On-going |
| Animal carcases | * Pig carcases are kept in covered storage and disposed of promptly by licenced deadstock collector
* Storage container is sealed preventing leaks
* No incinerator.
 | On-going |
| Feed delivery and storage | * Dry feeds are stored in silos. No liquid feed storage.
* Dry pelleted feed is distributed to feed bins via a blower wagon (enclosed system), minimising the opportunity for odour release
* The feed storage is checked by the site manager in accordance with the site’s maintenance schedule. Any leaks are repaired quickly and any spillage cleaned up
* All spillages are cleaned up and disposed of promptly
 | On-going |
| Spreading dirty water | * All applications of dirty water is in accordance with a current Manure Management Plan, NVZ requirements and codes of good agricultural practice. Where it is exported to a third party, we have assurance from said party that they operate in accordance with these requirements.
 | On-going |
| Spreading manure | * Ditto FYM
 | On-going |
| Dust (especially as an odour vector) | * All dry feed ingredients are stored in covered bins and fed via contained delivery system to feeders
* Feed system enclosed through to troughs in pens.
* Free fall of pelleted feed into the internal feeders in the pens is at a small drop height to reduce the plume effect of dust.
* Feed pelleted, thereby binding dusty ingredients together and minimising dust release
* Open surface of troughs/feeders kept to a minimum consistent with purpose in order to minimise exposed feed surface.
* Waste feed removed and not allowed to accumulate.
* Bedding types and quality chosen to minimise dust creation.
 | On-going |
| Dealing with complaints | * Any bioaerosol/dust complaints will be reported to the operator who will log and investigate causes of all complaints; identifying the source of the issue and monitoring bioaerosol/dust levels at the site boundary as part of the investigation.
* The complaint details and subsequent investigation will be recorded on the site complaint form (see Appendix 1 to this document) and a copy will be kept in the site office.
* The complaints procedure will follow the requirements set out in the Environment Agency’s H4 Odour management guidance:
* “Investigate any complaints promptly and take appropriate remedial action.
* You should tell the complainant and anyone else likely to have been affected by what you have done.
* You should record the details of the complaint and the actions you have taken. An example of complaint recording is given in Appendix 1.
* If you need to substantiate the odour, a record form and advice for sniff testing are also given [in Appendix 1 of the H4 Odour management guidance]. However, if you and your staff have become accustomed to the odour through exposure the results may be unreliable. (see adaptation in Appendix 2 [of the H4 Odour management guidance])”.
* In this case, ensure that the person monitoring odours is not associated with the day-to-day running of the farm and is therefore not immune to the odours.]

“When investigating a complaint you should work through the following questions: 1. 1) Is the process under control? (Have you received exceptionally odorous wastes? Has a normally aerobic composting activity become anaerobic? Have putrescible wastes been left standing for too long before processing?)
2. 2) Have odour containment measures failed? (Has a door been left open? Have odorous materials been stored outside a containment area? Have adverse conditions, such as weather, overwhelmed containment structures?)
3. 3) Have treatment/mitigation measures failed? (e.g, is there a ventilation failure or an issue with pig health)
4. 4) Have dispersion methods failed? (Have stable atmospheric conditions failed to disperse an odorous plume? Have your neighbours been exposed to emissions because of unfavourable night-time cold drainage flow conditions?)
5. 5) If the odour is associated with hazards, such as treatment of hazardous materials, is there any possibility of health risk to the local community?”
6. We will keep auditable records of any investigations we carry out. These records will be invaluable to us in analysing incidents and stopping them from happening again, as well as being a requirement of this plan and to meet permit conditions.
 | On-going |
| General comments | * Neighbours will be informed (where necessary) prior to activities which may cause bioaerosols/dust
* Levels will be monitored on site by all staff. The source of abnormal bioaerosols/dust will be identified and appropriate action will be taken to reduce back to normal levels
* The effectiveness of control measures will be reviewed at least once a year or sooner in the event of any complaint or relevant changes to operations.
* The permit holders live on site so are able and responsible for checking emissions daily; checking for any abnormal levels or potential for increased bioaerosol/dust production. **Site tours will be undertaken daily.** Where there is potential for abnormal elevated bioaerosol/dust emission, control measures will be put in place to mitigate the risk.
* The road in to the farm passes the closest receptors enabling staff/operators to also notice if there is an elevated bioaerosol/dust emission at that point. Staff know to report promptly any such occasions.
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**Contingency Plan**

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| **Abnormal Scenario** | **Remedial Action** | **Time Limit** |
| Damage to building | Damage would be repaired asap and, depending on nature of damage, area made safe and covered/contained in the meantime to prevent increased odour emissions and/or destocked in the immediate area if necessary. | Depends on severity of damage and whether environment or animals are at risk.Immediate action required to make safe.Mitigation measures will continue until the damage is repaired and it is assessed as safe to revert to normal practice. This will be recorded in the inspection and maintenance records. |
| Dirty water store damage or overflow | Contingency margin in store capacity so overflow risk low. Tanks monitored routinely to check levels and particularly ahead of washing out and through periods of heavy rain. Forecasts are monitored to enable preparations for high rainfall. Tank should be repaired immediately and any contaminated water held or collected in the meantime; or applied to land if conditions and regulations permit.  | If any risk of pollution, immediate action must be taken to remove risk. Mitigation measures will continue until the damage is repaired/situation remedied and it is assessed as safe to revert to normal practice. This will be recorded in the inspection and maintenance records and/or incident records. |
| Pipework damage | Immediately stop use of the pipe and clear up (e.g spilt feed) to prevent contamination of clean water drainage. Replace/repair pipe. Immediately install additional containment measures in the meantime if needed (e.g. using straw/sand or bucket brush) | Immediately stop potential for leak.Replace/repair pipe - Time frame depends on dependency on pipe.Mitigation measures will continue until the damage is repaired and it is assessed as safe to revert to normal practice. This will be recorded in the inspection and maintenance records and/or incident records. |
| Livestock illness | Fieldsman and veterinary advice and treatment plan would be referred to and additional measures taken where necessary; i.e. more frequent removal of FYM from pens where e.g. gastrointestinal illness or behaviour problems is leading to increased mucking of the pens. Where pigs need removing from their peers, hospital pens are included within each building – but these are managed exactly the same as the other pens, with dirty areas removed frequently, preventing elevated odour levels. A decision making protocol is also in place regarding acceptable treatment windows and when to make the decision to euthanise. This reduces the risk of animals which aren’t recovering in an acceptable timeframe for high welfare, or aren’t likely to be ultimately fit for transport, being kept on in hospital pens indefinitely.In the case of a notifiable disease outbreak, the site is designed for accommodating pigs to their full adult size so the feed, water and space requirements are correct for an extended housing period if required. The nature of the muck management system means that pens can be cleaned regularly throughout the batch. We would not expect an increased daily odour output for these reasons. In the instance that it is not possible to remove FYM from the site at all, advice would be sought regarding location for a temporary field heap and a tanker would be deployed to increase the dirty water holding capacity on the site. Advice from the EA and APHA would be sought. | Immediate referral to veterinary/fieldsman advice for prompt treatment and management plans.Assess the risk for increased odour production, and adjust bedding and mucking out schedules accordingly. Mitigation measures will continue until the situation is under control and it is assessed as safe to revert to normal practice. This will be recorded in the animal management records and/or incident records as applicable.  |
| Fire  | Control the fire as quickly as possible. If the fire is not immediately possible to extinguish and is spreading, contact fire brigade immediately and remove at-risk animals if safely possible, also remove animals from nearby buildings. Unless there is sufficient, and safe, accommodation available on site at the correct stocking densities - arrange for removal of these animals from the site within 8 hours maximum. There is contingency margin for housing available within the local supply chain, run by the relevant pig group. All firewater will be draining to the dirty water tank, so this will need frequent emptying and appropriate disposal/removal to other storage tanks/tankers. Contact Environment Agency for advice on disposal.Follow fire brigade advice regarding creation of fire breaks/protection and removal of flammable materials (e.g. straw bales),Once the fire is under control and it is safe to do so, remove all burnt material within 24 hours and thoroughly clean and decontaminate the area.  | Ring fire brigade immediatelyRefer to Emergency Action Plan – Fire sectionRing haulier/pig group (see Emergency Contacts) to arrange for movement of stock, if necessary, within 8 hours maximum.Mitigation measures will continue until the damage is repaired/situation remedied and it is assessed as safe to revert to normal practice. This will be recorded in the inspection and maintenance records and/or incident records. |
| Diet problems | In the case of a diet issue (e.g. where feed quality was below standard or feed type was incorrect), we have the capacity to remove and replace feed in the bins. Diets are continually reviewed by a professional nutritionist and feedback on feed quality and requirements given via the pig group and veterinary practice.N.B. Diets are only sourced from UFAS accredited mills. | Contact pig group/owner immediately (and vet if applicable).Mitigation measures will continue until the situation is remedied. This will be recorded in the inspection and maintenance records and/or incident records. |
| Failure of containment of food | In the case that a feed pipe leaks within the pig buildings, the system should be stopped and leaked feed cleared up promptly. No potential for contamination of clean water system. In the case that the feed bin leaks or the blow pipe fails and feed is spilled on to an outdoor area, the surface water drainage point should be immediately protected to prevent contamination of clean water systems. All spillages should be cleaned up immediately. For uncontaminated feed fit for animal consumption, it can be transported by teleporter bucket to the feeders in pens or blown into another silo by the feed company vehicle (dependent on biosecurity risk). For any major spillage greater than 500kg that is unfit for animal consumption the spillage will be cleared up in to skips and removed from site for disposal via the appointed waste contractor within 24 hours of the incident. For any spillage less than 500kg, feed would be cleared up using bags and placed in the onsite general waste container for disposal.  | Stop the potential for leaks immediately.Protect clean water inlet immediately by shutting it off or containing the spillage area through use of e.g. straw/sandbags. Protect from rainfall and pests if it is not possible to remove the spilled feed, or feed from a damaged bin, within a few hours. The affected area/feedbin should be free of feed within 24 hours. Mitigation measures will continue until the damage is repaired/situation remedied and it is assessed as safe to revert to normal practice. This will be recorded in the inspection and maintenance records and/or incident records. |
| Carcass disposal route failure | In the case of increased mortality or/and culling of large numbers, the deadstock collector must be able to collect all deadstock immediately or within short timescale. Where immediate collection is not possible, all carcases must be stored in sealed, locked containers capable of retaining all effluents and of reducing risk of odours.In the case of normal contracted deadstock collector being unable to collect the carcases within the required timeframe, there are multiple other collectors used within the wider supply chain which can be called on.  | Immediate communication with deadstock collector(s) and/or pig group/owner.Mitigation measures will continue until the situation is concluded/remedied and it is assessed as safe to revert to normal practice. This will be recorded in the animal management records and/or incident records as appropriate. |
| Temporary storage and disposal of any wastes arising from incidents | Used sand, straw bales, and other waste materials arising from containing pollutants should be stored on an impermeable surface protected from drainage routes.  | Where applicable, the waste contractor (see emergency contacts) should be contacted within 24 hours of an incident and arrangements made for safe disposal.Mitigation measures will continue until the situation is remedied. This will be recorded in the incident records. |

**Summary**

Bio-aerosols/dust are assessed daily by operators. Air quality within the buildings is also assessed (sensory assessment). Weather monitoring/forecasting, also helps to assess the risks and take additional actions to mitigate them if necessary.

We have always worked hard to minimise our impact on our closest receptors and as a result have not had any complaints about bio-aerosol/dust emissions. We continually assess management techniques to improve our control of emissions.

This plan will be reviewed at least **annually** and in the light of any building and management changes, and on the outcome of investigations into the causes of any future complaints, if any occur.

Any complaints will be recorded and investigated using the guidance from EPR 6.09 3.1 and 3.2 odour and emissions management on intensive livestock installations.

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**Appendix 1: Dust, bioaerosol and fugitive emissions complaint form**

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| **Date** | **Name and details of person making the complaint** | **Nature of complaint** | **Action taken** |
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