

Dust & Bio-aerosol Management Plan for Friars Farm

Poultry dust may vary in composition from pure wood dust to a complex mixture of organic and inorganic particles, faecal material, feathers, dander (skin material) and bioaerosols – dust particles containing living organisms including mites, bacteria, fungi and fungal spores and endotoxins, depending on the type of birds, the work activity, and the point in the growing or production cycle.

The Environmental Risk Assessment submitted to apply to vary permitted activities from rearing of ducks to rearing broilers identified sources of dust and bio-aerosols with moderate potential to cause annoyance, although no significant increase in odour is to be expected result of the changes. Created this dust management plan (DMP) to support the overall environmental management system in place. The overriding principle is to ensure day-to-day activities are carried out in accordance with the plan so there is no reasonable cause for annoyance to people outside the installation boundary. No cause for annoyance is expected; the operator has no record or recollections of any dust concerns or complaints and will continue to foster good relations with neighbours.

Actions and contingency actions in this DMP are best available techniques (BAT) in accordance with Best Available Techniques (BAT) Reference Document 2017, Environment Agency (2010) EPR 6.09 Sector Guidance Note; How to comply – Intensive Farming v2 Appendix 11 Assessing dust control measures on intensive poultry installations, Health and Safety Executive (2012) Controlling exposure to poultry dust, guidance for employers, and DEFRA (2018) Code of practice for the welfare of meat chickens and meat breeding chickens, updated 25 January 2024.

Identified sensitive receptors within 100m of the installation boundary (including a dwelling occupied by a person in control of the installation) from a desk top study shown in Table 1 and Figure 1: -

Table 1. Friars Farm sensitive receptors within 100m

1	Residential	Friars Farm Farmhouse, Morningthorpe, NR15 2QL	TM 21751 92545	ENE	89
2	Agricultural	Friars Farm, Morningthorpe, NR15 2QL	TM 21666 92518	N	0
3	Residential	Manor Cottage, Morningthorpe, NR15 2QL	TM 21748 92499	E	85
4	PROW	Public right of way (footpath)	TM 21505 92418	W	12

NGR and distance from government website at magic.defra.gov.uk

Fig 2. Friars Farm locations of sensitive receptors within 100m



Wind direction is defined as the direction from which the wind is blowing. According to the Met Office Eastern England climate report - as Atlantic depressions pass by the UK the wind typically starts to blow from the south or south-west but later comes from the west or north-west as the depression moves away. Directions between south and north-west account for the majority of occasions and the strongest winds nearly always blow from this range. Averaged across the year the prevailing wind direction is from the southwest.

Residential dwellings have high sensitivity and reasonably expect enjoyment of a high level of amenity, and where people would reasonably be expected to be present continuously, or at least regularly for extended periods. Agricultural premises and public rights of way (footpaths) likely to have low sensitivity – where the enjoyment of amenity would not reasonably be expected, or there is transient exposure, where people would reasonably be expected to be present only for limited periods of time as part of the normal pattern of use. The following table sets out: -

- Sources of dust & bioaerosols from a typical intensive poultry unit
- Actions taken at Friars Farm to prevent or minimise dust levels
- Contingency actions to limit exposure to elevated dust and bioaerosol emissions beyond the installation boundary.

Table 2. Summary of responsibilities at Friars Farm

No.	Routine action	Responsible
1	Check and empty cyclone dust separators	Farmworkers
2	Monitoring feed deliveries and clearing up outside spillages	Drivers
3	Inspecting feeding equipment inside and outside the poultry houses	Farmworkers
4	Inspecting ventilation fans and switching on and off	Farmworkers
5	Inspecting gable end fans and switching on and off	Farmworkers
6	Destocking the poultry houses end of the rearing period	Catchers and drivers
7	Use vehicles for removing used litter from inside the poultry houses	Contractors
8	Use pressure washers to washout inside and outside the poultry houses	Contractors
9	Removing build-up of settled dust on extraction and gable fans during washout	Contractors
10	Spreading chopped straw/ wood shavings and setting up	Contractors
11	Planned preventive maintenance	Farmworkers, electricians and contractors
12	Repairs to equipment and housing	Farmworkers, electricians and contractors
13	Monitoring for dust issues and informing sensitive receptors	Farm Manager
14	Investigating and recording complaints	Farm Manager
15	Review and update the dust management plan	Environment Manager

Table 3. Routine actions and contingency actions to minimise dust and bio-aerosols and risks at Friars Farm

Source of dust & bio-aerosols	Potential risks and problems	Routine actions to minimise dust & bio-aerosols and risks	Contingency actions to minimise dust & bio-aerosols & risks
Dust from manufacture & feed selection	• Form of feed • Feed ingredients • Milling & mixing	• Use pelleted feed in a dry feed system, crumbled for chicks up to 12 days of age. • Feed broiler chickens ad-libitum. • Feed specifications are prepared by the feed compounders nutrition specialist. • Feeds supplied from mills in UKAS accredited certification schemes only use approved ingredients. • No feed manufacturing, milling, or mixing on site.	
Dust from feed delivery & storage	• Feed storage • Feed delivery • Feed spillage	• Package silos, hoppers and augers will contain dust. • Silos and feeding equipment protected from collision damage from reversing vehicles by careful siting relative to traffic flows, in between the houses with kerbs or barriers as required. • Feed delivery vehicles always covered. • Blow feedstuffs over as short a distance as possible. • Deliveries monitored by drivers. • Package cyclone dust separators on silos trap dust during delivery and will be checked and emptied by farmworkers after each delivery. • Use pan feeders create less dust than track feeders. • Automated or mechanical equipment essential for the health and well-being of the birds must be inspected by farmworkers at least once per day to check there is no defect, these will be rectified immediately. • Planned preventive maintenance of equipment by qualified farmworkers, electricians or contractors in accordance with manufacturer's instructions and keep records of work.	<u>Trigger</u> • Feed spillage outside • Fault with the feeding equipment spillages inside. <u>Timeframe for implementation</u> • Immediate/same day <u>Contingency action</u> • Spillage will be cleared up immediately into bags by drivers or farmworkers and stored in a secure place. • Uncontaminated feed will be used but feed which is contaminated is waste - for disposal in trade waste bin or skip to be removed on the next scheduled emptying or changeover. • If there isn't a large enough bin or skip onsite, farmworkers will contact the contractor for emptying or changeover sooner. • Equipment defects must be rectified immediately, same day by qualified farmworkers, electricians or contractors. <u>Duration of action</u> • Achievable same day, bins or skips to be emptied.

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Source of dust & bio-aerosols	Potential risks and problems	Routine actions to minimise dust & bio-aerosols and risks	Contingency actions to minimise dust & bio-aerosols & risks
			<u>Cessation of action</u> • Spillage cleared up for use or secured for disposal. • Farmworkers inspect the contingency actions have been successful and any contaminated feedstuffs have been secured for offsite for disposal.
Dust & bioaerosols from ventilation fans	• Dust may contain large amounts of bird proteins and mite residues with high risk of respiratory sensitisation for workers inside poultry houses. • Increasing ventilation may reduce airborne dust inside the house but will be released outside.	• Forced ventilation system designed and installed by professional contractors • Optimised discharge conditions of exhaust air from houses using a combination of techniques to disperse ammonia, odour, dust and bioaerosols quickly - maximised outlet heights, exhaust air above roof level through the ridge, maximised vertical outlet velocity and uncapped outlet cones. • Computer controlled automatic ventilation, uses small number of fans running continually at high-speed rather than more fans switching on and off. • Automated or mechanical equipment essential for the health and well-being of the birds must be inspected by farmworkers at least once per day to check there is no defect, these will be rectified immediately. • Build-up of settled dust removed during washout. • Planned preventive maintenance of equipment by qualified farmworkers, electricians or contractors in accordance with manufacturer's instructions and keep records of work.	<u>Trigger</u> • Defect in ventilation equipment. <u>Timeframe for implementation</u> • Immediate/same day <u>Contingency action</u> • Equipment defects must be rectified immediately, same day by qualified farmworkers, electricians or contractors. <u>Duration of action</u> • Normally achievable same day. <u>Cessation of action</u> • Farmworkers inspect the contingency actions have been successful and ventilation equipment is working correctly.

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Source of dust & bio-aerosols	Potential risks and problems	Routine actions to minimise dust & bio-aerosols and risks	Contingency actions to minimise dust & bio-aerosols & risks
Dust from gable fans	• Dust released outside close to ground level. • Exposure at the sensitive receptor will potentially be increased. • Running fans continually day & night • Expect frequency & duration of use in the future will increase owing to climate change.	• Gable end fans installed in house No. 5 only, to be used infrequently in warm weather. Not at other times for example for brooding chicks or young birds which could be chilled or during litter removal and washout. • External deflectors direct exhaust air and dust on to the ground. • Build-up of settled dust removed during washout. • Planned preventive maintenance of equipment by qualified farmworkers, electricians or contractors in accordance with manufacturer's instructions and keep records of work.	<u>Trigger</u> • Warm weather • Chickens are nearly fully feathered & start exhibiting uncomfortable feeling hot behaviours e.g. lifting their wings and exposing more of their bodies to get rid of excess heat, and panting. <u>Timeframe for implementation</u> • Immediate/same day. <u>Contingency action</u> • Farmworkers switch on one or more gable fans in warm weather, most likely in June, July & August and in a heat wave (Met Office definition for a UK heat wave is an extended period of hot weather for three consecutive days with daily maximum temperatures meeting or exceeding the heat wave temperature threshold of 27°C for Norfolk). • Automated or mechanical equipment essential for the health and well-being of the birds must be inspected by farmworkers at least once per day to check there is no defect. Plus, farmworkers will inspect the birds at least twice per day. <u>Duration of action</u> • Gable fans could be in use for approx. seven days before thinning and seven days near the end of a rearing period. Based on seven-week rearing periods the gable end fans might be used near the end of two periods – total of twenty-one days or more per year. <u>Cessation of action</u>

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			Farmworkers switch off fans immediately as soon as not needed - when daytime outside temperature goes down and the chickens stop exhibiting uncomfortable feeling hot behaviours or have been destocked.
Dust issues with litter quality	- Type of bedding - Treatment of bedding - Application of bedding - Amount of bedding - Age of bedding	- Use new litter every time, never reuse litter. - Use proprietary blends of dust extracted chopped straw/wood shavings or chopped straw to provide absorbent bedding. Dust extracted straw/wood shavings are commercially available, cost effective and readily disposed of end of each production cycle. - According to How to comply sawdust and flax straw have been found to produce less dust than wheat or barley straw, but neither are normal UK industry practise for intensive rearing broiler chickens. - Bedding supplied in plastic wrapped bales. - Bales unpacked and spread by hand to minimise and contain any dust inside houses. Spread evenly over entire floor area prior to eggs or chicks arriving. - Dust filtration not installed but closing doors, opening vents and switching on extraction fans to create effective airflow is industry best practise to limit workers exposure to dust during litter spreading.	

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Dust issues with bird activity	• Increased flock numbers • Birds exhibiting higher activity levels create elevated levels of dust in the air.	• Farmworkers will systematically inspect the birds at least twice per day, three times for young birds.	
Dust issues during destocking	• Ventilation fans • Open doors • Increasing ventilation will reduce airborne dust inside but more dust will be exhausted outside.	• Expect to be destocking houses not less than 14 days every year. Abattoir can take the smaller and larger birds in as little as a single day. • Ventilation used to minimise airborne dust in the houses for workers & maintain sufficient air changes and temperature for chickens throughout the process. • Minimise workers exposure to dust by keeping doors closed and switch on more fans to create effective airflow is best practise. Release and disperse dust and odour via the high velocity extraction fans. • Catching takes place in low light to keep bird's calm. • Birds caught with care and lifted directly into transport modules inside houses, modules covered to protect chickens from weather conditions during transport, also contains dust and odour, but expect them to be uncovered in warmer weather. • Loaded trailers promptly moved offsite. • HGVs pass-by receptors but takes only seconds.	

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Dust issues removing litter	• Ventilation fans • Open doors • Increasing ventilation will reduce airborne dust inside but more dust will be exhausted outside • Considered to be the dustiest activity	• Remove litter after destocking must never be reused. • Expect to be removing litter not less than seven times every year and from all the houses in less than a day. • Contractors remove litter as soon as possible, normally within a day of destocking, not more than 3 days, e.g., destocking on Friday and remove litter on Monday. • Remove litter in normal daytime 07.00-23.00hrs in working week (Monday to Friday and Saturday morning but exclusive of public & bank holidays), in accordance with How to comply. • Use ventilation to maximum effect to reduce workers exposure to dust during litter removal in accordance with HSE guidance – will use combination of opening or closing doors, opening vents for natural air dilution, and switch on fans to create required airflow • Contractors remove build-up of settled dust from fans, ceiling and feeding equipment, etc with compressed air before washout, and helps reduce the quantity of dirty water. • Contractors will use front end or skid-steer loaders to push bulk of litter into a large heap the length of house to avoid double handling and minimise time loading into trailers. • Doors will be open on to waiting trailers parked outside and as close as possible. • Trailers kept covered all times except during loading. • Farmworkers switch off fans when work finished and keep houses closed and locked.	

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		- Export litter offsite for power generation or land-spreading. Latter will be under control of a separate farming business & with a written agreement in place. - No used litter will be stored onsite.	
Washout	- Ventilation fans - Open doors - Considered to be the least dusty activity	- Expect to washout not less than seven times every year and from all the houses in less than a day. - Contractors' washout houses as soon as possible normally within a day of destocking, not more than three days, e.g., destocking on Friday and washout on Monday. - Washout in normal daytime 07.00-23.00hrs in working week (Monday to Friday and Saturday morning but exclusive of public & bank holidays), in accordance with How to comply. - Keep roadways, concrete apron, dirty water grates and drains clear of litter, etc to avoid backing-up, pooling, or over spilling into surface water drains or on unmade land. - Keep poultry houses closed & locked after washout.	
Monitoring	- Wind direction - Sensitivity likely to increase in warm weather when people want to enjoy amenity of their gardens and	Farm Manager responsible for site tour every day including perimeter check for any abnormal elevated dust level, especially any with the potential to cause annoyance at any sensitive receptors.	<u>Trigger</u> - Abnormal, extraordinary, elevated dust levels. <u>Timeframe for implementation</u> - Immediate, same day. <u>Contingency action</u> - Check routine actions to minimise dust are being adhered to.

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Source of dust & bio-aerosols	Potential risks and problems	Routine actions to minimise dust & bio-aerosols and risks	Contingency actions to minimise dust & bio-aerosols & risks
	have windows open		- Inform people at sensitive receptors and anyone else likely to be seriously affected, what has been done or still needs to be done to reduce dust levels and duration with timescales. <u>Duration of action</u> - Normally achievable same day, next day. <u>Cessation of action</u> - Continue checking at perimeter, until dust levels are reduced and back to normal. - Record events and actions in farm diary.
Complaint	- Elevated level of annoyance - Slow response	Farm Manager will be responsible for investigating any complaint.	<u>Trigger</u> - Complaint reported by the public, the Environment Agency or local authority. - Complaint reported on Saturday or Sunday by email from the Agency or local authority, not considered likely from anywhere else. <u>Timeframe for implementation</u> - Immediate, as soon as possible on opening email. <u>Contingency action</u> - Investigate if alleged dust can be substantiated. Even if no longer apparent investigation must still be carried out and recorded same day. Use the dust compliant report and establish: - - Time event occurred, duration, description of dust. - Activities taking place onsite at time of complaint. - Any dusty activities taking place offsite in the vicinity. - Check actions, contingency actions being adhered to and any change to standard operating procedure.

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Source of dust & bio-aerosols	Potential risks and problems	Routine actions to minimise dust & bio-aerosols and risks	Contingency actions to minimise dust & bio-aerosols & risks
			- Record details of investigation and action taken on the dust complaint report. - A copy must be sent to the Agricultural Manager and Environment Manager immediately. - Must be retained onsite and available for future reference, or inspection with the Agency. <u>Duration of action</u> - Investigation likely achievable same day, next day. <u>Cessation of action</u> - Notify complainant and anyone else likely to be seriously affected, and the Environment Agency or local authority as required, same day or as soon as possible of the result of the investigation and corrective action or what still needs to be done with timescales.
Review	New dust issue	Environment Manager is required to review the DMP annually and/or after a complaint is received and/or after any changes to operations, whichever is the sooner and update the DMP as required.	

Change history	Date	Name
Last updated	20/07/26	Karl Collett
Last review	20/07/26	Karl Collett
Next review	-	Twelve months after bringing first house into operation
20/07/26 Created DMP to apply to vary permitted activities from rearing of ducks to broilers.		

Dust Complaint Report

Date		
Reference number		
Name and address of complainant		
Telephone number of complainants		
Time and date of complaint		
Date, time, and duration of offending dust		
Weather conditions (e.g., dry, rain, Fog, snow)		
Wind strength and direction (e.g., light, steady, strong, gusting)		
Callers' description of dust		
Has the caller any other comments about the offending dust?		
Any other previous known complaints relating to the installation (all aspects, not just dust)		
Any other relevant information		
Potential dust sources that could give rise to the complaint		
Operating conditions at the time offending dust occurred		
Actions taken		
Final outcome		
Complainant visited		
Complainant contacted with explanation Yes/No Date By whom		
Form completed by	Date:	Signed: