Dust & Bio-aerosol Management Plan for Great Westwick Farm Poultry Unit

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 with the application to vary permit for change of use to rearing broiler chickens from pullets and include a mobile macerator as a directly associated activity identified sources of dust with minor potential to cause annoyance, although no significant increase in dust is expected result of changing to rearing broilers. Created and updated 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.

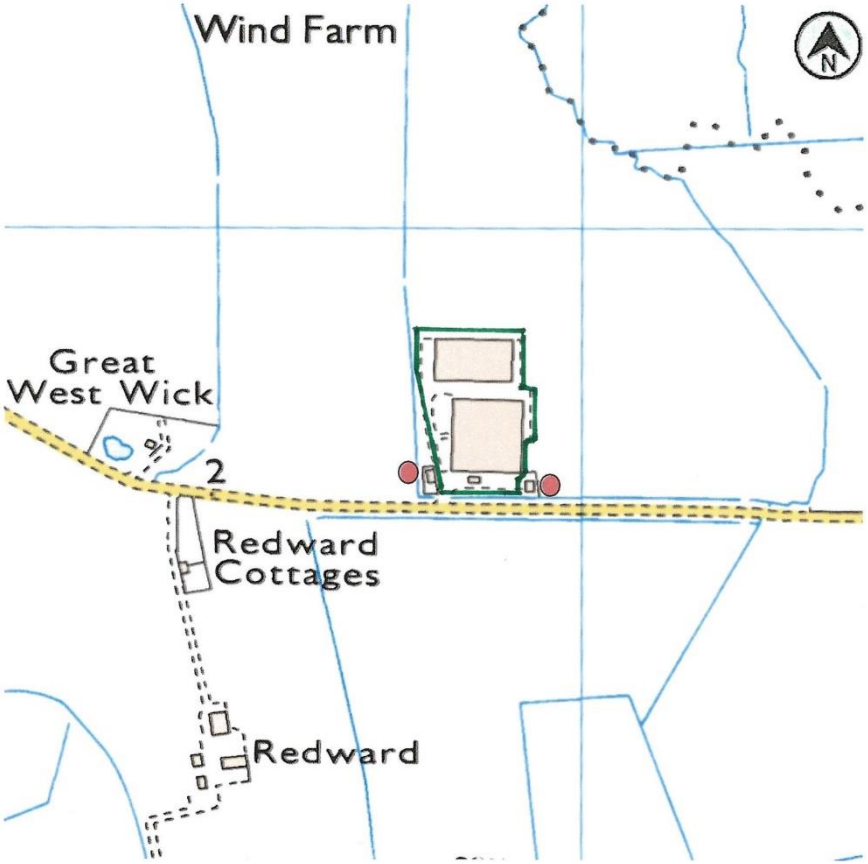
Identified two sensitive receptors (residential dwellings for farm workers) within 100m of the installation boundary from a desk top study shown in Table 1 and Figure 1.

Table 1 Great Westwick Farm Poultry Unit sensitive receptors within 100m

Nº.	Receptor	NGR	Direction	Distance from boundary
1	The Old Bungalow, Great Westwick Farm, Marshes, Burnham-on-Crouch, CM0 8NE	TQ 9893 9666	SE	10
2	The New Bungalow, Great Westwick Farm, Marshes, Burnham-on-Crouch, CM0 8NE	TQ 9882 9668	SW	0

Distances measured on government website at magic.defra.gov.uk

Fig 1. Westhall Poultry Farm location 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. Likely to be exposed to dust and bioaerosols for the majority of occasions

The following table sets out:-

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

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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	• Milling & mixing compound feed • Feed ingredients • Fat content	• Feed broiler chickens ad-lib with a minimum of three pelleted, compound diets, crumbled for chicks up to 12 days of age. • Feed specifications prepared by the compounders nutrition specialist and continually monitored. • Feeds supplied from mills in certification schemes and only use approved ingredients. • No feed manufacturing, milling, or mixing on site.	
Dust from feed delivery & storage	• Dust from silos • Storage of feed • Feed spillage • Form of feed	• Package silos, pipes, augers and feeding equipment contains the dust and odour. Use pan feeders which create less dust than track feeders. • Cyclone dust separators capture dust during delivery and routinely checked and emptied by farm workers. • Silos and feeding equipment protected from collision damage from reversing vehicles by careful siting relative to traffic flows, in between the houses not on the concrete apron with kerbs or barriers as required. • Feed delivery vehicles always covered to minimise any dust and odour from being released. • Blow feedstuffs over as short a distance as possible to minimise creating dust. • Deliveries monitored by drivers or farmworkers, and any spillage will be cleared up immediately. • Automated or mechanical equipment essential for the health and well-being of the birds must be inspected by farm workers at least once per day to check there is no defect in it.	Trigger • Feed spillage during delivery • Fault with the feeding equipment Timeframe for implementation • Immediate/same day/ dependent on skip availability Contingency action • 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 will be waste for disposal into the trade waste bin or skip onsite and removed on the next scheduled emptying or changeover. • If there isn't a large enough bin or skip onsite already under an established service agreement, farmworkers must contact a contractor to provide one for waste storage, collection and disposal. • Equipment defects must be rectified immediately, same day by farmworkers, company engineers or professional contractors.

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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
		• Planned preventive maintenance for buildings and equipment by company engineers or professional contractors in accordance with any manufacturer's instructions and keeping records of the work.	<u>Duration of action</u> • Achievable same day, bins or skips to be emptied. <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 or exported 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. • Heat exchangers at Great Westwick Fm keeps surface of the litter and droppings dry.	• Forced ventilation system designed & installed by professional contractor. • Optimised discharge conditions of exhaust air from houses using a combination of techniques to disperse ammonia, odour, and dust quickly. Maximised outlet heights, exhaust air above roof level through the ridge, maximised vertical outlet velocity and with uncapped outlet cones. • Ventilation is automatic, computer controlled to provide sufficient fresh air appropriate for the age of the birds, without draughts, and remove excess moisture to keep the litter and droppings dry and friable under all weather & seasonal conditions. • Automated or mechanical equipment essential for the health and well-being of the birds must be inspected by farm workers at least once per day to check there is no defect in it. Defects must be rectified immediately on the same day by farmworkers, company engineers or professional contractors. • Remove build-up of settled dust from fans, ceiling and feeding equipment, etc after destocking.	

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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 issues with litter quality	• Type of bedding • Treatment of bedding • Amount of bedding • Application of bedding • Age of bedding	• Use new litter every time, never reuse litter. • Use a proprietary blend 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. • Contract service established to spread new litter material evenly over entire floor area prior to eggs or chicks being delivered. • Plastic wrapped bales delivered direct into houses for unpacking and spreading to contain any dust. • Dust filtration not installed but closing doors, opening vents to dilute air, and switching on extraction fans to create effective airflow is industry best practise to limit workers exposure to dust during litter spreading.	
Dust issues with bird activity	• Increased flock numbers • Birds exhibiting higher activity levels create elevated levels of dust in the air.	• A systematic inspection of all the birds must be undertaken at least twice each day at appropriate intervals by farmworkers. Young birds should be inspected at least three times a day. • Farm workers should walk close enough to see the birds clearly and for them to be disturbed and so move away to identify any bird that is sick, injured or weak for appropriate action.	

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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 issues during destocking	• Fans & open doors • Increasing ventilation will reduce airborne dust inside but more dust will be exhausted outside.	• Abattoir can slaughter 240,000 chickens per day so can take the smaller and larger birds in as little as a single day. Expect to be destocking houses not less than 14 days every year based on rearing birds to around 31 days of age, then start destocking. A quarter will be removed, 'thinned,' and transported to a local abattoir and remainder reared on to around 38 days of age. Normally 10 days washing-out & empty in between batches so approx. 7.6 batches pa. • 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 birds 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.	
Dust issues removing litter	• Ventilation fans & open doors • Increasing ventilation will	• Must remove litter after destocking. Expect to be removing litter not less than seven times every year and to be removed from all houses in less than a day.	

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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
	reduce airborne dust inside but more dust will be exhausted outside. • Considered to be the must dusty activity onsite.	• Contract service established to remove litter as soon as possible, normally within a day of destocking, not more than 3 days, e.g., destocking on Friday and cleanout 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 during litter removal. Use combination of opening or closing doors, opening vents for natural air dilution, and switching on fans to create required airflow in accordance with HSE guidance. • 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. • Use front end or skid-steer loader to push bulk of litter into a large heap the length of house to avoid double handling and minimise time loading into trailers. • Doors open on the concrete apron where the waiting trailers will be parked so not in close proximity to any sensitive receptors. • Trailers will be kept covered at all times except during loading. • 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. • Switch off fans and keep houses closed & locked when the work is finished.	

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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
		• Keep checking the actions to minimise dust & odour are adhered to until the work is finished. • No used litter will be stored onsite.	
Washout	• Ventilation fans & open doors • Considered to be the least dusty activity	• Expect to washout seven times every year and to be completed as quickly as possible in 2-3 days. • Contract service established to washout houses as soon as possible, normally within one day of destocking, & not normally more than 3 days e.g. destocking Friday & 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		• Farm Manager responsible for site tour every day including perimeter check for abnormal elevated dust level, specifically any level with potential to cause annoyance at sensitive receptors, although both are dwelling houses for the farmworkers.	Trigger • Abnormal, extraordinary, elevated dust levels. Timeframe for implementation • Immediate, same day. Contingency action • Check routine and contingency actions to minimise dust and risks being adhered to. • Inform people at receptor locations and anyone else likely to be seriously affected, what has been done

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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
			or still needs to be done to reduce dust levels and duration with timescales. • Continue checking at perimeter, until dust reduced and back to normal. Duration of action • Normally achievable same day, next day. Cessation of action • Dust reduced, back to normal onsite & offsite. • Record events and actions in farm diary.
Complaints	• Wind direction exposing receptors to dust. • Receptor sensitivity likely to increase in warm weather when people want to enjoy their gardens and have windows open more. • Slow response • Elevated level of annoyance.	• Farm Manager, Environmental Manager responsible for investigating any complaint reported by Agency, local authority, or the public. • Investigate if alleged dust can be substantiated. Even if no longer apparent an investigation must still be carried out and recorded same day. Establish:- • Time event occurred, duration, description of dust. • Activities taking place onsite at time of complaint. • Any dusty activities taking place offsite in vicinity. • Record details of investigation and action taken on dust complaint report. A copy must be sent to the Agricultural Director immediately and must be retained onsite & available for future reference, or inspection with Agency.	Trigger • Complaint reported on Saturday or Sunday by email from Agency, local authority, not considered likely to be reported from anywhere else. Timeframe for implementation • As soon as possible on opening email. Contingency action • Investigate if alleged dust can be substantiated. Even if no longer apparent investigation must still be carried out and recorded same day, next day. • Continue monitoring for dust. Duration of action • Investigation likely achievable same day, next day. Cessation of action • Notify Agency, local authority, complainant, anyone else likely to be seriously affected, same day as soon as possible result of investigation and corrective action or what still needs to be done with timescales.

Table 2. Routine actions and contingency actions to minimise dust and bio-aerosol and risks at Great Westwick Farm Poultry Unit

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
Management plan review	• Update with new issues, actions & contingency actions.	• Environment Manager responsible for annual review of this DMP, updated sooner where a substantiated complaint results in making changes to related issues procedures, or any routine or contingency actions.	

Change history	Date	Name
Last updated	11 April 2025	Karl Collett
Last review	-	-
Next review	-	-
	Updated for variation application V004 for change to rearing broiler chickens from pullets and include a mobile macerator as a directly associated activity.	

Dust Complaint Report

Date	
Reference number	
Name and address of complainant	
Telephone number of complainant	

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: