Agenda Item 7

8 February 2016

Planning Applications

This file contains the report for Item 1

Planning Application PAP/2015/0348

Land at Crown Stables, Nuneaton Road, Mancetter – Erection of 40,001 bird broiler building and associated control room, feed silos, LPG tank, heat exchanger, hard-standing and attenuation pond.

For other applications see files 2 and 3

Agenda Item No 7

Planning and Development Board

8 February 2016

Planning Applications

Report of the
Head of Development Control

1 **Subject**

1.1 Town and Country Planning Act 1990 – applications presented for determination.

2 **Purpose of Report**

2.1 This report presents for the Board decision, a number of planning, listed building, advertisement, proposals, together with proposals for the works to, or the felling of trees covered by a Preservation Order and other miscellaneous items.

2.2 Minerals and Waste applications are determined by the County Council. Developments by Government Bodies and Statutory Undertakers are also determined by others. The recommendations in these cases are consultation responses to those bodies.

2.3 The proposals presented for decision are set out in the index at the front of the attached report.

2.4 Significant Applications are presented first, followed in succession by General Development Applications; the Council's own development proposals; and finally Minerals and Waste Disposal Applications. .

3 **Implications**

3.1 Should there be any implications in respect of:

Finance; Crime and Disorder; Sustainability; Human Rights Act; or other relevant legislation, associated with a particular application then that issue will be covered either in the body of the report, or if raised at the meeting, in discussion.

4 **Site Visits**

4.1 Members are encouraged to view sites in advance of the Board Meeting. Most can be seen from public land. They should however not enter private land. If they would like to see the plans whilst on site, then they should always contact the Case Officer who will accompany them. Formal site visits can only be agreed by the Board and reasons for the request for such a visit need to be given.

4.2 Members are reminded of the "Planning Protocol for Members and Officers dealing with Planning Matters", in respect of Site Visits, whether they see a site alone, or as part of a Board visit.

5 Availability

5.1 The report is made available to press and public at least five working days before the meeting is held in accordance with statutory requirements. It is also possible to view the papers on the Council's web site: www.northwarks.gov.uk.

5.2 The next meeting at which planning applications will be considered following this meeting, is due to be held on Monday, 7 March 2016 at 6.30pm in the Council Chamber at the Council House.

6 Public Speaking

6.1 Information relating to public speaking at Planning and Development Board meetings can be found at: www.northwarks.gov.uk/downloads/file/4037/.

6.2 If you wish to speak at a meeting of the Planning and Development Board, you may either:

- e-mail democraticservices@northwarks.gov.uk;
- telephone (01827) 719222; or
- write to the Democratic Services Section, The Council House, South Street, Atherstone, Warwickshire, CV9 1DE enclosing a completed form.

Item No	Application No	Page No	Description	General / Significant
1	PAP/2015/0348	4	**Land At Crown Stables, Nuneaton Road, Mancetter,** Erection of 40,001 bird broiler building and associated control room, feed silos, LPG tank, heat exchanger, hard-standing and attenuation pond	General
2	PAP/2015/0222	155	**Barge And Bridge PH, 79, Coleshill Road, Atherstone,** Demolition of existing public house building. Erection of building for 9 flats and associated works.	General
3	PAP/2015/0253	169	**Land North Of, Eastlang Road, Fillongley,** Residential development comprising of 27 no: affordable 2, 3 and 4 bedroom houses and 2 bedroom bungalows including associated highways, external works, landscaping and boundary treatments	General
4	PAP/2015/0297	181	**Land North of 19, Southfields Close, Coleshill,** Erection of two four bedroom semi-detached dwellings with integral garages	General
5	PAP/2015/0369	205	**52, New Street, Baddesley Ensor,** Outline application for 3no: 2-bed detached dormer bungalows. (with indicitive details of access, layout, appearance and scale).	General
6	PAP/2015/0478	228	**Dordon Ambulance Station, Watling Street, Dordon,** Demolition of existing former ambulance station and construction of No.14 dwellings, with improved access and associated landscaping	General

General Development Applications

(1) Application No: PAP/2015/0348

Land At Crown Stables, Nuneaton Road, Mancetter, CV9 1RF

Erection of 40,001 bird broiler building and associated control room, feed silos, LPG tank, heat exchanger, hard-standing and attenuation pond, for

Crown Waste Management

Introduction

This planning application was reported to the Planning and Development Board on 9 November 2015 for information only, to provide an introduction to the proposal, summarising them and the supporting documentation. The information in this Board report will not be repeated here. A copy of that report can be found at Appendix A.

The Board resolved to visit the proposed site at Mancetter along with that of an Intensive poultry installation in Arley, in order to experience very similar site operations, conditions and activities as those that are to be undertaken at Mancetter.

The Site Visit

A note of the visit is attached at Appendix B. In summary the visit to Mancetter involved walking to the corner of the site where the building is proposed; observing the position of the railway embankment and the dwelling houses near to the site and observing the highway access onto Nuneaton Road. The visit to Arley Lane Farm involved Members walking around the outside of the building and walking into the building where 48,000 chicks, aged 3 weeks old were being kept.

Consultations

Environment Agency – The Agency confirms that it has no objection to the proposal, subject to the imposition of a condition relating to the drainage of the site. It confirms that an Environmental Permit will be required from the Agency for this Intensive Poultry Installation with more than 40000 birds. With regards to the details within the application it did require additional information on whether a permanent generator will be installed; where the condensate/wash water from the heat exchanger will be discharged to, details on the odour from commercial litter additives, and it questioned the use of shredded paper as litter.

The Environment Agency has received additional information as requested and now confirms that an Environmental Permit has been issued, subject to conditions, to Crown Waste Management Limited for this Intensive Poultry Installation under permit number EPR/TP3035EW. A copy of this Permit and its supporting report is attached at Appendix C along with a document produced by the Agency, entitled “Frequently Asked Questions on Permit Applications for Poultry Units.”

Warwickshire Fire and Rescue Officer – It is confirmed that there is no objection subject to the imposition of a planning condition for the provision of fire hydrants.

Environmental Health Officer – He confirms that this proposal will require an Environmental Permit from the Environment Agency. He states that the noise assessment shows that this proposal should not have any adverse impact on nearby properties. However, he remains concerned that the intensive poultry unit is much closer to residential properties than the recommended separation distances of 400 metres as contained in the Town and Country Planning General Permitted Development Order and ADAS advice. He states that the applicant predicts that the impact of this proposal will be negligible and has put monitoring and control measures in place to deal with issues such as odour and flies. However, he does stress that the operation of the site now falls under the regulatory authority of the Environment Agency who are the key consultees regarding issues such as odour, flies and noise.

Council's Consultant Agricultural Adviser – He advises that modern broiler units can be operated without causing nuisance providing they are run with attention to detail to maintenance and operation and providing their siting has been given the correct degree of analysis having regard to effects on local inhabitants, local roads and their traffic, landscape issues and the greater environment.

Severn Trent Water Ltd – It confirms that there is no objection to this proposal.

Warwickshire Museum – It confirms that there is no objection to the principle of development, however some archaeological work is required if consent is forthcoming in view of the development site being located within an area of archaeological potential at Mancetter. This further work can be undertaken as part of a planning condition.

Network Rail – It expresses concern that the block plan appears to show the applicant erecting the broiler unit hard against Network Rail's boundary. The railway line is electrified with 25,000 volt AC overhead units which will have a safety issue for the proposed birds as well as anyone working on the construction of the building or undertaking any future maintenance on the building. The construction of the building could also impact on the lineside fencing and foundations and that works may physically encroach or over-sail the boundary where trains are running at speeds of 125mph. As a minimum Network Rail would be looking for a buffer strip of 3 metres between the railway line and the building.

Warwickshire County Council as Lead Flood Authority – It initially objected to the scheme as the east of the site is susceptible to surface water flooding during rainfall events including the 1 in 30 year rainfall event and the proposed 2.0 metre of level raising within the surface water flood extents (adjacent to the watercourse) would increase the risk of flooding to others. Following the submission of a Flood Risk Assessment, the Lead Flood Authority now has no objection to the scheme provided that the development is carried out in accordance with the approved Flood Risk Assessment and the following mitigation measure detailed in the FRA being:

- To mitigate the potential impact from surface water flooding, a minimum of 250 cubic metres floodplain compensation shall be provided in accordance with the site drainage plan.

Warwickshire Highway Authority – It confirms that it has no objection to the proposal. The proposal could generate up to 282 HGV movements per year which would equate to some 6 HGVs per month. It considers that this number can be accommodated on the existing highway network. The visibility splays can be achieved by cutting back the foliage. As such it confirms that there is no objection to the proposal subject to the imposition of planning conditions covering the improvements to the vehicular access into the site.

Warwickshire Wildlife Trust – The Trust confirms that the site is within close proximity to two potential Local Wildlife Sites: Brooklands Farm Meadow and the River Anker. Both sites appear to be hydrologically linked to the site via the stream which runs along its south eastern boundary and so there is a potential risk from contamination/ run off in to the watercourse during the construction or operational stages of the development. As such, suitable mitigation measures are required to be installed. There is a pond to the north-west of the site which lies within 100 – 200 metres of the development footprint which may be a habitat for Great Crested Newts.

Representations

Mancetter Parish Council – It strongly objects to the proposal for the following reasons:

- The site history of this land includes the deposition of waste without the appropriate planning consents in place and the unauthorised use of one of the building's as a pine furniture sales outlet whereby an Enforcement Notice was subsequently served;
- The site appears dormant and gives a run-down impression and appearance and the buildings on site are unused.
- The site is designated as green field beyond the settlement boundary. There are strong links with this area and Queen Boudicca's battle in the rebellion against the Roman conquest of Britain. There is no provision in the proposal to carry out archaeological investigations prior to development;
- Public footpath AE100 crosses the adjoining land and is well used as well as the Arden Heritage Trial. Uncontrolled and constant emissions of noise, smell and dust will seriously affect the attraction of any number of visitors to the area;
- Alternative sites have not been thoroughly considered. This should include land that is not owned by the applicant;
- The application site does not include two sizeable and significant isolated parts of the field;
- Network Rail has stated in its comments that the proposed position of the building will be too close to the main line. The colour of the building is likely to be white which will make it more prominent in the landscape.
- The stable block is not used and has a run-down appearance. These buildings should be demolished if an alternative scheme is to be approved;
- Employment – this scheme will only employ one full time member of staff and up to six casual workers and so will not have a significant impact on employment in the area;
- Access to the site is within a 50mph speed limit close to a bend and this will cause a highway safety issue for road users;

- The 7 metre high vents will be casting out odour. There is an acute danger from the uncontrolled emissions, which contain particulates. It is understood that 15% of chicken factory workers have bronchial troubles;
- Mancetter Parish has experience of two specific industrial activities where companies have spent millions of pounds to make improvements to their processes to eliminate odours but their processes are still failing and the villagers are subject to foul odours;
- This proposal has the potential to pollute the surrounding watercourses from waste water;
- The proposal has the potential to attract a lot of flies;
- The applicant has not given sufficient attention to dealing with emergencies particularly as power failures in the locality are not uncommon;
- Details of the storage of anti-biotic feeds and chemicals on site have not been included in the application;
- Additional lorries for this development would significantly increase traffic noise particularly if its movement takes place outside regular weekday hours and at weekends and bank holidays. There would also be noise generated from reversing bleepers and the constant "hum" of fans; and,
- The proposal will increase traffic generation through the village of Mancetter.

Hartshill Parish Council – It objects to this proposal. The site history of this land is outlined by the Parish Council. It expresses concern about the impact on the residents of Hartshill from odours and traffic; impact on any archaeological remains on the site; impact on the Nuneaton Road from the intensification of the use of this vehicular access; visual intrusion and environmental factors; size of the proposed building; noise from the high velocity fans and pollution to adjacent watercourses.

Atherstone Civic Society – It strongly objects to the proposal. The proposed building is a large industrial shed which takes no account of the character of the countryside as required by paragraph 17 of the NPPF. The proposed building would be highly visible from vantage points on the Hartshill Ridge, particularly from the bridleway/North Arden Heritage Trail on high land to the south. The proposed planting would not screen the building from these vantage points. There is no evidence to suggest that the building has been designed to reflect its setting. The site is close to the site regarded by many experts to be the place where Queen Boudicca fought her last battle against the Romans. Visitors come to look at the sites of Mancetter's Roman history and these plans for a large scale building would hinder the promotion of this area for tourists. Mancetter has already taken more than its fair share of un-neighbourly uses with the long-established animal processing site at De Mulders and the Nuneaton Sewage Works.

Witherley Parish Council – It objects to the proposal as this Intensive Poultry use has the potential to pollute watercourses which feed directly into the River Anker which flows through Witherley Parish. It also expresses concern about the potential for odour nuisance and the spread of aerial pollutants over a wide area. It also considers that the estimated number of vehicle movements is too low; that employing one member of staff will not have any significant employment benefit and that insufficient evidence has been supplied to satisfactorily demonstrate that the proposed development would not have any harmful impacts in this countryside location.

502 objections letters/emails have been received from residents in Mancetter, Atherstone, Hartshill, Witherley and other areas in the country and from the owners of Dobbies Garden Centre relating to concerns about:

- The increased heavy traffic along Nuneaton Road. The road is inadequate to accommodate further heavy lorries. The Listed Buildings at Gramer Cottages are already suffering from cracking due to the heavy goods vehicles using this road.
- The vehicular access into the site from Nuneaton Road is wholly inadequate for this use. There is a solid white line along this part of the carriageway that discourages vehicles from passing.
- Smells and flies – this area is already badly affected by the odours that are produced from the animal rendering plant (Demulders) on Mancetter Road. The smells from this broiler unit will not only affect those properties next to the site but also Mancetter, Hartshill and Witherley. There is a potential for this proposal to generate a large amount of flies in the area.
- Noise – the fans used on the building will produce noise disturbance to surrounding residents
- Surface water pollution – there is the potential for the waste water to pollute the adjoining brook which feeds the River Anker.
- Issues with airborne pollutants contaminating the atmosphere;
- Animal welfare concerns regarding this intensive farming operation.
- This proposal introduces an industrial process activity into this area as it is not related to agriculture.
- The building proposed is large and obtrusive and will be clearly visible from views outside of the site.
- The proposed scheme will only employ one full-time member of staff and so will not generate a lot of employment opportunities in the area.
- Such a use will have a negative impact on the tourism industry in the area including visitors to Dobbies and Plantasia.

Observations

a) Introductory Remarks

Since the November Board meeting, the Environment Agency has issued a Permit for this Intensive Poultry Installation under the Environmental Permitting (England and Wales) Regulations 2010. A copy of the Permit and the supporting report is attached to this report at Appendix C. This Environmental Permit has been granted by the Agency as the operator has demonstrated that the proposed facility meets the requirements of UK and European Laws in how it will be designed and run. Public Health England was notified about this Permit application to ensure that there will be no harm to human health as a result of any proposed activity taking place at this site.

Members are reminded that the Board is dealing with a planning application for the erection of a livestock agricultural building and thus its remit is only to assess the planning merits of the proposal. The Planning Legislation (as stated in Paragraph 122 of the National Planning Policy Framework) clearly states that when determining applications, local planning authorities should focus on whether the development itself is an acceptable use of the land, and the impact of the use, rather than the control of processes or emissions themselves where these are subject to approval under pollution control regimes. It also states that the planning system should operate on the basis that the relevant pollution control regimes will be properly applied and enforced. For this

proposal the planning legislation assumes that the Environmental Permit will control odour, noise, litter and pests as well as handling and storage of residual wastes from the process such as poultry manure, dirty wash water and biomass boiler ash.

In this respect Members are not required to address matters that are more properly dealt with under this other legislation or question how the livestock building will be managed or make any judgement on the personal credentials of the applicant. In order to keep to its remit of only assessing the planning merits of this proposal, the guiding principle for Members is to ask whether the erection of a livestock building in this location accords with the Development Plan.

As such the determination of this proposal in this location requires a balanced assessment of the planning merits of:

- The principle of the proposed development;
- The impact upon residential amenities, in terms of odours and dust,
- The impact upon the landscape and visual amenities of the area,
- Ecological issues,
- The impact upon highway safety,
- Drainage and surface water run-off,
- Archaeological issues and the impact on historic environment and
- Other Considerations.

b) The Principle of the Proposed Development

The site is located in the open countryside and outside the development boundary for Mancetter.

Many objectors have expressed concern that the proposal for intensive poultry rearing constitutes a process more akin to an industrial process than an agricultural enterprise and is therefore inappropriate development in this location. The definition of agriculture, provided by section 336 of the 1990 Town and Country Planning Act, includes “the keeping and breeding of livestock (including any creature kept for the production of food), where that use is ancillary to the farming of land for other agricultural purposes.” Additionally, the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 does include intensive livestock installations under the category of “Agriculture”. There is no case law available to suggest that intensive farming operations are industrial uses. The Council’s Agricultural Advisor also confirms that this operation can only be described as an agricultural use that falls within Section 336(1). As such, it is considered that this building is for the carrying out of an agricultural operation.

Policy NW1 of the Core Strategy states that development outside of a development boundary, and except where other policies of the Plan expressly provide, will be limited to that necessary for agriculture, forestry or other uses that can be shown to require a rural location.

As such the principle of development for agricultural purposes is accepted in this location.

c) Impact on residential amenities in general terms

Modern broiler units can be operated without causing nuisance providing they are run with attention to detail to maintenance and operation, and providing their siting has been given the correct degree of analysis having regard to effects on local inhabitants, local roads and their traffic, landscape issues and the greater environment. Members have had the opportunity to visit an intensive poultry unit with similar bird numbers to the one being proposed. Although this building was an older structure than the modern building being proposed in Mancetter, Members were able to experience the impact on the environment from noise and odour which was limited to inside the building and standing close to the ventilation system which in this case was on the side of the building. From the car park area where Members parked which was some 20 metres away it was certainly not obvious that this building contained some 48,000 birds.

Policy NW10 of the Core Strategy, entitled Development Considerations, states that: "development should meet the needs of residents and businesses without compromising the ability of future generations to enjoy the same quality of life that the present generation aspires to." Paragraph 9 of this policy states that development should, "avoid and address unacceptable impacts upon neighbouring amenities through noise, light, fumes or other pollution". Saved Policy ECON7 (Agricultural and Forestry Buildings and Structures) in the North Warwickshire Local Plan 2006 further states that, "The construction or extension of agricultural or forestry buildings or structures will be permitted provided that in the case of livestock buildings, their siting is not likely to cause disturbance or loss of amenity to occupants of any permanent building off the farm."

The concerns being raised are acknowledged in that farm buildings used for the intensive rearing of animals could create environmental pollution of one kind or another, either air borne or water borne. Reference to a number of recent appeal decisions indicates a wide variety of concerns that may be raised, and of interest is the view expressed in some of the cases by respective Inspectors that a certain level of smell in the countryside is only to be expected. Such statements have of course to be set in the context of the provisions of Part 6 A(2)(1) of Schedule 2 of the General Permitted Development Order which specifically extends planning control over animal buildings and slurry storage within 400 metres of the curtilage of protected buildings. It needs to be made clear that the reference to this distance should not be misrepresented. It does not mean that there is a restriction or "ban" on agricultural buildings within 400 metres of a house. It is merely that within 400 metres, a planning application will be needed for the livestock unit in order that impacts can be thoroughly assessed. In other words the impacts will need to be assessed and that is therefore to be on a site-specific basis. Here the unit is within 400 metres of some 29 dwellings along the Nuneaton Road including Brooklands Cottage which is opposite the site entrance and as such this is the context for assessment. Dwellings that are classed as farmhouses are not included in the definition of protected buildings if the occupants work in the agricultural trade.

Nevertheless, as previously mentioned, the planning policy (as stated in Paragraph 122 of the National Planning Policy Framework) clearly states that when determining applications, local planning authorities should focus on whether the development itself is an acceptable use of the land, and the impact of the use, rather than the control of processes or emissions themselves where these are subject to approval under pollution

control regimes. It also states that the planning system should operate on the basis that the relevant pollution control regimes will be properly applied and enforced.

The Environment Agency has commented that they it has no objections to the proposal and that the permit issued includes controls on noise, dust, flies and odour from the installation. In the Permit, the Agency has set conditions which will protect the environment and people's health and ensure that odour and noise pollution from the broiler unit is kept to a minimum. The Agency will carry out periodic audits and inspections to check compliance with the permit. The Agency can additionally review permit conditions and change these conditions at any time. They can also take enforcement action if the permit holder breaks the conditions of the permit without reference to the Local Planning Authority.

d) Odour

This planning application is accompanied by an Odour Management Plan. An Odour Management Plan is a requirement of the Environmental Permit as this Intensive Poultry Installation is sited within 400 metres of sensitive receptors (in this case residential properties). Odour modelling uses the output of an atmospheric dispersion model to describe the statistically-likely concentration of odour emitted from a point or area on the surrounding environment.

Typically odours are grouped into three categories being:

1) the most offensive (such as the operation at the Sarval Animal Rendering Plant);

2) moderately offensive (such as the operation being proposed here for intensive livestock rearing); and

3) the least offensive (such as breweries, bakeries).

The Environment Agency guidelines published in April 2011 (H4 Odour Management guidance) set the benchmark at 3.0ouE/m^3 for these moderately offensive odours. In very general terms, based on the 'intensity' of the odour then:

- 1 odour unit is the threshold of detection (in the laboratory);
- 3 odour units is the point at which the smell is recognisable, i.e. it could be recognised as poultry odour.
- 5 odour units is noticeable (faint),
- 10 odour units is a distinct smell which can be intrusive.

The amount of time that someone is exposed to the odour; its intensity and the type of odour will all play a part in producing a state of annoyance. In addition, the sensitivity of any particular individual to an odour, their memories of past exposures and the timing of exposure (for example at meal times or perhaps when feeling unwell) are also key factors. The indicative exposure criterion applied to livestock at new installations is:

"3 ouE m-3 as a 98th percentile of a year of hourly means at location xyz".

This means that an average concentration of 3 odour units (averaged over an hour) is to be met at a specified location for 98% of the time, as indicated by modelling.

The Odour Model submitted with the application shows the odour from a Poultry Installation Unit comprising of 90,000 birds in two units with high velocity stacks at 7 metres (copy attached at Appendix D). The shaded area shows the extent of the area which would be affected by an hourly exposure in excess of the Environment Agency's 98%ile hourly mean of 3.0ouE/m^3 within which the impact of odours arising from the operation at the site of two units housing 90,000 birds would be likely to be unacceptable. The closest sensitive dwellings at Brooklands Farm, Brooklands and Mancetter Spring Farm all fall outside of this 3.0ouE/m^3 area.

The Environment Agency has produced a Technical Guidance Note entitled Odour Management at Intensive Livestock Installations (IPPC SRG 6.02). A copy of this report can be found at Appendix E. This Guidance Note states that once odorous emissions leave the source they undergo dilution and dispersion in the atmosphere downwind of the installation. Where odours are released at height, they are likely to be more effectively dispersed than those released at a low level or, inadvertently, from open doors. The design of ventilation systems is a specialist field but in general terms roof (apex) vents produce better dispersion of odorous releases than those positioned along the side of buildings (side wallvents). Members will recall that the Intensive Poultry Unit at Arley Lane Farm had vents along the side of the building whereas the proposed Installation will have vents sited at heights above the building.

The proposal before the Planning and Development Board is for one unit housing 40,001 birds in the south west corner of the site. The Odour Model for this unit will mainly be contained within the site with some odour being experienced on the agricultural land to the east of the site. There would be no sensitive receptors within this 3.0ouE/m^3 area where the impact of odours arising from the operation would be likely to be unacceptable.

The Odour Management Plan submitted with the planning application identifies each source of odour from the operation and the actions taken to minimise odour and odour risk from the operation. The building has been sited so that it is located at the furthest point away from any sensitive receptor. The entrance door to this building is in the south eastern corner of the site.

Transport and disposal of manure also has the potential to generate odour although this does not constitute development. Control measures are included in the proposal to ensure that no manure will be stored on the site. All manure will be removed from the unit when the birds are removed at the end of the growing period. This manure will then be exported from the installation in covered HGVs for use in an energy recovery facility. Details of a Manure Management Plan have been submitted with the application which seeks to minimise the odours during the short period of time this removal process takes place.

Concerns have been expressed about these conclusions, as it is suggested that the Agency has not sought appropriate details from the applicant. The Agency has been invited to submit a written statement to explain how it assessed the likely impact of odour during its consideration of the Permit application. This will be circulated to Members prior to the meeting. However it is understood that the Agency will say that it has not used the Odour Model submitted with this planning application. Instead it has based its assessment on the applicant proposing a well-insulated fan ventilated unit with a full litter which meets the measures included in the Best Available Techniques (BREF) as published by the European IPPC Bureau and reproduced in the Agency's guidance

EPR 6.09 Appendix 3 Section A3.2 for Broilers, together with the Odour Management Plan being written into the Permit. Both of these provide the confidence behind its issue of the Permit and explains why the Agency did not ask for the raw data that informed the conclusion reached in the Odour Model.

Notwithstanding this, Members will be aware that the Odour Model that accompanies the application was based on a much larger operation at this site – 90000 rather than 40000 birds - and it therefore represents a "worst case scenario".

Concerns have also been raised about the cumulative impact of odour from other operations with Environmental Permits in close proximity to this site. In other words the "threshold" for potential odour pollution should be lower than that for a stand-alone plant. The other sites are the Sarval Animal Rendering Plant site at Mancetter Road and Severn Trent Water's Reclamation Works at Woodford Lane. Again, these uses are controlled under the Environment Permitting (England and Wales) Regulations 2010. These uses emit odour categorised as the "most offensive." Through the use of Best Available Technology these operations have modernised the technology they use in order to reduce the level of odour being emitted from these plants.

The Environment Agency has responded to the fears about this cumulative effect from Sarval some 1km to the south east of the proposed Installation by stating that:

"If there are odour issues from either site, the wind direction at the time could be used to determine where the odour originates and the source investigated accordingly. Due to the locations of the sites and the wind direction, the likelihood of a cumulative impact is low. Whilst we accept that intensive farming has the potential to cause odour we are satisfied that the odour impacts from well-run facilities can be managed. If this site operates in accordance with the permit, odour will not be an issue."

In other words the Agency is saying that each site is the subject of controls using the best available technical knowledge; that there being breaches of the controls at the same time is thus a low risk and that as the sites are spaced apart, dispersal and wind direction would be major factors in reducing an adverse cumulative impact. The Agency does not therefore consider that a reduced threshold should thus apply.

e) Air Emissions

The Odour Management Plan contains actions to minimise the creation of dust/bio-aerosols and ammonia at the operation. The best available evidence in relation to bio-aerosol emissions is that they return to existing levels at about 100 metres from the source. Measures are contained within the Environmental Permit to either prevent emissions and where this is not practicable, minimise them. The Environment Agency has concluded in the Permit that the Installation will not cause any significant harm to human health.

Defra's guidance is that dust should only be considered further where the number of birds housed exceeds 400,000 and there are residences within 100 metres. In this case, although there is a residence within 100 metres, the number of birds would be 40,001. As this proposal is some 90% short of this trigger point then exposure to dust is not required to be considered further other than within the Environmental Permit.

A Health Protection Agency Position Statement for Intensive Farming is attached to this report at Appendix F. This Position Statement concludes that these Intensive Farming Installations are likely to be of a low public health impact. Public Health England is a

Statutory Consultee for the IPPC Permit process. Public Health England was notified about Permit application before it was issued to ensure that there will be no harm to human health as a result of any proposed activity taking place at this site.

f) Noise

The proposed development has the potential to generate noise. The Environment Agency has published a Technical Guidance Note on Noise Management at Intensive Livestock Installations (IPPC SRG 6.02 Farming). A copy of this Technical Guidance is attached at Appendix G.

A Noise and Vibration Assessment has been submitted with the application which studies the potential adverse effect of noise arising from the proposed development on the amenity of sensitive receptors. The sources of noise at the site are limited to the following activities:

- unloading of replacement birds, feed and fuel at the site;
- mechanical ventilation of the buildings,
- removal of birds from the site, clearing and removal of broiler litter, and washing down and,
- on-site vehicle movements including staff, maintenance and waste removal vehicles.

In the Plant Noise and Vibration Assessment, the noise from the heat exchanger is identified as having the highest Sound Pressure level. The final scheme has been informed by the results of the noise assessment, with additional mitigation measures including quieter extraction fans and the use of an acoustic barrier around the heat exchanger. The heat exchanger has also been located at the furthest point away from receptors. With the measures in place the assessment concludes that:

"Noise intrusion assessments on the proposed plant have shown that noise levels from the unit are predicted to be within the BS 8233 criteria at nearby sensitive receptor locations on the basis of worst case assumptions. Therefore, the proposed development will not have a 'significant adverse impact' on health or quality of life."

The Environmental Health Officer has confirmed that the noise assessment show that this proposal should not have any adverse impact on nearby properties. To ensure that the installation is operated in this low level of noise, a Noise Management Plan has been prepared and is controlled through the Environmental Permit. With regards to the noise generated by HGVs a condition is recommended limiting the hours that HGVs can access the site to no earlier than 0700 and no later than 1900 each weekday.

g) Conclusions on Residential Amenity

Although this proposal involves an Intensive Poultry Installation within 400 metres of residential dwellings, this needs to be balanced against the way the building has been designed and how the management of the operation has been limited in the Environmental Permit to mitigate any potential impacts from this operation on these residential dwellings. The applicant has stated that to construct this Intensive Poultry Installation they are committed to invest some £750,000 into the Installation to ensure that these Best Available Techniques as set out in the Environmental Permit are used.

As such it is concluded that this modern unit can be operated without causing nuisance providing the detail on maintenance and operation as outlined in the Environmental Permit is fully complied with.

The Environment Agency and the applicant have agreed to participate in a Liaison Group for this Installation. The membership for this Liaison Group would comprise of representatives from Mancetter Parish Council, Hartshill Parish Council and local Members. This Group would meet on specified dates to discuss any operational issues arising in the locality. In particular the applicant could provide the dates when the unit would be cleaned and waste removed.

Indeed, if there are any breaches to this Permit then these will be enforced by the Environment Agency. As part of the Environmental Permit, the operator must display a notice board at the entrance to the site giving contact numbers which must include the Environment Agency 24 hour pollution incident hotline 0800 80 70 60 as well as a contact number for the Operator.

To ensure that this operation remains a process regulated under the Environmental Permitting (England and Wales) Regulations 2010, it is recommended that a condition is imposed on any consent granted stating that the number of birds occupying the site shall exceed 40,001 at all times but that this number shall not exceed 40,200 in recognition of the limited size of this site and its close proximity to a residential area.

h) Impact upon the landscape and visual amenities of the area

The site falls within the Anker Valley Landscape Character Area which in this area is defined by a gently sloping broad valley with mainly large, arable fields enclosed by managed hedges, scattered and waterside trees. The building proposed would be a large agricultural building with a footprint of some 2310 square metres. The concerns being raised are that the proposed building takes no account of the character of the countryside as required by paragraph 17 of the NPPF. It is claimed that the building would be highly visible from vantage points on the Hartshill Ridge, particularly from the bridleway/North Arden Heritage Trail on high land to the south and that the proposed planting would not screen the building from these vantage points. As such the objections being raised are that there is no evidence to suggest that the building has been designed to reflect its setting.

The wider setting of this area is a mixture of an agricultural landscape with dispersed farms and an urban setting comprising man-made features such as the railway embankment, the residential settlement of Mancetter and the modern buildings at Dobbies Garden Centre and Sarval Animal Rendering Plant.

The proposed structure does have a large footprint. However, the structure has a height restricted to 3 metres to its eaves, 5.9 metres to its pitch and 7 metres to the top of the ventilation system. The elevation plan is attached to this report at Appendix H. The picture below relates to the image of the proposed building as taken from the manufacturer's literature.

The proposal is to reduce the ground levels at the highest part of the site (the north-western part) by 2 metres which will result in this building being no higher than the railway embankment it adjoins. This railway embankment is vegetated. Siting the building against this railway embankment lessens the impact of this modern agricultural building on the wider setting. From elevated locations, the development would be visible, albeit sitting against the elevated railway embankment. Given the distances involved from these elevated locations, in particular the Hartshill Ridge, the effect on the landscape would be of limited significance. The proposal also involves the removal of an equestrian building close to Nuneaton Road which will be of benefit to the landscape in this area.

The mature hedgerow which bounds the site and includes Nuneaton Road will be retained. The proposed planting scheme will ensure that any gaps in the boundary vegetation will be blocked up in order to screen views of the building from closer viewpoints. By controlling the use of the materials that this building would be constructed from, this will ensure that the building can blend into the existing landscape.

As such it is concluded that the orientation, separation, relative height compared to the railway embankment and the presence of hedges and trees would ensure that any impact on the open countryside in this location will be limited.

i) Ecological Issues

There are no nationally or locally designated ecological sites within the site with the closest being Woodlands Quarry, Boon's Quarry and Illings Trenches SSSIs which are appropriately 1.2 km to the south.

With regards to the potential impact to protected species on the site, Great Crested Newts have been found in the pond to the north-west of the site. A survey of the Great Crested Newt population has been undertaken and an associated mitigation plan accompanies this planning application. The report concludes that subject to the

requirements of the mitigation plan which includes the construction of site fencing and the licensed catching of the Newts, then the proposed development would not adversely impact on the Great Crested Newt species on the site.

No adverse comments have been received from Warwickshire Wildlife Trust or the Environment Agency with regards to the proposals to relocate the Great Crested Newts on the site. It is considered that a planning condition would suffice to ensure that this licensed catching and relocation occurs before development commences on site.

With regards to other likely ecological issues, the proposal does not involve any felling of trees or the removal of hedgerows. To ensure that contractors do not cause damage to roots during construction, it is recommended that a planning condition is imposed to ensure that an appropriate root protection barrier is installed during the construction period.

The proposal includes the excavation of a surface water balancing pond and additional landscape planting to introduce a new wooded area. These additional ecological features will help to mitigate the proposed development.

j) Impact upon highway safety

Concern is raised regarding the implication of the traffic generated on highway safety on the B4111. Saved Policy TPT1 in the North Warwickshire Local Plan 2006 requires that development will only be permitted where, individually or cumulatively there would be sufficient capacity within the transport network to accommodate traffic generated by the proposal and where there would be no additional hazard to traffic safety or detriment to access visibility.

The figures provided state that the proposed development could generate up to 282 HGV movements per year compared with up to 40 HGV movements for the previous planning approvals at this site for keeping laying pullets. This would equate to approximately 6 HGV's accessing the site each month. The Highway Authority has no objection to the proposal. It states that these HGV movements can be accommodated on the existing highway network, along with all of the other vehicle movements associated with the proposed development. Visibility splays from the vehicular access to the site can be achieved in accordance with guidance, but will require the foliage to be cut back prior to any works commencing and then maintained as such.

From the traffic forecast figures provided, the vast majority of movements to the proposed development relate to daily visits by the farm worker (amounting to two movements per day) and the once a week feed delivery.

The Highway Authority states that the existing and proposed access is not considered suitable for the purpose intended. As such planning conditions are required to be imposed to ensure that the access is rebuilt with kerbed radii and surfaced with a bound material for a minimum distance of 20.0 metres.

For the above reasons, it is concluded that there would be no impact on highway safety from the proposal and that the proposal would comply with Saved Policy TPT1.

k) Drainage and surface water run-off

Concerns are raised in respect of possible flooding. A Flood Risk Assessment has been prepared to accompany this application. The site is located within Flood Zone 1 (considered to be at little or no risk of flooding) on the Environment Agency maps.

Warwickshire County Council as Lead Local Flood Authority for the area state that the east of the site is susceptible to surface water flooding during all rainfall events including the 1 in 30 year rainfall event. It initially expressed concerns that the proposed 2.0 metres of level raising within the surface water flood extents (adjacent the watercourse) would increase the risk of flooding to others.

As a result of the concerns raised, additional information has been submitted showing the relocation of the proposed surface water balancing pond to the west of the site and so outside of the area which is susceptible to surface water flooding. The Lead Flood Authority offers no objection to the proposal providing conditions are imposed to ensure that a minimum of 250 cubic metres of floodplain compensation are provided in accordance with the site drainage plan and provided that a detailed surface water drainage scheme is implemented on the site.

All of the proposed external hardstanding areas have kerbs and have been laid to falls which drain towards gullies which collect surface water and drain to the balancing pond with pollution cut-off valves. The capacity of the balancing pond is 145m³. All run-off from the roof of the new building will be collected and discharged into the balancing pond. From the balancing pond, the water will be discharged into the adjacent watercourse at a rate of no more than 2 litres per second, controlled by a hydraulic brake.

During wash-down, water and cleaning chemicals would run out through the main building entrance and be collected by a lateral drain at the building entrance which would run to an underground reception pit. The capacity of this reception pit would be 31.6m³. This underground reception pit has been relocated to nearer to the attenuation pond. Water from this pit would be pumped out by a registered contractor using a vacuum tanker and taken off-site at the end of each cycle or more frequently if required.

Based on the above it is accepted that the risk of flood waters affecting the building or the surface water balancing pond is extremely unlikely over the lifetime of the development. With the excavation of the on-site balancing pond and the control mechanisms in place to limit the discharge of surface water into the adjoining watercourse, the proposed development would mitigate the potential for increased flooding downstream from the site and so comply with Policy NW10 in the Core Strategy and Government guidance in the NPPF. Measures have also been designed into the installation to ensure that the development would not give rise to any pollution of surface or ground waters.

l) Archaeological issues and impact on historic environment

The site is close to the site regarded by many experts to be the place where Queen Boudicca fought her last battle against the Romans. Concerns are raised that the erection of a large livestock building in this location would hinder the number of visitors who come to look at the sites of Mancetter's Roman history.

The Council has a statutory duty to have special regard to preserving; enhancing and conserving heritage assets. Additionally Policy NW14 (Historic Environment) in the Core Strategy 2014 states that the quality of the historic environment, including archaeological features, Scheduled Ancient Monuments and archaeological sites will be protected and enhanced, commensurate to the significance of the asset.

The heritage asset here is that proposed development is located in an area of archaeological potential at Mancetter. The significance of the asset is that to the north east of the site archaeological deposits associated with an extensive Romano-British settlement have been identified. However, the application site lies outside of the area of land designated as a Scheduled Ancient Monument. To the north-west the remains of a sequence of fortresses, built by the Roman army have been identified. To the west of the application site an area of deserted medieval settlement has been identified as well as an area of early medieval iron production. Therefore, there is the potential for archaeological deposits associated with the occupation of the wider area from at least the Roman period to survive across this site and thus to be potentially disturbed by the development.

The Planning Archaeologist at Warwickshire County Council has provided comments on this application. She states that whilst she does not object to the principle of development on this site, some archaeological work will be required before development commences comprising a first phase of archaeological evaluation by trial trenching. As such it is her opinion that the site can be developed without having a significant impact on preserving any archaeological remains.

There are views towards the site from the Scheduled Ancient Monument. The views are filtered by vegetation and the proposal to lower the ground level of the site by 2.0 metres will reduce these views.

The specific concerns relate to the effect of noise and odour on this area of Roman Remains and the view that this would hinder the promotion of this area for tourism. This report has already concluded that there would be no unacceptable or significant adverse effects on the character and appearance of the surrounding rural area and that there would be no adverse impact on the surrounding area from noise and odour. An archaeological watching brief would ensure that any finds are recorded.

m) Other considerations

The competency of the operator to operate this Intensive Poultry Installation has been questioned by a number of objectors. A planning permission granted here would run with the land and not restricted to an individual and so the competency of the operator is not a material planning consideration. Within the Environmental Permit application, the Operator has to demonstrate by way of their management system (condition 1.1 in the permit) that staff training and development requirements are met, along with provision for keeping up-to-date with technical and legislative changes. The operator would have to employ staff who are trained and experienced in poultry rearing to operate this site in accordance with the requirements of the permit. The competence of the operator is considered throughout the life of the permit.

The welfare of the birds has been voiced by objectors. Approximately 70% of chickens raised for meat globally are raised in intensive farming systems. The welfare of all poultry is protected by other legislation notably The Animal Welfare Act 2006 and supplemented by Schedule 1 of Welfare of Farmed Animals (England) Regulations 2007 as amended. The welfare of laying hens and conventionally reared meat chickens are further protected by more detailed requirements in Schedules 5 (laying hens) and 5A (meat chickens) in the Welfare of Farmed Animals (England) Regulations 2007 as amended. The Department for Environment, Food and Rural Affairs has published guidance which deals specifically with welfare considerations for managing poultry livestock to ensure that the poultry is looked after in ways that meet their welfare needs - ensuring they do not experience any unnecessary distress or suffering.

The welfare of the birds if there is an interruption in the electricity supply has been raised as a concern in the objection letters received. A generator will be permanently available on site to provide backup power.

Network Rail has expressed its concerns that the block plan appears to show the applicant erecting the broiler unit hard against Network Rail's boundary. It states that the railway line is electrified with 25,000 volt AC overhead units which will have a safety issue for the proposed 40000 birds as well as anyone working on the construction of the building or undertaking any future maintenance on the building. The agent has confirmed that a buffer strip in excess of 4.8 metres from the boundary will be provided.

A Risk Assessment Method Statement will be provided prior to construction and the fencing along this embankment would remain as existing.

Although the Installation would only employ one full-time member of staff and other part-time members of staff, the proposal would contribute to the local economy through an investment of around £750,000 that would provide work for local contractors and suppliers during the construction phase and in respect of future maintenance. These are considerations which weigh in favour of allowing the proposal.

n) Conclusions

The principle of an agricultural building in this countryside location is accepted in accordance with Policy NW1 in the Core Strategy 2014. The concerns raised relate to its use as an Intensive Poultry Unit within 400 metres of sensitive receptors. This Board report has balanced each of the issues raised and assessed these issues against the Development Plan policies. As stressed, a lot of the issues raised during the consultation process relate to activities that could harm the environment and human health and these are activities controlled by other legislation in this case through the Environmental Permit. Indeed, the National Planning Policy Framework states that the planning system should operate on the basis that the relevant pollution control regimes will be properly applied and enforced. For this proposal the planning legislation assumes that the Environmental Permit will control odour, noise, litter and pests as well as handling and storage of residual wastes from the process such as poultry manure, dirty wash water and biomass boiler ash. Members should also take into consideration that a certain level of smell is likely to be expected in the countryside as a consequence of agricultural activity. Of relevance here is how any impacts can be managed and that is the purpose behind the permitting system.

As can be seen from above there has been concern expressed by the local community that the Environment Agency has not undertaken due care and diligence in the issue of the Permit. In particular this is to do with the data upon which the assessment was made and the low weight given to looking at cumulative impacts. The Agency strongly rebuts such a suggestion. The Agency in this case has undertaken two extensive public consultations and attended a public meeting. It took the unusual step of issuing a draft Permit for further consultation and extended the period for responses. The matters raised in that period have been considered and addressed by the Agency and reasons set out why those concerns did not led to a re-consideration of the issue of the Permit. These reasons are set out in its supporting statement – Appendix C and in section (d) above together with the additional information that is to be submitted by the Agency. Officers are therefore satisfied that these matters have been properly investigated and considered by the Agency. Indeed this has been verified by the Agency's National Permitting Service. The Council's remit here has thus been met. If objectors maintain their position then that should be followed up directly with the Agency and its complaints procedures.

The building and its associated infrastructure has been sited against an elevated railway embankment in the furthest most corner of the site. The proposal involves additional landscaping and controls over the use of materials to construct the building. As such its impact on the landscape is minimal. Through the use of planning conditions this use can be restricted so that it remains a process regulated under the IPPC regulations and its operation is restricted so that this land use will have a minimal impact on the amenity of the area.

Permitted development rights are to be removed so that any alterations or extensions to the building are strictly controlled through the planning system in view of the balanced arguments in favour of this size of building, in this location and for this number of birds. Permitted development rights are also removed for the installation of solar panels which have the potential to cause glare when viewed from these distant views.
It is recommended that as part of any consent granted for this use a Liaison Group should be established comprising of representatives of the Environment Agency, the applicant, Mancetter Parish Council, Hartshill Parish Council and Local Members to ensure that any issues are highlighted at an early stage and mitigated against. It is recommended that this Liaison Group meets on a six-monthly basis.

Recommendation

A) That planning permission be **GRANTED** subject to the following conditions:

1. The development to which this permission relates must be begun not later than the expiration of three years from the date of this permission.

   REASON

   To comply with Section 91 of the Town and Country Planning Act 1990, as amended by Section 51 of the Planning and Compulsory Purchase Act 2004, and to prevent an accumulation of unimplemented planning permissions.

2. The development hereby permitted shall be carried out in accordance with the following approved plans: RAC/6004/2 Rev C; RAC/6004/3 Rev B and Site Drainage Plan Rev B received by the local planning authority on 5 November 2015 and the Location Plan and Broiler Unit Elevation Plan received by the local planning authority on 4 June 2015.

   REASON

   To ensure that the development is carried out strictly in accordance with the approved plans.

3. Notwithstanding the provisions of the Town and Country Planning (Use Classes) Order 1987 and the Town and Country Planning (General Permitted Development) Order 1995 as amended or in any statutory instrument revoking and re-enacting those Orders with or without modification, the development hereby approved shall only be used as a broiler unit.

   REASON

   In view of the need to control any future proposals in this semi-rural location.

4. Notwithstanding the provisions of the Town and Country Planning (General Permitted Development) Order 1995 (or any order revoking and re-enacting that Order with or without modification), no extensions or alterations to the unit including the fixing of solar panels shall be erected or made at any time.

   REASON

   In the interests of the residential amenity of the area and in view of the setting of this countryside location.

5. The number of birds occupying the poultry unit hereby approved shall exceed 40 001 at all times but shall not exceed 40 200 at any time.

   REASON

   To ensure that this Intensive Poultry Installation is continually operated under the Environmental Permitting (England and Wales) Regulations 2010 whilst acknowledging the limits of the site.

6. Before the building is brought into use the existing stable block as shown on the Drawing entitled “Site Drainage Plan Rev B” received by the local planning authority on 5 November 2015 shall be removed from the site along with the associated hardstanding and the land shall be made good to the satisfaction in writing by the Local Planning Authority.

   REASON

   To prevent the over-intensification of this plot of land and in the interests of highway safety.

7. No development at all of any part of the building hereby approved shall be sited within 4 metres of the boundary of the site with the railway embankment.

REASON

In the interests of ensuring that the development does not interfere with the safe operation of the railway line.

8. Prior to the construction of any building approved by this consent, a minimum of 250 cubic metres of floodplain compensation shall be provided on site in accordance with the site drainage plan drawing ref: RAC/6004/7 Rev B received by the local planning authority on 5 November 2015. The mitigation measures shall then be fully implemented prior to occupation of the buildings.

REASON

To mitigate the potential impact from surface water flooding on the site.

9. No development shall take place until a detailed surface water drainage scheme for the site, based on sustainable drainage principles and an assessment of the hydrological and hydrogeological context of the development, has been submitted to and approved in writing by the Local Planning Authority in consultation with the LLFA. The scheme shall subsequently be implemented in accordance with the approved details before the development is completed. The scheme to be submitted shall:

- Undertake infiltration testing in accordance with the BRE 365 guidance to clarify whether or not an infiltration type drainage strategy is an appropriate means of managing the surface water runoff from the site;
- Demonstrate that the surface water drainage system(s) are designed in accordance with 'The SuDS Manual,' CIRIA Report C753 as well as CIRIA C697, C687 and the National SuDS Standards.
- Limit the discharge rate generated by all rainfall events up to and including the 100 year plus an appropriate allowance for climate change critical rain storm to the equivalent Greenfield runoff rates for the site;
- Demonstrate the provisions of surface water run-off attenuation storage in accordance with the requirements specified in 'Science Report SC030219 Rainfall Management for Developments.'
- Demonstrate detailed design (plans, network details and calculations) in support of any surface water drainage scheme, including details of any attenuation system, and outfall arrangements. Calculations should demonstrate the performance of the designed system for a range of return periods and storm durations inclusive of the 1 in 1 year, 1 in 2 year, 1 in 30 year, 1 in 100 year and 1 in 100 year plus climate change return periods; and,

- Confirm how the on-site surface water drainage systems will be adopted and maintained in perpetuity to ensure long term operation at the designed parameters.

REASON

To prevent the increased risk of flooding; to improve and protect water quality; to improve habitat and amenity; and to ensure the future maintenance of the sustainable drainage structures.

10. Only clean roof water and clean yard areas shall be allowed to drain to the attenuation pond and drain to the watercourse. Contaminated concrete yard areas must not be allowed to drain to the attenuation pond or be released to the watercourse. Yard areas contaminated with manure during shed cleaning/manure removal must be cleaned down to an underground tank of adequate size and removed off site for appropriate disposal.

REASON

To protect the water environment.

11. Heavy Goods Vehicles (HGVs) shall only access or egress the site between the hours of 0700 and 1900 Mondays to Fridays and between the hours of 0700 and 1200 on Saturdays. There shall be no HGV movements outside of these hours and no movements on Sundays and Bank Holidays.

REASON

In the interests of the residential amenity of the neighbouring dwelling houses.

12. Before development commences the area of the site identified as containing Great Crested Newts in the Great Crested Newt Survey Report June 2015 shall be fenced off and the great crested newts shall be captured and relocated to a habitat created, enhanced and set aside for their long term protection and management in accordance with the 2001 Natural England Great Crested Newt Mitigation Guidelines.

REASON

To ensure that this European protected species is not damaged.

13. A root protection barrier of the type recommended in the BS5837:2012 Trees in relation to design, demolition and construction – Recommendations shall be installed around all hedgerows and trees likely to be effected by the construction phase of this development.

REASON

In the interests of preserving the ecology of the site.

14. Before development commences on site the following details shall be submitted for approval:

a) A Written Scheme of Investigation (WSI) for a programme of archaeological evaluative work shall be submitted to and approved in writing by the local planning authority in consultation with the Warwickshire County Council Archaeological Information and Advice Team.

b) The programme of archaeological evaluative work and associated post-excavation analysis, report production and archive deposition detailed within the approved WSI is to be undertaken. A report detailing the results of this fieldwork is to be submitted to the local planning authority.

REASON

In view of the site's location within an area of archaeological potential associated with the extensive Romano-British settlement identified to the north east.

15. Before development commences on site (with the exception of any groundworks associated with the archaeological evaluation detailed above), an Archaeological Mitigation Strategy document (including a Written Scheme of Investigation for any archaeological fieldwork proposed) shall be submitted to and approved in writing by the local planning authority. This should detail a strategy to mitigate the archaeological impact of the proposed development and should be informed by the results of the archaeological evaluation detailed in condition (10) above.

The programme of archaeological fieldwork and associated post-excavation analysis, report production and archive deposition detailed within the approved Archaeological Mitigation Strategy is to be undertaken.

REASON

In view of the site's location within an area of archaeological potential associated with the extensive Romano-British settlement identified to the north east.

16. Access to the site for vehicles shall only be from the position shown on the approved drawing ref: RAC/6004/8 providing a bellmouth with radii of 6.0 metres, an access of not less than 6.0 metres in width for a distance of 20.0 metres, as measured from the near edge of the public highway carriageway, and gates hung within the vehicular access not to open within 20.0 metres of the near edge of the public highway carriageway. The access to the site shall not be reconstructed in such a manner as to reduce the effective capacity of any drain or ditch within the limits of the public highway.

REASON

In the interests of highway safety.

17. Notwithstanding the plans submitted, the access to the site for vehicles shall not be used unless it has been laid out and constructed within the public highway in accordance with the standard specification of the Highway Authority, and surfaced with a bound material for a distance of 20 metres, as measured from the near edge of the public highway carriageway.

REASON

In the interests of highway safety.

18. No development shall commence until full details of the provision of the access, car parking, manoeuvring and service areas, including surfacing, drainage and levels have been submitted to and approved in writing by the local planning authority. No building shall be occupied until the areas have been laid out in accordance with the approved details. Such areas shall be permanently retained for the purpose of parking and manoeuvring of vehicles.

REASON

In the interests of highway safety.

19. No development shall be commenced before full details of the colour and reflectivity of the external materials proposed in the construction of the buildings and feed bins hereby approved shall be submitted to and approved in writing by the Local Planning Authority. The approved details shall thereafter be implemented.

REASON

To minimise the impact of this building and its associated infrastructure on the surrounding area.

20. No floodlights or tannoys shall be placed or erected on the site without details first having been submitted to, and approved in writing, by the Local Planning Authority.

REASON

In the interests of the amenities of the area.

21. Before the commencement of the development, a landscaping scheme shall be submitted to the Local Planning Authority for approval.

REASON

In the interests of the amenities of the area.

22. The scheme referred to in Condition No 20 shall be implemented within six calendar months of the date of occupation of the premises for business purposes, and in the event of any tree or plant failing to become established within five years thereafter, each individual tree or plant shall be replaced within the next available planting season to the satisfaction of the Local Planning Authority.

REASON

In the interests of the amenities of the area.

Informatives

1. Warwickshire County Council as the Lead Local Flood Authority does not consider oversized pipes or box culverts as sustainable drainage. Should infiltration not be feasible at the site, alternative sustainable drainage should be used, with a preference for above ground solutions.

Surface water run-off should be controlled as near to its source as possible through a sustainable drainage approach to surface water management. Sustainable Drainage Systems (SuDS) are an approach to managing surface water run-off which seeks to mimic natural drainage systems and retain water on-site as opposed to traditional drainage approaches which involve piping water off-site as quickly as possible.

SuDS involve a range of techniques including methods appropriate to impermeable sites that hold water in storage areas e.g. ponds, basins, green roofs etc. rather than just the use of infiltration techniques. Support for the SuDS approach is set out in the NPPF.

2. In dealing with this application, the Local Planning Authority has worked with the applicant in a positive and proactive manner through seeking to resolve issues arising. As such it is considered that the Council has implemented the requirement set out in paragraphs 186 and 187 of the National Planning Policy Framework.

3. Great Crested Newts have been found on the site. The applicant will be required to apply for a licence from Natural England to relocate these Great Crested Newts prior to any works commencing on site.

B) That the Head of Development writes to the Environment Agency on behalf of the Board to request that a Liaison Group is established comprising representatives of the Environment Agency, the applicant, Mancetter Parish Council, Hartshill Parish Council and Local Members to ensure that any issues are highlighted at an early stage and mitigated against. It is recommended that this Liaison Group meets on a specified dates to discuss any operational issues arising and in particular early notification of the clean-out days.

BACKGROUND PAPERS

Local Government Act 1972 Section 100D, as substituted by the Local Government Act, 2000 Section 97

Planning Application No: PAP/2015/0348

Background Paper No	Author	Nature of Background Paper	Date
1	The Applicant's Agent	Application Forms, Plans and Statement	9/6/15
2	Mancetter Parish Council	Objection	23/7/15
3	Atherstone Civic Society	Objection	16/7/15
4	Planning Archaeologist, WCC	Consultation response	10/7/15
5	Witherley Parish Council	Objection	13/7/15
6	GVA Grimley	Objection	9/7/15
7	Lead Local Flood Authority, WCC	Objection	19/6/15
8	Environmental Health Officer	Consultation Response	8/7/15
9	Environment Agency	Consultation Response	30/6/15
10	WCC Highways Authority	Consultation Response	15/6/15
11	Agent	Email	6/7/15
12	502 residents	Objections	June – July 2015
13	Network Rail	Consultation Response	16/6/15
14	S. Wilkinson	Screening Opinion	16/6/15
15	Environment Agency	Email	5/10/15
16	S. Wilkinson	Email	5/10/15
17	Environment Agency	Draft Environmental Permit	6/10/15
18	S. Wilkinson	Email	6/10/15
19	S. Wilkinson	Letter	8/12/15
20	Lead Local Flood Authority, WCC	Consultation Response	6/11/15
21	Agent	Amended plans	5/11/15
22	Environment Agency	Environmental Permit	21/12/15

Note: This list of background papers excludes published documents which may be referred to in the report, such as The Development Plan and Planning Policy Guidance Notes.

A background paper will include any item which the Planning Officer has relied upon in preparing the report and formulating his recommendation. This may include correspondence, reports and documents such as Environmental Impact Assessments or Traffic Impact Assessments.

Appendix A

(7) Application No: PAP/2015/0348

Land At Crown Stables, Nuneaton Road, Mancetter, CV9 1RF

Erection of 40,001 bird broiler building and associated control room, feed silos, LPG tank, heat exchanger, hard-standing and attenuation pond, for

Crown Waste Management

Introduction

This application is reported to the Board at the discretion of the Head of Development Control in view of the significant local interest registered against this proposal during the consultation exercise and due to the determination of this application resting on a finely balanced assessment of the planning merits. In this circumstance it is suggested that the Board visit an Intensive Poultry Installation in the Borough.

The Site

This is a rectangular area of part of a much larger grassland field on the south side of Nuneaton Road (B4111). It measures some 0.92 hectares. There are two residential properties to the north of the site with one of these properties opposite the vehicular access to the site. The West Coast railway line bounds the site to the south west with one further residential property located beyond this railway line to the south west of the site. The settlement of Mancetter lies to the north-west of this site.

The development site is situated at approximately 80 metres AOD on a gentle south-easterly slope. There is a stable block and storage building in the eastern corner of the field, with the land in a long-term grass ley.

The site location is illustrated at Appendix A.

The Proposal

The proposal is for the erection of a broiler shed, control room and associated infrastructure. The building measures some 110 metres by 21 metres to a height of 3 metres to its eaves and 5.9 metres to its pitch. The building will be ridge ventilated with 18 high speed roof fans with emission points 7 metres above ground level and an efflux speed greater than 7 metres per second. In addition to the fans, windows on the sides of the building allow for natural ventilation. Other associated infrastructure includes two feed silos, a heat exchanger and an underground collection pit within a concrete yard.

The building will be constructed on a concrete base with surface water draining to an attenuation pond. The building would run parallel with the boundary of the railway.

The installation comprises a single broiler unit providing capacity for 40,001 broiler places. Day old chicks are brought into the unit and are fed and watered until they reach about 37 days of age, at which point they are removed from the site and taken to a meat processing facility. There is a 7 day cleaning period and with stocking and destocking time the average cycle is 48 days.

Manure is removed from the unit when the growing cycle is complete and the birds are removed. All manure is to be exported from the installation for use in an energy recovery facility. Water from the wash out of the poultry house, and condensate from the heat exchanger will be channelled to a covered reception pit close to the broiler unit to await collection and export off site. Roof water and yard rain water will be directed into drains and into a rainwater attenuation pond before a controlled release to the adjacent watercourse.

A number of supporting documents have been submitted.

- A Supporting Statement;
- A Great Crested Newt Survey;
- An Odour Management Plan;
- A Site Drainage Plan;
- A Vehicular Access Plan; and,
- Rejected Alternative Site Details;

Background

Historically there have been planning applications at this site associated with the agricultural and equestrian use of this site, namely through the erection of a stable block, an agricultural building and a vehicular access.

Development Plan

North Warwickshire Core Strategy 2014 – NW1 (Sustainable Development); NW10 (Development Considerations), NW11 (Renewable Energy and Energy Efficiency), NW12 (Quality of Development), NW13 (Natural Environment), NW14 (Historic Environment) and NW15 (Nature Conservation).

North Warwickshire Local Plan 2006 (Saved Policies) - Core Policy 10 (Agriculture and the Rural Economy); ENV12 (Urban Design), ENV13 (Building Design), ENV14 (Access Design), ECON7 (Agricultural and Forestry), and TPT1 (Transport Considerations).

Other Relevant Material Planning Considerations

National Planning Policy Framework 2012

National Planning Policy Guidance 2014

Under the Environmental Permitting (England and Wales) Regulations 2010, an Environmental Permit will be required from the Environment Agency for this Intensive Poultry Installation. The Environment Agency is currently considering an application made to them by Crown Stables for the Installation of a single broiler unit providing capacity for 40,001 broiler places.

Observations

The site is located in the open countryside and outside the development boundary for Mancetter.

Concerns have been expressed that the proposal for intensive poultry rearing constitutes a process more akin to an industrial process than an agricultural enterprise and is therefore inappropriate development in this location. The definition of agriculture, provided by section 336 of the 1990 Town and Country Planning Act, includes "the keeping and breeding of livestock (including any creature kept for the production of food), where that use is ancillary to the farming of land for other agricultural purposes". The Design and Access Statement indicates that the applicant owns very little land in the vicinity. Nevertheless, the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 does include intensive livestock installations under the category of Agriculture. There is no case law available to suggest that intensive farming operations are industrial uses. The Council's Agricultural Advisor also confirms that this operation can only be described as an agricultural use that falls within Section 336(1). As such, it is considered that this building is for the carrying out of an agricultural operation.

Policy NW1 states that development outside of a development boundary and except where other policies of the Plan expressly provide, will be limited to that necessary for agriculture, forestry or other uses that can be shown to require a rural location. As such the principle of development for agricultural purposes is accepted.

However, the erection of an Intensive Poultry Installation in this location raises the following issues:

- Impact upon residential amenities, in terms of odours and dust;
- Impact upon the landscape and visual amenities of the area;
- Ecological issues;
- Impact upon highway safety;
- Drainage and surface water run-off; and,
- Archaeological issues and impact on historic environment.

In this case the balance between the principle of agricultural development in this location and the likely impacts that such a use has the potential to cause will be at the forefront of the discussion when the Board determines the application. As such, it is recommended that an Intensive Poultry Installation is visited by Members in order that they can better understand the operation of such an Installation.

The owners of Arley Lane Farm, Station Road, Arley have agreed that Members may visit their Poultry Unit at an organised site visit on a date to be arranged. The Unit is not a Broiler Unit but it is a 70,000 bird Intensive Poultry Rearing Unit where birds are kept from day old chicks up to 16 week old pullets ready for sale as laying pullets. The building at Arley Lane Farm is a two-storey building.

It is also recommended that Members take the opportunity to familiarise themselves with the site involved with this planning application and its surroundings from Nuneaton Road.

Recommendation

That a site visit to Arley Lane Farm, Station Road, Arley is organised prior to the determination of this application at Crown Stables, Nuneaton Road, Mancetter.

BACKGROUND PAPERS

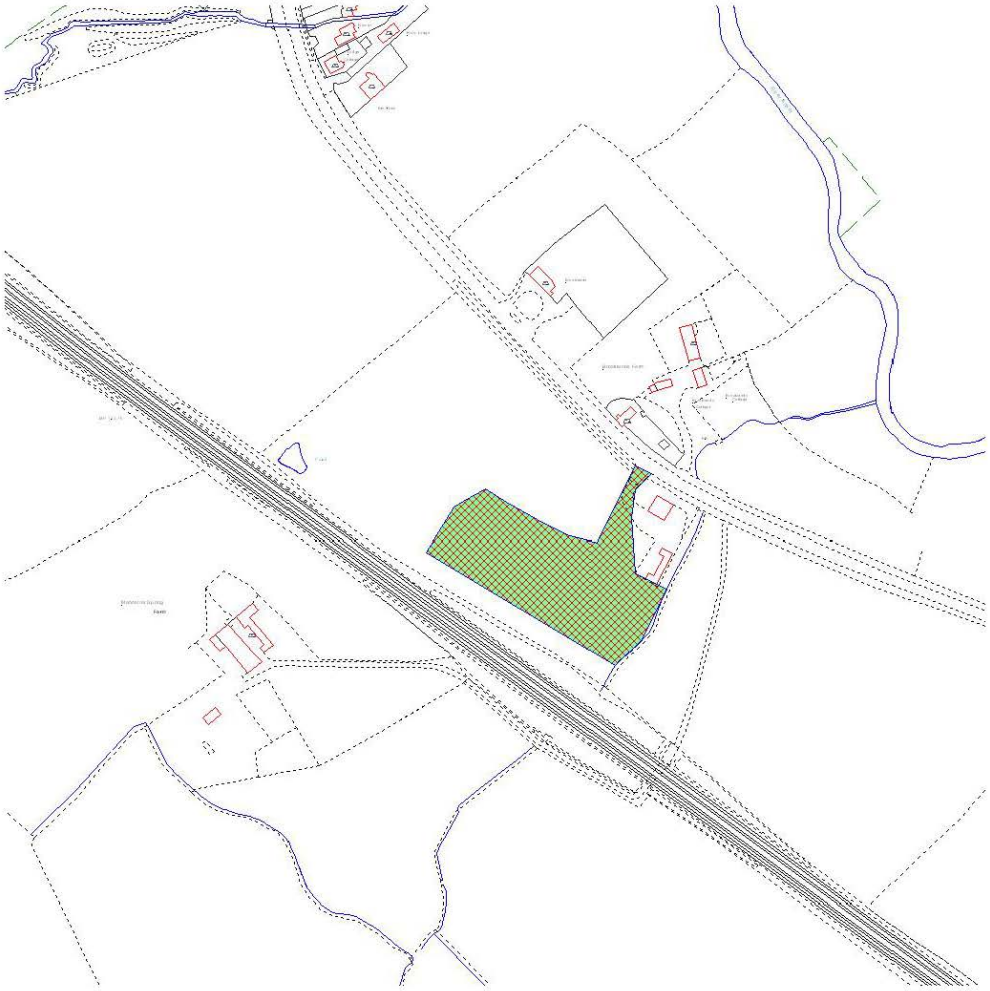
Local Government Act 1972 Section 100D, as substituted by the Local Government Act, 2000 Section 97

Planning Application No: PAP/2015/0348

Background Paper No	Author	Nature of Background Paper	Date
1	The Applicant's Agent	Application Forms, Plans and Statement(s)	8/6/15

Note: This list of background papers excludes published documents which may be referred to in the report, such as The Development Plan and Planning Policy Guidance Notes.

A background paper will include any item which the Planning Officer has relied upon in preparing the report and formulating his recommendation. This may include correspondence, reports and documents such as Environmental Impact Assessments or Traffic Impact Assessments.



APPENDIX B

Site Visit 21 November 2015

PAP/2015/0348: Crown Stables, Nuneaton Road, Mancetter

Intensive Poultry Unit, Arley Lane Farm, Station Road, Arley

Present: Cllrs Bell, Davies, L. Dirveiks, N. Dirveiks, Henney, Jarvis, Jenns, Jones, Lea, Lewis, Moss, Phillips, Simpson, Sweet, A. Wright

S. Wilkinson (Case Officer), Mr K. Aslam (applicant), employee of Potters Poultry

10.35am – Site Visit commenced at Crown Stables, Nuneaton Road, Mancetter, CV9 1RF

Members walked to the location of the proposed building. The design and dimensions of the building were explained along with its location alongside the railway embankment and watercourse. The height of the railway embankment was discussed compared to the height of the building.

The location of the surface water balancing pond was shown along with the location of the sealed foul water container, the feed silos, the heat exchanger and the extent of the hardstanding area.

Questions were raised about the changes in ground level. It was explained that the building would be dug into the ground so the ground level would be at the lowest part of the field which is some 5 metres lower.

Members walked back to the vehicular access onto Nuneaton Road.

11.15am – Potters Poultry, Arley Lane Farm, Station Road, Arley, CV7 8GD

Members walked around the outside of the Intensive Poultry building. Members then looked inside the building. There were 48,000 chicks aged 3 weeks old. These chicks are being raised as laying pullets.

It was explained that this building is some 20 years old and has two floors each containing chickens. On the ground floor the chicks are kept in deep litter. On the first floor the manure is transported out of the building on a conveyor building. This is different to the building proposed at Mancetter which is a single storey unit where the chickens will be kept in deep litter and all manure will be contained within the building.

Members walked into the first floor level of the building and observed the chicks through an open door.

The site visit finished at 11.55am.

SMW 21/11/15

APPENDIX C

Permit with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Crown Waste Management Limited

Crown Stables
Nuneaton Road
Mancetter
North Warwickshire
CV9 1RF

Permit number

EPR/TP3035EW

Crown Stables
Permit number EPR/TP3035EW

Introductory note

The main features of the permit are as follows.

Crown Stables Poultry Unit is situated to the south of Mancetter, North Warwickshire. The installation is approximately centred on National Grid Reference SP 32381 96053.

The installation is operated by Crown Waste Management Limited and comprises a single broiler unit providing capacity for 40,001 broiler places.

Day old chicks are brought into the unit and are fed and watered until they reach about 37 days of age, at which point they are removed from the site and taken to a meat processing facility. There is a 7 day cleaning period and with stocking and destocking time the average cycle length is 48 days.

The chicks are bedded on wood shavings to a minimum depth of 2cm, fresh bedding is added throughout the cycle. Non-leaking drinking systems will be used so that the litter does not get too wet, and reducing the likelihood of run off to the underground reception pit.

The broiler unit is ventilated by 18 high speed roof fans with emission point 7 metres above ground level and an efflux speed greater than 7 metres per second. In addition to the fans, windows on the sides of the building allow for natural ventilation.

Other associated infrastructure includes two feed silos, a heat exchanger to regulate the temperature in the building, the underground reception pit located within a concrete yard and an attenuation pond for collection of uncontaminated rainwater from the yard within the installation boundary.

Manure is removed from the unit when the growing cycle is complete and the birds are removed. All manure is exported from the installation for use in an energy recovery facility. Water from the wash out of the poultry house, and condensate from the heat exchanger, is channelled to the covered reception pit to await collection and export off site. Roof water and yard rain water is directed into drains and into a rainwater attenuation pond before a controlled release to the adjacent watercourse.

The broiler feed is stored in sealed feed bins, which are filled via a closed delivery system. Carcasses are collected and stored in a secure container on site for removal. At the end of the cycle the houses are depopulated, washed and disinfected ready for the next cycle.

This permit implements the requirements of the European Union Directive on Industrial Emissions.

The status log of the permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	**Date**	**Comments**
Application EPR/TP3035EW/A001	Duly made 28/04/15	Application for an intensive farming poultry installation permit.
Additional information received	04/06/15	Clarification on heat exchanger, noise management plan and receptors.
Additional information received	27/07/15	Updated OMP, site drainage plan
Additional information received	18/08/15	Clarification on attenuation pond and carcass removal
Additional information received	05/11/15	Hardstanding and drainage review (PO 1)
Permit determined EPR/TP3035EW	14/12/15	Permit issued to Crown Waste Management Limited.

End of introductory note

Permit

The Environmental Permitting (England and Wales) Regulations 2010

Permit number

EPR/TP3035EW

The Environment Agency hereby authorises, under regulation 13 of the Environmental Permitting (England and Wales) Regulations 2010

Crown Waste Management Limited ("the operator"),

whose registered office is

Suite 17
Building 2/4 Bilton Industrial Estate
Humber Avenue
Coventry
CV3 1JL

company registration number 05264291

to operate an installation at

Crown Stables
Nuneaton Road
Mancetter
North Warwickshire
CV9 1RF

to the extent authorised by and subject to the conditions of this permit.

Name	Date
Philip Lamb	**14 December 2015**

Authorised on behalf of the Environment Agency

Conditions

1 Management

1.1 General management

1.1.1 The operator shall manage and operate the activities:

(a) in accordance with a written management system that identifies and minimises risks of pollution, including those arising from operations, maintenance, accidents, incidents, non-conformances, closure and those drawn to the attention of the operator as a result of complaints; and

(b) using sufficient competent persons and resources.

1.1.2 Records demonstrating compliance with condition 1.1.1 shall be maintained.

1.1.3 Any person having duties that are or may be affected by the matters set out in this permit shall have convenient access to a copy of it kept at or near the place where those duties are carried out.

1.2 Energy efficiency

1.2.1 The operator shall:

(a) take appropriate measures to ensure that energy is used efficiently in the activities;

(b) review and record at least every four years whether there are suitable opportunities to improve the energy efficiency of the activities; and

(c) take any further appropriate measures identified by a review.

1.3 Efficient use of raw materials

1.3.1 The operator shall:

(a) take appropriate measures to ensure that raw materials and water are used efficiently in the activities;

(b) maintain records of raw materials and water used in the activities;

(c) review and record at least every four years whether there are suitable alternative materials that could reduce environmental impact or opportunities to improve the efficiency of raw material and water use; and

(d) take any further appropriate measures identified by a review.

1.4 Avoidance, recovery and disposal of wastes produced by the activities

1.4.1 The operator shall take appropriate measures to ensure that:

(a) the waste hierarchy referred to in Article 4 of the Waste Framework Directive is applied to the generation of waste by the activities;

(b) any waste generated by the activities is treated in accordance with the waste hierarchy referred to in Article 4 of the Waste Framework Directive; and

(c) where disposal is necessary, this is undertaken in a manner which minimises its impact on the environment.

1.4.2 The operator shall review and record at least every four years whether changes to those measures should be made and take any further appropriate measures identified by a review.

2 Operations

2.1 Permitted activities

2.1.1 The operator is only authorised to carry out the activities specified in schedule 1 table S1.1 (the "activities").

2.2 The site

2.2.1 The activities shall not extend beyond the site, being the land shown edged in green on the site plan at schedule 7 to this permit.

2.3 Operating techniques

2.3.1 The activities shall, subject to the conditions of this permit, be operated using the techniques and in the manner described in the documentation specified in schedule 1, table S1.2, unless otherwise agreed in writing by the Environment Agency.

2.3.2 If notified by the Environment Agency that the activities are giving rise to pollution, the operator shall submit to the Environment Agency for approval within the period specified, a revision of any plan or other documentation ("plan") specified in schedule 1, table S1.2 or otherwise required under this permit which identifies and minimises the risks of pollution relevant to that plan, and shall implement the approved revised plan in place of the original from the date of approval, unless otherwise agreed in writing by the Environment Agency.

2.3.3 The operator shall maintain and implement a system to record the number of animal places and animal movements.

2.3.4 Any raw materials or fuels listed in schedule 2 table S2.1 shall conform to the specifications set out in that table.

2.3.5 The operator shall take appropriate measures in off-site disposal or recovery of solid manure or slurry to prevent, or where this is not practicable, to minimise pollution.

2.3.6 The operator shall ensure that where waste produced by the activities is sent to a relevant waste operation, that operation is provided with the following information, prior to the receipt of the waste:

(a) the nature of the process producing the waste;

(b) the composition of the waste;

(c) the handling requirements of the waste;

(d) the hazardous property associated with the waste, if applicable; and

(e) the waste code of the waste.

2.3.7 The operator shall ensure that where waste produced by the activities is sent to a landfill site, it meets the waste acceptance criteria for that landfill.

2.4 Pre-operational conditions

2.4.1 The activities shall not be brought into operation until the measures specified in schedule 1 table S1.3 have been completed.

3 Emissions and monitoring

3.1 Emissions to water, air or land

3.1.1 There shall be no point source emissions to water, air or land except from the sources and emission points listed in schedule 3 tables S3.1 and S3.2.

3.1.2 The limits given in schedule 3 shall not be exceeded.

3.1.3 Periodic monitoring shall be carried out at least once every 5 years for groundwater and 10 years for soil, unless such monitoring is based on a systematic appraisal of the risk of contamination.

3.2 Emissions of substances not controlled by emission limits

3.2.1 Emissions of substances not controlled by emission limits (excluding odour) shall not cause pollution. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved emissions management plan, have been taken to prevent or where that is not practicable, to minimise, those emissions.

3.2.2 The operator shall:

(a) if notified by the Environment Agency that the activities are giving rise to pollution, submit to the Environment Agency for approval within the period specified, an emissions management plan which identifies and minimises the risks of pollution from emissions of substances not controlled by emission limits; and

(b) implement the approved emissions management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

3.2.3 All liquids in containers, whose emission to water or land could cause pollution, shall be provided with secondary containment, unless the operator has used other appropriate measures to prevent or where that is not practicable, to minimise, leakage and spillage from the primary container.

3.3 Odour

3.3.1 Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour.

3.4 Noise and vibration

3.4.1 Emissions from the activities shall be free from noise and vibration at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Environment Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved noise and vibration management plan to prevent or where that is not practicable to minimise the noise and vibration.

3.5 Monitoring

3.5.1 The operator shall, unless otherwise agreed in writing by the Environment Agency, undertake the monitoring specified in the following tables in schedule 3 to this permit:

(a) point source emissions specified in tables S3.1 and S3.2.

3.6 Pests

3.6.1 The activities shall not give rise to the presence of pests which are likely to cause pollution, hazard or annoyance outside the boundary of the site. The operator shall not be taken to have breached this condition if appropriate measures, including, but not limited to, those specified in any approved pests management plan, have been taken to prevent or where that is not practicable, to minimise the presence of pests on the site.

3.6.2 The operator shall:

(a) if notified by the Environment Agency, submit to the Environment Agency for approval within the period specified, a pests management plan which identifies and minimises risks of pollution, hazard or annoyance from pests;

(b) implement the pests management plan, from the date of approval, unless otherwise agreed in writing by the Environment Agency.

4 Information

4.1 Records

4.1.1 All records required to be made by this permit shall:

(a) be legible;

(b) be made as soon as reasonably practicable;

(c) if amended, be amended in such a way that the original and any subsequent amendments remain legible, or are capable of retrieval; and

(d) be retained, unless otherwise agreed in writing by the Environment Agency, for at least 6 years from the date when the records were made, or in the case of the following records until permit surrender:

(i) off-site environmental effects; and

(ii) matters which affect the condition of the land and groundwater.

4.1.2 The operator shall keep on site all records, plans and the management system required to be maintained by this permit, unless otherwise agreed in writing by the Environment Agency.

4.2 Reporting

4.2.1 The operator shall send all reports and notifications required by the permit to the Environment Agency using the contact details supplied in writing by the Environment Agency.

4.2.2 The operator shall, unless notice under this condition has been served within the preceding four years, submit to the Environment Agency, within six months of receipt of a written notice, a report assessing whether there are other appropriate measures that could be taken to prevent, or where that is not practicable, to minimise pollution.

4.3 Notifications

4.3.1 In the event:

(a) that the operation of the activities gives rise to an incident or accident which significantly affects or may significantly affect the environment, the operator must immediately—

(i) inform the Environment Agency,

(ii) take the measures necessary to limit the environmental consequences of such an incident or accident, and

(iii) take the measures necessary to prevent further possible incidents or accidents;

(b) of a breach of any permit condition the operator must immediately—

(i) inform the Environment Agency, and

(ii) take the measures necessary to ensure that compliance is restored within the shortest possible time;

(c) of a breach of permit condition which poses an immediate danger to human health or threatens to cause an immediate significant adverse effect on the environment, the operator must immediately suspend the operation of the activities or the relevant part of it until compliance with the permit conditions has been restored.

4.3.2 Any information provided under condition 4.3.1 shall be confirmed by sending the information listed in schedule 5 to this permit within the time period specified in that schedule.

4.3.3 Where the Environment Agency has requested in writing that it shall be notified when the operator is to undertake monitoring and/or spot sampling, the operator shall inform the Environment Agency when the relevant monitoring and/or spot sampling is to take place. The operator shall provide this information to the Environment Agency at least 14 days before the date the monitoring is to be undertaken.

4.3.4 The Environment Agency shall be notified within 14 days of the occurrence of the following matters, except where such disclosure is prohibited by Stock Exchange rules:

Where the operator is a registered company:

(a) any change in the operator's trading name, registered name or registered office address; and

(b) any steps taken with a view to the operator going into administration, entering into a company voluntary arrangement or being wound up.

Where the operator is a corporate body other than a registered company:

(a) any change in the operator's name or address; and

(b) any steps taken with a view to the dissolution of the operator.

In any other case:

(a) the death of any of the named operators (where the operator consists of more than one named individual);

(b) any change in the operator's name(s) or address(es); and

(c) any steps taken with a view to the operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case of them being in a partnership, dissolving the partnership.

4.3.5 Where the operator proposes to make a change in the nature or functioning, or an extension of the activities, which may have consequences for the environment and the change is not otherwise the subject of an application for approval under the Regulations or this permit:

(a) the Environment Agency shall be notified at least 14 days before making the change; and

(b) the notification shall contain a description of the proposed change in operation.

4.3.6 The Environment Agency shall be given at least 14 days notice before implementation of any part of the site closure plan.

4.4 Interpretation

4.4.1 In this permit the expressions listed in schedule 6 shall have the meaning given in that schedule.

4.4.2 In this permit references to reports and notifications mean written reports and notifications, except where reference is made to notification being made "immediately", in which case it may be provided by telephone.

Schedule 1 – Operations

Table S1.1 activities		
Activity listed in Schedule 1 of the EP Regulations	**Description of specified activity**	**Limits of specified activity**
Section 6.9 A(1)(a)(i) Rearing of poultry intensively in an installation with more than 40,000 places	The rearing of poultry in a facility with a capacity for 40,001 broiler places.	From receipt of birds, raw materials and fuels onto the site to removal of birds and associated wastes from site.
Directly Associated Activity	**Description of specified activity**	**Limits of specified activity**
-	-	-

Table S1.2 Operating techniques		
Description	**Parts**	**Date Received**
Application EPR/TP3035EW/A001	Responses to Part B3.5 of the application form and referenced supporting documentation.	28/04/15
Application EPR/TP3035EW/A001	Odour management plan reference RAC 6004 Appendix 9; Noise management plan reference RAC 6004 Appendix 10.	28/04/15
Application EPR/TP3035EW/A001	Technical Standards RAC 6004 Appendix 5	28/04/15
Response to RFI dated 21/05/15	Response to all points of email and supporting documents detailing the Heat Exchangers, the noise management plan and receptors.	04/06/15
Response to RFI dated 26/06/15	Response to all parts of email and supporting documents: Site plan, Odour Management Plan dated 24/07/15.	27/07/15
Submission for PO 1	RAC/6004 Hardstanding and drainage review.	05/11/15

Table S1.3 Pre-operational measures	
Reference	**Pre-operational measures**
PO 1	Prior to any construction commencing on site, the Operator shall review the drainage plans and submit an updated plan to the Environment Agency for approval. The updated drainage plan must include specific reference to drainage from the concrete yard areas, ensuring measures are in place to *prevent* contamination of surface waters, including the attenuation pond, by materials including manures, washwaters and spilt feed. The plan should take into account the appropriate measures for the management of drainage systems and run-off in section 3.2 of EPR6.09 How to Comply – Intensive Farming, Version 2. The plan shall be implemented by the operator from the date of approval in writing by the Environment Agency subject to such amendments or additions as notified by the Environment Agency.

Schedule 2 – Waste types, raw materials and fuels

Table S2.1 Raw materials and fuels	
Raw materials and fuel description	**Specification**
-	-

Schedule 3 – Emissions and monitoring

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (including unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
High velocity roof fan outlets on broiler unit (point 2) as shown on the Emission Points plan reference 'Appendix 14' in application EPR/TP3035EW/A001	Broiler unit	---	---	---	---	---
Exhaust from standby generator	Standby Generator	---	---	---	---	---
Outlet from heat exchanger (point 4) as shown on the Emission Points plan reference 'Appendix 14' in application EPR/TP3035EW/A001	heat exchanger	---	---	---	---	---

Table S3.2 Point Source emissions to water (other than sewer) and land – emission limits and monitoring requirements						
Emission point ref. & location	**Source**	**Parameter**	**Limit (incl. unit)**	**Reference Period**	**Monitoring frequency**	**Monitoring standard or method**
Outlet to surface water (point 5) as shown on Site Drainage Plan with RAC/6004 Hardstanding and drainage review	Rainwater from roof and hardstanding	---	---	---	---	---

Schedule 4 – Reporting

There is no reporting under this schedule.

Schedule 5 – Notification

These pages outline the information that the operator must provide.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the EP Regulations.

Part A

Permit Number	
Name of operator	
Location of Facility	
Time and date of the detection	

(a) Notification requirements for any malfunction, breakdown or failure of equipment or techniques, accident, or emission of a substance not controlled by an emission limit which has caused, is causing or may cause significant pollution	
To be notified within 24 hours of detection	
Date and time of the event	
Reference or description of the location of the event	
Description of where any release into the environment took place	
Substances(s) potentially released	
Best estimate of the quantity or rate of release of substances	
Measures taken, or intended to be taken, to stop any emission	
Description of the failure or accident.	

(b) Notification requirements for the breach of a limit	
To be notified within 24 hours of detection	
Emission point reference/ source	
Parameter(s)	
Limit	
Measured value and uncertainty	
Date and time of monitoring	
Measures taken, or intended to be taken, to stop the emission	

Time periods for notification following detection of a breach of a limit	
Parameter	**Notification period**

(c) Notification requirements for the detection of any significant adverse environmental effect	
To be notified within 24 hours of detection	
Description of where the effect on the environment was detected	
Substances(s) detected	
Concentrations of substances detected	
Date of monitoring/sampling	

Part B – to be submitted as soon as practicable

Any more accurate information on the matters for notification under Part A.	
Measures taken, or intended to be taken, to prevent a recurrence of the incident	
Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment which has been or may be caused by the emission	
The dates of any unauthorised emissions from the facility in the preceding 24 months.	

Name*	
Post	
Signature	
Date	

* authorised to sign on behalf of the operator

Schedule 6 – Interpretation

"accident" means an accident that may result in pollution.

"application" means the application for this permit, together with any additional information supplied by the operator as part of the application and any response to a notice served under Schedule 5 to the EP Regulations.

"authorised officer" means any person authorised by the Environment Agency under section 108(1) of The Environment Act 1995 to exercise, in accordance with the terms of any such authorisation, any power specified in section 108(4) of that Act.

"building" means a construction that has the objective of providing sheltering cover and minimising emissions of noise, particulate matter, odour and litter.

"emissions to land" includes emissions to groundwater.

"emissions of substances not controlled by emission limits" means emissions of substances to air, water or land from the activities, either from the emission points specified in schedule 3 or from other localised or diffuse sources, which are not controlled by an emission limit.

"EP Regulations" means The Environmental Permitting (England and Wales) Regulations SI 2010 No.675 and words and expressions used in this permit which are also used in the Regulations have the same meanings as in those Regulations.

"groundwater" means all water, which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

"Industrial Emissions Directive" means DIRECTIVE 2010/75/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 November 2010 on industrial emissions.

"Manure and slurry" have the following meaning:

- Manures may be either slurries or solid manures.
- Slurries consist of excreta produced by livestock whilst in a yard or building mixed with rainwater and wash water and, in some cases, waste bedding and feed. Slurries can be pumped or discharged by gravity.
- Slurry includes duck effluent, seepage from manure and wash water.
- Solid manures include farmyard manure (FYM) and comprise material from straw-based housing systems, excreta with lots of straw/sawdust/woodchips in it, or solids from mechanical separators.
- Most poultry systems produce solid manure (litter).
- Solid manure can generally be stacked.

"pests" means Birds, Vermin and Insects.

"SGN How to comply – Intensive Farming" The EPR Sector Guidance Note 6.09 for intensive pig and poultry farmers, Version 2 published January 2010.

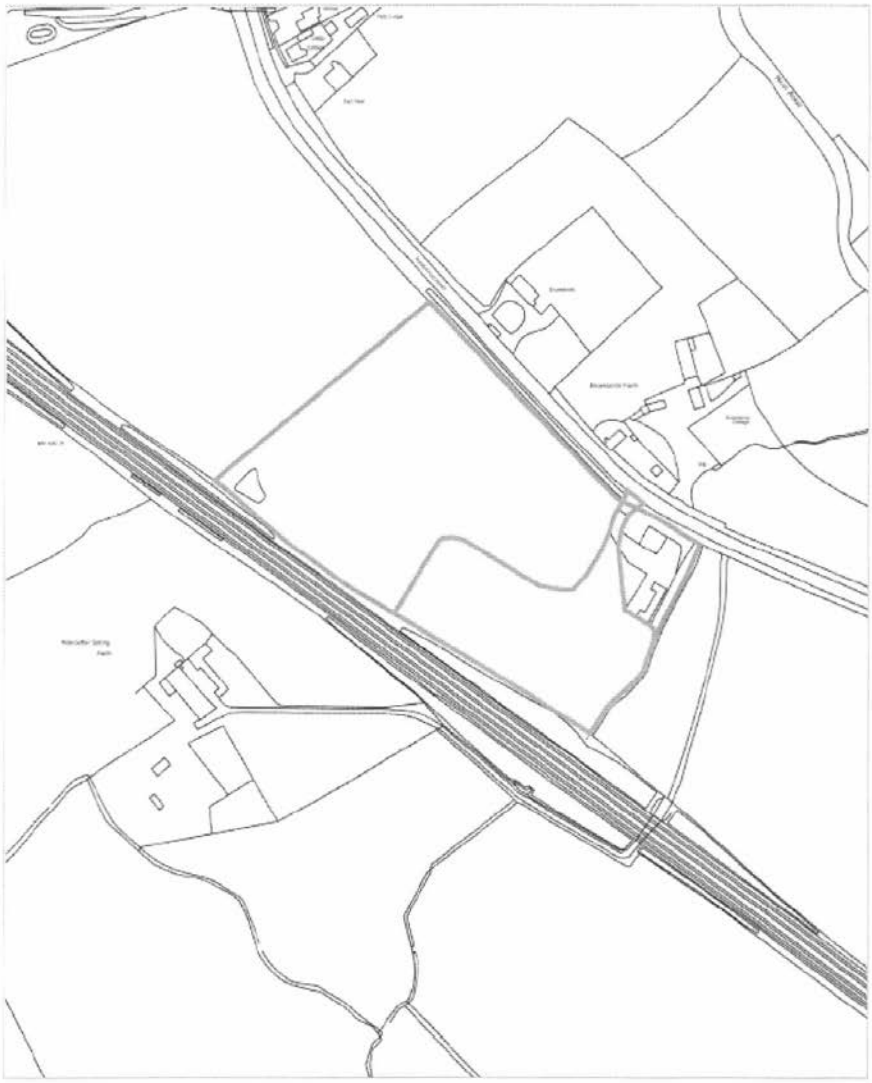
"waste code" means the six digit code referable to a type of waste in accordance with the List of Wastes (England)Regulations 2005, or List of Wastes (Wales) Regulations 2005, as appropriate, and in relation to hazardous waste, includes the asterisk.

"Waste Framework Directive" or "WFD" means Waste Framework Directive 2008/98/EC of the European Parliament and of the Council on waste.

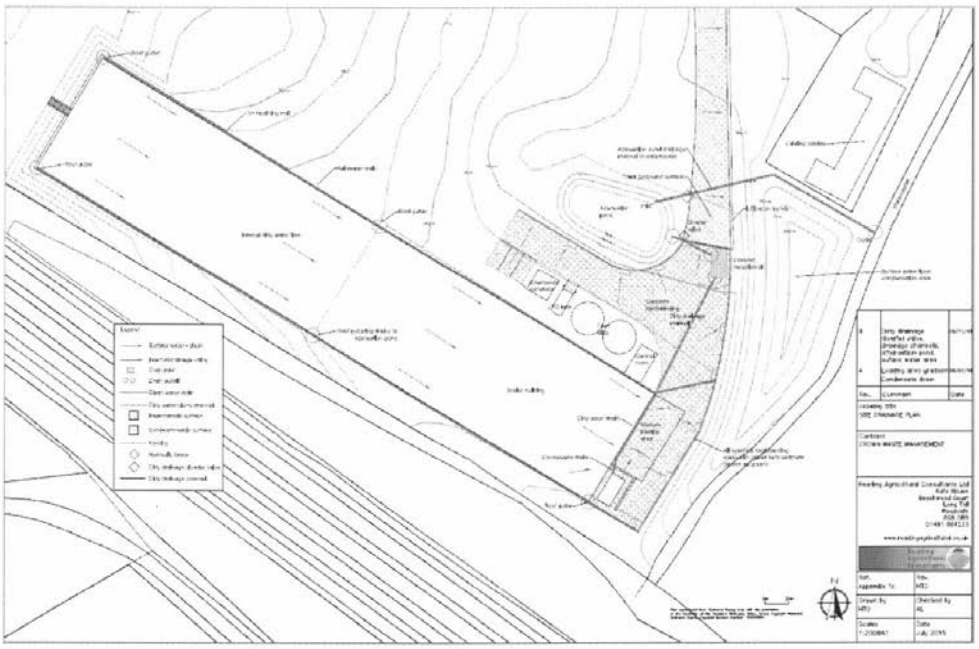
"year" means calendar year ending 31 December.

Schedule 7 – Site plan

Installation boundary plan



Site layout:



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END OF PERMIT

The Company Director and or Secretary
Crown Waste Management Limited
Suite 17
Building 2/4 Bilton Industrial Estate Humber Avenue
Coventry
CV3 1JL

Our ref: EPR/TP3035EW/A001

Date: 18 December 2015

Dear Sir or Madam

Pollution Inventory reporting

As part of your EPR permit to operate, you are required to report on annual releases of pollutants from your installation to our Pollution Inventory.

Enclosed is a notice requiring you to make your annual report to the Pollution Inventory (PI). We serve this in exercise of our powers under regulation 60(1) of the Environmental Permitting Regulations, 2010.

Important changes to the Pollution Inventory

The notice requires the completion and submission of information specified in the attached Pollution Inventory Schedule, for each permit detailed, for the calendar year 2012 onwards. The Schedule asks for information on annual mass releases to air, water and land and off-site transfers of waste and of specified substances in waste water.

Following the 2012 Pollution Inventory substance review a decision has been made to reduce the number of reportable substances to 110. Of this number, 8 new substances identified as priority pollutants under the Water Framework Directive have been added to the substance list. Reporting on these additional substances will become mandatory only in February 2014 for the 2013 reporting year.

The deadline for submitting this information is the **28 February** of the year following that being reported. Please note that the report asks for total releases during each calendar year, so you should not return any information until after 31st December of that year. The Environment Agency will no longer be issuing notices on a three year cycle, notices will only be issued when changes are made to the Pollution Inventory reporting requirements

This letter and notice have been sent to both the installation and registered office address, where these are different. Only one form per installation needs to be submitted.

We use the information to meet the UK's obligations to report on releases from industrial sites to the European Pollutant Release and Transfer Register (E-PRTR), and to produce our Pollution Inventory. These will be published on the Internet. We recommend that you complete your PI return using our web-based reporting system. This system can be accessed by following the links to our Pollution Inventory homepage on our website (https://www.gov.uk/environmental-permit-how-to-apply/monitoring-and-reports).

If you are unable to use the web-based reporting system, you can complete a paper form. This is available to download from our website (https://www.gov.uk/environmental-permit-how-to-apply/monitoring-and-reports) or from any Environment Agency office. The completed form must be returned to your local Environment Agency office.

A fact sheet on legislation, information on reporting requirements and tools for estimating releases, are available on our website (https://www.gov.uk/environmental-permit-how-to-apply/monitoring-and-reports).

For any queries on Pollution Inventory reporting please contact either your local Environment Agency officer, or the Pollution Inventory team (contact details at the bottom of the page).

Yours faithfully,

Damian Matthias
Customer Operations Manager

Encs.

- Regulation 60(1) notice
- Pollution Inventory Schedule 2

Requirement for information
Environmental Permitting (England and Wales) Regulations 2010 Regulation 60(1) Notice

Notice requiring information

To: The Company Director and or Secretary
Crown Waste Management Limited
Suite 17
Building 2/4 Bilton Industrial Estate Humber Avenue
Coventry
CV3 1JL

This Notice relates to the activities you operate that are authorised by the Permit Number(s) specified below (each permit number is shown with the appropriate operating address).

EPR/TP3035EW/A001	Crown Waste Management Limited	Crown Stables, Nuneaton Road, Mancetter, North Warwickshire CV9 1RF

The Environment Agency, exercising our power under Regulation 60(1) of the Environmental Permitting (England and Wales) Regulations 2010, requires you to provide the information detailed in the attached Pollution Inventory Schedule in respect of each Permit referred to above:

- for the 2014 calendar year by 28 February 2015, and for every calendar year thereafter by 28 February of the following year, until further notice is given.

The information must be provided by submission of:

- an electronic return (this can be achieved by following the links to the web-based reporting system from the Environment Agency's Pollution Inventory homepage (https://www.gov.uk/environmental-permit-how-to-apply/monitoring-and-reports); or
- Environment Agency Pollution Inventory form (this is available from the Pollution Inventory web pages or in paper copy from any Environment Agency office).

When returning information on the Pollution Inventory form, this should be submitted to your local area office.

Signed

Damian Matthias
Customer Operations Manager

Customer services line: 03708 506 506
Email: enquiries@environment-agency.gov.uk
Environment Agency, Quadrant 2, 99 Parkway Avenue, Sheffield, S9 4WF

Pollution Inventory Schedule (2)

The Pollution Inventory (PI) requires you to report information relating to the annual releases[1] of substances specified in this Schedule, to air, water and land and off-site transfers of waste and of specified substances in wastewater[2]

The Environment Agency has just undertaken a substance review. As a result of this review the substances in this Schedule have been significantly reduced overall, with the addition of several new Water Framework Directive substances (shown in italics). You are not required to report on the new substances in your 2012 submission: reporting of these is a requirement in your 2013 submission onwards.

PI information must be submitted in accordance with the dates specified in the enclosed EPR Environmental Permitting (England and Wales) Regulations 2010 Regulation 60 (1) Notice.

The information required by this Schedule should be reported to us either by our web-based reporting system, access to which is available via our website at https://www.gov.uk/environmental-permit-how-to-apply/monitoring-and-reports, or by completion of the paper Form PI-1.

This schedule is applicable to all EPR A1 intensive agriculture installations, waste landfills and sewage treatment works required to report via the WIA ministerial direction. It is valid from 2012 until revised.

The Schedule, form and web based reporting system consist of the following parts:

Part 1 – About the operator and site
Part 2 – Releases to air
Part 3 – Releases to land
Part 4 – Releases to controlled waters
Part 5 – Off-site transfers in wastewater
Part 6 – Off-site waste transfers
Part 7 – Overseas waste transfers

The requirements of each part are set out overleaf.

[1] A release is "any introduction of pollutants into the environment as a result of human activity, whether deliberate or accidental, routine or non-routine, including spilling, emitting, discharging, injecting, disposing or dumping or through sewer systems without final waste-water treatment."
[2] Transfers in wastewater should include masses of PI substances in any wastes transferred via sewer or other means (eg tanker) direct to waste-water treatment works.

Part 1 About the operator and site

The information we require you to provide in Part 1, includes:

- Details about you and your operations – permit number, operator name and address, contact details and description of site activities;

- Any claim that information provided is confidential. If you wish to claim confidentiality for your Pollution Inventory or REPI data you must provide a full justification in the form of an objection notice. This must be provided to your site inspector who will issue you with a notice of determination to grant or decline the request. The Environment Agency does not grant confidentiality for release or emissions data except in cases of national security.

Purpose of Parts 2, 3, 4 and 5 of this Schedule

Parts 2, 3, 4 and 5 of this Schedule list the individual reportable substances for each environmental medium (air, water, land and wastewater) and the reporting thresholds that apply to those substances.

The information you will have to provide for each reportable substance includes:

1. **Total releases**

   Total releases = the sum of **all** releases from the 'reporting unit' (reporting unit describes the EPR permitted facility or sewage treatment works), that is:
   annual mass/TEQ of substance released including *fugitive* **and** *notifiable* releases.

   Fugitive releases = releases not contained at source.
   Notifiable releases = releases from unplanned and unpermitted/unauthorised operations, for example resulting from an emergency, accident etc., which require separate notification to us.

   - If the 'total releases' figure is below the reporting threshold, it should be reported as 'brt' (below reporting threshold);
   - The figures for releases to controlled waters and transfers in wastewater should be compared separately against the reporting thresholds;
   - For releases to controlled waters, the receiving media should be reported as either G = groundwater, R = river, E = estuary or S = sea;
   - 'n/a' (not applicable) should be entered against substances not released;
   - All releases should be reported in either kilotonnes 'kt', tonnes 't', kilograms 'kg', grams 'g' or milligrams 'mg' per year as appropriate.
   - Where a substance may be present but is not detected by the accepted analytical method it should be reported as n/a.

2. **Method of release determination**

   This requires identification of the method used to generate the reported releases and transfers, that is *M = Measurement*, *C = Calculation* or *E = Estimation*. Where the data reported is based on *Measurement* or *Calculation*, further details are required. Please refer to PI reporting guidance for more information about this requirement.

3. **Separate figure for any *notifiable* releases, where appropriate**

   You are required to provide a separate figure for any notifiable releases (defined in paragraph 1 above).

Part 2 Releases to air

Reportable Substance: common name [alternative name]	**CAS no.**	**Reporting threshold in kg**
Inorganics		
Ammonia	7664-41-7	1,000
Asbestos	1332-21-4	1
Carbon dioxide	124-38-9	10 million
Carbon dioxide from qualifying renewable fuel sources (Reportable when the total amount of CO_2 released is above 10 million kg)	124-38-9	
Carbon monoxide	630-08-0	100,000
Hydrogen cyanide	74-90-8	100
Nitrous oxide	10024-97-2	10,000
Sulphur hexafluoride	2551-62-4	10
Organics		
Aldrin	309-00-2	1
Anthracene	120-12-7	10
Benzene	71-43-2	1,000
Benzo(a)pyrene	50-32-8	1
Benzo(b)fluoranthene	205-99-2	1
Benzo(k)fluoranthene	207-08-9	1
Butadiene [1,3-Butadiene]	106-99-0	100
Carbon tetrachloride [Tetrachloromethane]	56-23-5	10
Chlordane	57-74-9	1
Chlordecone	143-50-0	1
Chloroform [Trichloromethane]	67-66-3	100
Dichlorodiphenyltrichloroethane (DDT)	50-29-3	1
Dichloromethane [DCM, Methylene chloride]	75-09-2	1,000
Dieldrin	60-57-1	1
Di(2-Ethylhexyl)phthalate (DEHP)	117-81-7	10
Endrin	72-20-8	1
Ethylene dichloride [1,2-Dichloroethane]	107-06-2	1,000
Ethylene oxide [1,2-Epoxyethane]	75-21-8	1,000
Heptachlor	76-44-8	1
Hexabromobiphenyl	36355-1-8	0.1
Hexachlorobenzene	118-74-1	1
Hexachlorocyclohexane – all isomers	608-73-1	1
Indeno(1,2,3-cd)pyrene	193-39-5	1
Lindane	58-89-9	1
Methane	74-82-8	10,000
Methyl chloroform [1,1,1-Trichloroethane]	71-55-6	10
Mirex	2385-85-5	1
Naphthalene	91-20-3	100
Pentachlorobenzene	608-93-5	1
Pentachlorophenol	87-86-5	1
Tetrachloroethane [1,1,2,2-Tetrachloroethane]	79-34-5	10
Tetrachloroethylene [PERC]	127-18-4	100

Reportable Substance: **common name** [alternative name]	CAS no.	Reporting threshold in kg
Toxaphene	8001-35-2	1
Trichlorobenzene - all isomers	12002-48-1	1
Trichloroethylene	79-01-6	1,000
Vinyl chloride	75-01-4	1,000
Metals and compounds *expressed as mass of the metal only*		
Arsenic and compounds - as As	7440-38-2	1
Cadmium and compounds – as Cd	7440-43-9	1
Chromium and compounds - as Cr	7440-47-3	10
Copper and compounds - as Cu	7440-50-8	10
Lead and compounds - as Pb	7439-92-1	100
Mercury and compounds – as Hg	7439-97-6	1
Nickel and compounds – as Ni	7440-02-0	10
Selenium and compounds – as Se	7782-49-2	100
Zinc and compounds - as Zn	7440-66-6	100
Other substance groups *reported as total mass unless otherwise stated*		
Chlorine and inorganic compounds - as HCl	7782-50-5	10,000
Chlorofluorocarbons (CFCs)	-	1
Dioxins and furans (PCDDs/PCDFs) as I-TEQ	-	0.00001
Dioxins and furans (PCDDs/PCDFs) as WHO-TEQ	-	0.00001
Fluorine and inorganic compounds - as HF	7782-41-4	1,000
Halons	-	1
Hydrochlorofluorocarbons (HCFCs)	-	1
Hydrofluorocarbons (HFCs)	-	100
Nitrogen oxides - NO and NO_2 as NO_2	-	100,000
Non-methane volatile organic compounds (NMVOCs)	-	10,000
Particulate matter - $PM_{2.5}$	-	1,000
Particulate matter - PM_{10}	-	1,000
Particulate matter – TSP	-	10,000
Perfluorocarbons (PFCs)	-	10
Polychlorinated biphenyls (PCBs)	1336-36-3	0.1
Polychlorinated biphenyls (PCBs) - as WHO-TEQ	1336-36-3	0.00001
Sulphur oxides - SO_2 and SO_3 as SO_2	-	100,000

Part 3 Releases to land

Reporting of releases to land is limited to deep injection and chemical land treatment. It is not for reporting releases to land 'resulting in benefit to agriculture or ecological improvement'

The reportable substances and reporting thresholds shown in the table below are required for the following releases to land:

- Disposal by land spreading within category D2 of Annex IIA of the Waste Framework Directive[3];
- Disposal by deep injection within category D3 of Annex IIA of the Waste Framework Directive[4].

These are required for releases within **or outside** the boundary of the permitted operation.

For other information required in respect of the 'total releases' of each reportable substance, please refer to the section 'Purpose of Parts 2, 3, 4 and 5 of this Schedule'.

Reportable Substance: common name [alternative name]	CAS no.	Reporting threshold in kg
Inorganics		
Asbestos	1332-21-4	1
Organics		
Alachlor	15972-60-8	1
Aldrin	309-00-2	1
Anthracene	120-12-7	1
Atrazine	1912-24-9	1
Benzene (Reportable if sum of BTEX[5] exceeds 200 kg)	71-43-2	200
Benzo(a)pyrene	50-32-8	1
Benzo(b)fluoranthene	205-99-2	1
Benzo(k)fluoranthene	207-08-9	1
Chlordane	57-74-9	1
Chlordecone	143-50-0	1
Chlorfenvinphos	470-90-6	1
Chlorpyrifos	2921-88-2	1
Dichlorodiphenyltrichloroethane (DDT)	50-29-3	1
Dichloromethane [DCM,Methylene choride]	75-09-2	10
Dieldrin	60-57-1	1
Di(2-ethylhexyl)phthalate (DEHP)	117-81-7	1
Diuron	330-54-1	1
Endosulfan	115-29-7	1
Endrin	72-20-8	1
Ethylbenzene (Reportable if sum of BTEX[5] exceeds 200 kg)	100-41-4	200
Ethylene dichloride [1,2-Dichloroethane]	107-06-2	10
Ethylene oxide [1,2-Epoxyethane]	75-21-8	10
Heptachlor	76-44-8	1
Hexabromobiphenyl	36355-1-8	0.1
Hexachlorobenzene (HCB)	118-74-1	1
Hexachlorobutadiene	87-68-3	1
Hexachlorocyclohexane - all isomers	608-73-1	1

[3] Annex I of the Waste Framework Directive 2008/98/EC contains a list of disposal operations, which includes category D2 "Land treatment (e.g. biodegradation of liquid or sludgy discards in soils, etc.)";
[4] Annex I of the Waste Framework Directive 2008/98/EC contains a list of disposal operations, which includes category D3 "injection (e.g. injection of pumpable discards into wells, salt domes or naturally occurring repositories, etc.)".
[5] BTEX is benzene, toluene, ethylbenzene, and xylenes

Reportable Substance: common name [alternative name]	CAS no.	Reporting threshold in kg
Indeno(1,2,3-cd)pyrene	193-39-5	1
Isoproturon	34123-59-6	1
Lindane	58-89-9	1
Mirex	2385-85-5	1
Naphthalene	91-20-3	10
Pentachlorobenzene	608-93-5	1
Pentachlorophenol (PCP)	87-86-5	1
Simazine	122-34-9	1
Toluene (Reportable if sum of BTEX[Error! Bookmark not defined.] exceeds 200 kg)	108-88-3	200
Toxaphene	8001-35-2	1
Trifluralin	1582-09-8	1
Vinyl chloride	75-01-4	10
Xylene – all isomers (Reportable if sum of BTEX[Error! Bookmark not defined.] exceeds 200 kg)	1330-20-7	200
Metals and compounds *expressed as mass of the metal only*		
Arsenic and compounds – as As	7440-38-2	5
Cadmium and compounds – as Cd	7440-43-9	5
Chromium and compounds - as Cr	7440-47-3	50
Copper and compounds – as Cu	7440-50-8	50
Lead and compounds – as Pb	7439-92-1	20
Mercury and compounds – as Hg	7439-97-6	1
Nickel and compounds - as Ni	7440-02-0	20
Zinc and compounds – as Zn	7440-66-6	100
Other substance groups *reported as total mass unless otherwise stated*		
Brominated diphenylethers – penta-, octa- and deca-BDE	-	1
Chlorides – as Cl	16887-00-6	2 million
Cyanides – as CN	57-12-5	50
Dioxins and furans (PCDDs/PCDFs) – as I-TEQ	-	0.0001
Dioxins and furans (PCDDs/PCDFs) as WHO-TEQ		0.0001
Fluorides – as F	16984-48-8	2,000
Halogenated organic compounds – as AOX	-	1,000
Nitrogen – total	-	50,000
Nonylphenols and nonylphenol ethoxylates	-	1
Organotin compounds - as Sn	-	50
Phenols – phenol and simple substituted phenols as C	108-95-2	20
Phosphorus – total	-	5,000
Polychlorinated biphenyls (PCBs)	1336-36-3	0.1
Polychlorinated biphenyls as WHO-TEQ	-	0.0001
Short chain (C_{10-13}) chlorinated paraffins (SCCPs)	85535-84-8	1
Tributyltin and compounds – as TBT	56573-85-4	1
Triphenyltin and compounds – as TPT	668-34-8	1

Parts 4 and 5 Releases to controlled waters & transfers in wastewater

The figures for releases to controlled waters and transfers in wastewater should be compared separately to the reporting threshold.

Reportable Substance: common name [alternative name]	CAS no.	Reporting threshold in kg
Inorganics		
Asbestos	1332-21-4	0.1
Organics		
Alachlor	15972-60-8	0.1
Aclonifen	74070-46-5	To be advised
Aldrin	309-00-2	0.0005
Anthracene	120-12-7	0.1
Atrazine	1912-24-9	0.05
Benzene (Reportable if sum of BTEX[Error! Bookmark not defined.] exceeds 200 kg)	71-43-2	10
Benzo(a)pyrene	50-32-8	1
Benzo(b)fluoranthene	205-99-2	1
Benzo(g,h,i)perylene	191-24-2	0.1
Benzo(k)fluoranthene	207-08-9	1
Bifenox	42576-02-3	To be advised
Carbon tetrachloride [Tetrachloromethane]	56-23-5	1
Chlordane	57-74-9	0.1
Chlordecone	143-50-0	0.1
Chlorfenvinphos	470-90-6	0.1
Chloroform [Trichloromethane]	67-66-3	5
Chlorpyrifos	2921-88-2	0.1
Cybutryne	28159-98-0	To be advised
Cypermethrin	52315-07-8	0.005
Dichlorodiphenyltrichloroethane (DDT)	50-29-3	0.0005
Dichloromethane [DCM, Methylene chloride]	75-09-2	10
Dichlorvos	62-73-7	To be advised
Diclofenac	15307-86-5	To be advised
Dicofol	115-32-2	To be advised
Dieldrin	60-57-1	0.0005
Di(2-ethylhexyl)phthalate (DEHP)	117-81-7	0.1
Diuron	330-54-1	0.05
17-beta-estradiol (E2)	50-28-2	To be advised
17-alpha-ethinylestradiol (EE2)	57-63-6	To be advised
Endosulfan	115-29-7	0.0005
Endrin	72-20-8	0.0005
Ethylbenzene (Reportable if sum of BTEX[Error! Bookmark not defined.] exceeds 200 kg)	100-41-4	10
Ethylene dichloride [1,2-Dichloroethane]	107-06-2	10
Ethylene oxide [1,2-Epoxyethane]	75-21-8	1
Fluoranthene	206-44-0	0.1
Heptachlor *(and heptachlor epoxide)*	76-44-8	0.1
Hexabromobiphenyl	36355-1-8	0.1
Hexabromocyclododecane	25637-99-4	0.1
Hexachlorobenzene	118-74-1	0.01
Hexachlorobutadiene	87-68-3	0.1
Hexachlorocyclohexane – all isomers	608-73-1	0.01
Isodrin	465-73-6	0.0005
Isoproturon	34123-59-6	0.01
Lindane	58-89-9	0.1
Mirex	2385-85-5	0.1
Naphthalene	91-20-3	1

Reportable Substance: common name [alternative name]	CAS no.	Reporting threshold in kg
Pentachlorobenzene	608-93-5	0.1
Pentachlorophenol	87-86-5	0.05
Perfluorooctane sulphonic acid and its derivatives (PFOS)	1763-23-1	0.1
Quinoxyfen	124495-18-7	To be advised
Simazine	122-34-9	0.01
Terbutryn	886-50-0	To be advised
Tetrachloroethylene (PERC)	127-18-4	1
Toluene (Reportable if sum of BTEX[Error! Bookmark not defined.] exceeds 200 kg)	108-88-3	10
Toxaphene	8001-35-2	0.1
Trichlorobenzene – all isomers	12002-48-1	0.01
Trichloroethylene	79-01-6	1
Trifluralin	1582-09-8	0.001
Vinyl chloride	75-01-4	1
Xylene – all isomers (Reportable if sum of BTEX[Error! Bookmark not defined.] exceeds 200 kg)	1330-20-7	10
Metals and compounds *expressed as mass of the metal only*		
Arsenic and compounds - as As	7440-38-2	5
Cadmium and compounds - as Cd	7440-43-9	1
Chromium and compounds - as Cr	7440-47-3	20
Copper and compounds - as Cu	7440-50-8	20
Iron and compounds – as Fe **(FOR WALES ONLY)**	7439-89-6	1000
Lead and compounds - as Pb	7439-92-1	20
Mercury and compounds - as Hg	7439-97-6	0.1
Nickel and compounds - as Ni	7440-02-0	20
Zinc and compounds – as Zn	7440-66-6	100
Other substance groups *reported as total mass unless otherwise stated*		
Brominated diphenylethers – *tetra*-, penta-, *hexa*-, *hepta*-, octa- and deca-BDE	-	0.1
Chlorides – as Cl	16887-00-6	2 million
Cyanides – as CN	57-12-5	50
Dioxins and furans (PCDDs/PCDFs) as I-TEQ	-	0.0001
Dioxins and furans (PCDDs/PCDFs) as WHO-TEQ		0.0001
Fluorides – as F	-	2,000
Halogenated organic compounds - as AOX	-	1,000
Nitrogen – total	-	50,000
Nonylphenols and nonylphenol ethoxylates	-	1
Octylphenols and octylphenol ethoxylates	1806-26-4	1
Organotin compounds - as Sn	-	5
Phenols – phenol and simple substituted phenols as C	108-95-2	20
Phosphorus – total	-	5,000
Polychlorinated biphenyls (PCBs)	-	0.001
Polychlorinated biphenyls (PCBs) as WHO-TEQ		0.0001
Short chain (C_{10-13}) chlorinated paraffins (SCCPs)	85535-84-8	0.1
Total organic carbon (TOC)	-	50,000
Tributyltin and compounds - as TBT	-	0.005
Triphenyltin and compounds – as TPT	668-34-8	0.1

For other information required in respect of the 'total releases' of each reportable substance, please refer to the section 'Purpose of Parts 2, 3, 4 and 5 of this Schedule'.

Part 6 Off-site waste transfers

Part 6 should include all off-site transfers of activity-related wastes **except** wastewaters which should be reported in Part 5 as chemical-specific transfers.

For off-site transfers of activity-related wastes, the following information should be provided:

- Weight, in tonnes;
- 6-figure European Waste Catalogue (EWC) code[5];
- Waste Framework Directive (WFD) disposal and recovery (D&R) codes[6];
- Identification of the method used to generate the reported data, that is *M = Measurement*, *C = Calculation* or *E = Estimation*, including further details of any *Measurement* or *Calculation* method used.

The following points should also be noted:

- Any wastes already reported in Part 3 - Releases to land (i.e. disposal activities D2 - Land treatment and D3 - Deep injection) should be excluded;
- All hazardous waste transfers should be reported regardless of tonnage;
- Other wastes transferred off-site should be reported where the total transferred exceeds 5 tonnes, otherwise report 'brt' (below reporting threshold) for each category where a transfer occurs;

For any transfers involving the Transfrontier Shipment of Waste (TFS) for recovery additional details, including the name and address of the recoverer and the address of the actual recovery site receiving the transfer, are required. Please refer to PI reporting guidance for more information about how to report TFS.

Part 7 – Overseas Waste Transfer

Part 7 should include any activity-related hazardous waste that is sent overseas for disposal or recovery.

The following information should be provided:

- Total Weight in tonnes
- Identification of the method used to generate the reported data, that is *M = Measurement*, *C = Calculation* or *E = Estimation*, including further details of any *Measurement* or *Calculation* method used.
- Name and address of the recoverer/disposer and the address of the site that is receiving the waste.

[5] EWC codes: these represent the types of waste as defined in the European Waste Catalogue (EWC);
[6] WFD disposal and recovery (D&R) codes: these represent the methods of disposal and recovery as defined operations listed in Annex II to the Directive.

Determination of an Application for an Environmental Permit under the Environmental Permitting (England & Wales) Regulations 2010.

Decision document recording our decision-making process

The Permit Number is:	**EPR/TP3035EW**
The Applicant is:	**Crown Waste Management Limited**
The Installation is located at:	**Crown Stables Poultry Unit** **Nuneaton Road** **Mancetter** **North Warwickshire** **CV9 1RF**

Application consultation commenced on:	13 May 2015
Application consultation ended on:	25 June 2015
Draft decision consultation commenced on:	29 September 2015
Draft decision consultation ended on:	26 October 2015

Environment Agency permitting decisions

What this document is about

This is a decision document, which accompanies a permit.

It explains how we have considered the Applicant's Application, and why we have included the specific conditions in the permit we are proposing to grant. It is our record of our decision-making process, to show how we have taken into account all relevant factors in reaching our position. Unless the document explains otherwise, we have accepted the Applicant's proposals.

We have made our final decision only after carefully taking into account any relevant matter raised in the responses we received.

Preliminary information and use of terms

We gave the application the reference number EPR/TP3035EW/A001. We refer to the application as "the **Application**" in this document in order to be consistent.

The number we propose to give to the permit is EPR/TP3035EW. We refer to the proposed permit as "the **Permit**" in this document.

The Application was duly made on 28 April 2015.

The Applicant is Crown Waste Management Limited. We refer to Crown Waste Management Limited as "the **Applicant**" in this document. Where we are talking about what would happen after the Permit is granted (if that is our final decision), we call Crown Waste Management Limited "the **Operator**".

The proposed facility is located at Crown Stables, Nuneaton Road, Mancetter, North Warwickshire, CV9 1RF. We refer to this as "the **Installation**" in this document.

This Application became designated as High Public Interest during the determination and towards the end of the initial consultation period when we became aware of the level of public interest in the site.

The consultation period ran initially from 13 May 2015 to 11 June 2015 and was subsequently extended by 10 working days, providing further opportunity for comments to be submitted. Although comments continue to be received and considered up to the point this decision document is issued.

Many of the comments received were resubmissions of comments made for a previous Planning application, and do not relate directly to issues that the Environment Agency regulate or can consider as part of the determination of the Application.
The resulting comments have been considered and are addressed in Annex 1 of this document.

We have summarised the consultation responses received in respect of the consultation on our draft decision; the main change from the draft decision document is an update to the site drainage in section 3 of this document.

We are minded to grant the permit for Crown Stables Poultry Unit operated by Crown Waste Management Limited.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that a high level of protection for the environment and human health is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Details of the proposal
- Environmental issues and their control
- Annex 1 – A) consultation on the application
  B) consultation on the draft decision

Details of the proposal

The installation comprises a single broiler unit providing capacity for 40,001 broiler places (broilers are chickens bred specifically for meat production).

This unit meets the threshold for requiring an environmental permit under listed activity: Section 6.9 A(1)(a)(i) Rearing of poultry intensively in an installation with more than 40,000 places.

The Application has been assessed in line with our guidance: EPR 6.09 Sector Guidance Note – How to comply with your environmental permit for intensive farming (EPR 6.09). The techniques proposed by the Applicant meet the requirements set out in this guidance and are considered to be the best available techniques (BAT) for a broiler unit of this size. It is a requirement of the permit that the poultry unit is operated in line with this guidance.

Day old chicks are brought into the unit and fed and watered until they reach around 37 days of age, at which point they are removed from the site and taken to a meat processing facility. There is a 7 day cleaning period plus the stocking and destocking time resulting in an average cycle length of 48 days.

The chicks are bedded on wood shavings to a minimum depth of 2cm, fresh bedding is added throughout the cycle. Non-leaking drinking systems will be used so that the litter does not get too wet, and reducing the likelihood of run off to the underground reception pit.

The clean out process takes place generally within 24 hours of destocking (maximum 48 hours), and comprises removing the manure / bedding from the building, steam cleaning and washing down the internal surfaces and applying disinfectant. Once the unit is fully dry, new bedding will be added and the building restocked with chicks.
Building ventilation will be reduced to a minimum during the clean out process to contain dust and particulate within the confines of the building.
All manure is exported from the installation on covered trucks for use in an energy recovery facility. No manure will be stored on site outside of the building.

Water from the wash out of poultry houses, and condensate from the heat exchanger, will drain to a covered underground reception pit to await collection and export off site by road tanker.

There will be no emissions to sewer.

The broiler unit is ventilated by 18 high speed roof fans with emission points 7 metres above ground level and an efflux speed greater than 7 metres per second. In addition to the fans, windows on the sides of the building allow for natural ventilation.

Other associated infrastructure includes two feed silos, a heat exchanger to regulate the temperature in the building, the underground reception pit located within the concrete yard and an attenuation pond for collection of uncontaminated rainwater from the yard within the installation boundary.

Roof water and yard rain water is directed via the surface water drainage system into an attenuation pond before being released under controlled conditions to an adjacent watercourse that runs towards the River Anker. All water released from the pond will be uncontaminated, if there is a likelihood of contaminated water getting into the pond, the outlet from the pond to the watercourse can be closed by means of a hydraulic brake. The pond will then be emptied with the contents being tankered away for appropriate disposal. The capacity of the pond is 145 m^3.

The dirty water drainage system collects wash down water from the broiler unit, directing it to the underground reception pit. The storage capacity of the pit is 31.6m^3. The pit will be emptied at the end of each cleaning operation. Water levels within the pit will be monitored at all times, and it will be emptied more frequently if necessary.

The broiler feed is stored in sealed feed bins, filled via a closed delivery system from a truck. Feed will be delivered weekly, during daylight hours. The feed will be supplied by a UKASTA accredited feed mill. UKASTA is the UK Agricultural Supply Trade Association (now operating as Agricultural Industries Confederation (AIC)).

Carcasses are collected once a week and stored in a secure container on site prior to removal by a licensed waste disposal contractor.

The operator has provided a site plan which we consider is satisfactory, showing the extent of the site of the facility. The plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.

Environmental issues and their control

Receptors
There are a number of sensitive receptors within 400 metres of the installation and therefore a noise management plan and an odour management plan have been prepared in accordance with EPR 6.09 and Annex B of H1 guidance which forms part of the Environment Agency risk assessment framework. Annex B is the technical annex relating to risks associated with intensive farming.

The receptors situated within 400m are as follows:

1. Residences and equestrian centre approximately 40m to the north of the installation boundary at the top of the entrance road; approximately 100m from the broiler house. (NGR: SP 32441 96158).

2. A residence / farm approximately 110m west of the installation boundary (NGR: SP 32215 96003).

3. Residences on the outskirts of Mancetter village, approximately 280m north west of the installation boundary (NGR: SP 32265 96356).

4. A residence / farm approximately 370m east of the installation boundary (NGR: SP 32790 95863).

Note: where documents such as the Odour Management Plan, Risk Assessment, Technical Standards are referred to below; operating in accordance with these is a requirement of the permit. We have specified that the Operator must operate the permit in accordance with process and procedures described in the application, including all additional information received during the determination process.

These documents are specified in the Operating Techniques table in the permit (Table S1.2).

1. Air Emissions

Human Health

The Applicant is aware of the potential impacts on human health from air emissions from the broiler unit, (dust / bioaerosols, ammonia) and the risk of disease from birds; and has identified measures to prevent or minimise these emissions, as set out in their risk assessment and technical standards document, and as described in further detail below.

- Dust / bioaerosols

The housekeeping practices employed on site to protect the staff and as part of the disease control strategy, will also benefit the wider community in that minimising dust around the unit will reduce the potential for dust / bioaerosol emissions to disperse into the atmosphere.

These practices include feed delivered premixed and kept in covered silos; clearing of dust to prevent build up on buildings and surfaces; use of appropriate bedding and correct storage of fresh bedding supplies. In addition as part of the biosecurity (disease management) measures no manure will be stored on site.

The best available evidence in relation to bioaerosol emissions from an intensive farm is that they return to existing levels, i.e. usual background levels, at about 100m from the source. Most of the receptors are much further away than this, the nearest receptor being the equestrian centre, at about 100m from the actual broiler unit. Therefore at this distance it is considered that there will be no discernible impact on local residents or receptors.

- Ammonia

The Health Protection Agency (now Public Health England) has stated (Position Statement, Intensive Farming 2006) that it is unlikely that ammonia emissions from a well run and regulated farm would be sufficient to cause ill health. Whilst the potential adverse effects of ammonia include respiratory irritation and may also give rise to odour complaints, levels of ammonia in ambient air will decrease rapidly with distance from a source.

The Operators' measures to manage particulate emissions which will minimise ammonia emissions from the site are included in their Environmental Risk Assessment and Odour Management Plan. It is a requirement of the permit that the site is operated in accordance with the OMP.
We have assessed these measures and have determined they represent best available techniques for this activity. The measures do include operating ventilation systems to achieve appropriate conditions for the age and weight of the birds and controlling litter moisture levels. This would mean not running the ventilation systems when not required (i.e. during periods of low temperatures), and ensuring the litter does not become too dry in order to minimise the potential for emissions.

Other measures include the feed formulation designed to match broiler requirements and minimise the amount of manure (ammonia) produced; maintaining sufficient wood shavings as bedding to bind nitrogen; regular monitoring of broiler house and maintenance of equipment; manure removal to take place quickly, and transported in covered trucks.

Overall, emissions will be prevented, and where this is not practicable, minimised; and will not cause any significant harm to human health.

Odour

The poultry unit will comprise high speed, ridge-mounted chimney fans for ventilation and to disperse odour (as well as dust / bioaerosols and ammonia – see sections above).

An Odour Management Plan (OMP) has been submitted with this application. The OMP consists of:

- An initial OMP submission and H1 risk assessment Table 1.
- Duly making response with updated OMP (April 2015).
- An updated version dated July 2015.

The OMP covers feed selection, feed storage and containment, ventilation design, wash down and manure management and contingency measures.

The Operator acknowledges that cleaning out the manure from a broiler unit is a potential source of odour; vehicles will be loaded at a low level immediately outside the doors at the south east end of the building, and sheeted before leaving the site to minimise dust and odour emissions.
Broiler litter has the potential to produce sulphurous compounds. The same management techniques as for minimising production and emission of ammonia (refer section above) are applied to minimise sulphurous compounds forming and producing odour; as described in the OMP.

Given the nature of the proposed activity there is the potential for odour pollution from the installation. However the risk of odour pollution beyond the installation boundary is considered insignificant provided operations are undertaken in accordance with the OMP as submitted (July 2015). This is a requirement of the permit and will prevent and where that is not practicable minimise odorous emissions.

Feed and diet
The broiler feed is formulated to match each stage of growth and development to reduce wastage, (3 different feed formulations). The feed comprises mainly grain including varying levels of protein and phosphorous nutrients. The phosphorous content is reduced over the production cycle in line with industry practice. This satisfies the requirements of EPR 6.09 which states that the broiler diet should minimise the excretion of nitrogen and phosphorous.
The feed will be supplied by a UKASTA accredited feed mill; it will comprise of cereals, seeds, soya beans, pulses, along with protein supplements and vitamins and other additives to increase the feed conversion ratio.

Maintenance

Monthly checks will be carried out on the ventilation system in accordance with the manufacturer's instructions to ensure efficient operation.

Ammonia emissions - impact on habitats

We assess the potential impact of emissions on conservation sites and species which are protected in law by legislation (e.g. Habitats Directive, Environment Act). We cannot permit something that will result in significant pollution to sites, habitats or species.

The Habitats Directive provides the highest level of protection for Special Areas of Conservation (SACs) and Special Protected Areas (SPAs), domestic legislation provides a lower but still important level of protection for Sites of Special Scientific Interest (SSSIs). Finally the Environment Act provides more generalised protection for flora and fauna rather than for specifically named conservation designations. It is under the Environment Act that we assess other sites (such as Local Wildlife Sites - LWS) which offers levels of protection proportionate with other European and national legislation. However, it should not be assumed that because levels of protection are less stringent for these other sites, that they are not of considerable importance. Local sites link and support EU and national nature conservation sites together and hence help to maintain the UK's biodiversity resilience.

The emissions from Intensive Farming installations that could impact on a conservation site are ammonia in the form of an atmospheric gas, or acid or nitrogen in the form deposition onto the ground.

We use a Critical Level (CLe) as a measure of the gaseous concentration of pollutants (ammonia) in the atmosphere; above this level direct adverse effects on the receptor (habitat / species) may occur.

We use a Critical Load (CLo) as a measure of the quantity of pollutant (acid or nitrogen) deposited from air to ground; exposure of the receptor to concentrations below this CLo will not experience significant harmful effects.

This approach to assessing emissions from an Intensive Farming Installation such as this poultry unit, are supported by data from the Air Pollution Information System (www.apis.ac.uk) and has been agreed with Natural England.

Critical levels and loads are set to protect the most vulnerable habitat types. Thresholds change in accordance with the levels of protection afforded by the legislation (see above). Therefore the thresholds for SACs and SSSIs are more stringent than those for other nature conservation sites; e.g. LWS and Ancient Woodlands (AW).

There is 1 SAC located within 10 kilometres of the installation. There are 4 SSSIs located within 5 km of the installation. There are also 16 LWS' and AWs, within 2 km of the installation.

Ammonia assessment – SAC

The following trigger threshold is applied for the assessment of SACs (in agreement with Natural England):

- where the process contribution (PC), i.e. the amount of potential pollutant emitted, is below 4% of the relevant critical level (CLe) or critical load (CLo) then the farm can be permitted with no further assessment.

Screening using the ammonia screening tool (version 4.3) has determined that the PC on the SAC for ammonia from the proposed site is under the 4% significance threshold and can be screened out as having no likely significant effect. Results shown in Table 1 below.

Table 1 – Ammonia emissions

Site	Critical level ammonia µg/m^3	Predicted PC µg/m^3	PC % of Critical level
Ensor's Pool (habitat for crayfish)	1	0.07	0.7

A precautionary approach is taken, choosing the lowest critical level of 1 µg/m^3. Where the precautionary level of 1 µg/m^3 is used, and the PC is assessed to be less than the 4% threshold, it is not necessary to further consider nitrogen deposition or acid deposition, as the lowest critical level represents the most sensitive habitat, no other pollutant would have a greater impact. We are satisfied that there will be no likely significant effect on the interest features of the SAC.

Ammonia assessment – SSSIs

The following trigger threshold has been applied for assessment of SSSIs (in agreement with Natural England):

- where the process contribution (PC) is below 20% of the relevant critical level (CLe) or critical load (CLo) then the farm can be permitted with no further assessment.

Screening using the ammonia screening tool (version 4.3) has indicated that the PCs for the SSSIs in the table below are predicted to be less than 20% of the critical level for ammonia therefore it is possible to conclude no damage. Results are given in Table 2 below.

Table 2 – Ammonia emissions

Name of SSSI	Ammonia CLe ($\mu g/m^3$)	PC ($\mu g/m^3$)	PC as % of Critical level
Bentley Park Wood (broad leaved, mixed & yew woodland)	1	0.028	2.8
Illing's Trenches (geological interest)	1	0.051	5.1
Boon's Quarry (geological interest)	1	0.069	6.9
Woodlands Quarry (geological interest)	1	0.084	8.4

A precautionary approach is taken, choosing the lowest critical level of 1 $\mu g/m^3$. Where the precautionary level of 1 $\mu g/m^3$ is used, and the process contribution is assessed to be less than the 20% threshold it is not necessary to further consider nitrogen deposition or acid deposition.
In these cases the 1 $\mu g/m^3$ level used has not been confirmed, but as it is the strictest level that could apply its use is precautionary. The actual level could be 3 $\mu g/m^3$ depending on the habitat being protected, we have applied the lower limit. We are satisfied that the proposed installation would not damage the special features of any of the SSSIs.

Ammonia assessment - LWS/AW

There are 16 Local Wildlife Sites (LWS)/Ancient Woodland (AW) within 2 km of Crown Stables. The following trigger thresholds have been applied for the assessment of these sites (in agreement with Natural England):

- where the PC is <100% of the relevant critical level or load, then the farm can be permitted with no further assessment.

For the following sites this farm has been screened out as described above, based on the results of the ammonia screening tool (version 4.3).

Screening using ammonia screening tool (version 4.3) has indicated that emissions from Crown Stables will only have a potential impact on sites with a critical level of 1 $\mu g/m^3$ if they are within 250 metres of the emission source; beyond this distance, the PC at conservation sites is less than 1 $\mu g/m^3$.
In this case all LWS/AW are significantly beyond this distance (see Table 3) and so the PC will be significantly below 1 $\mu g/m^3$ for each site.

Table 3 – distance from source

Site	Distance (m)
Quarries Wood LWS	1,654
River Anker Meadows LWS	1,737
Witherley Hedgerow LWS	1,276
Hedgerow North of Witherley LWS	1,650

Mythe Lane Hedgerow LWS	2,088
Drayton Lane Hedgerow LWS	1,372
Chapel Lane Hedgerow LWS	1,628
Chapel Lane Hedgerow 2 LWS	1,618
Kennel Farm Hedgerow and Tree LWS	1,622
Atterton Road Hedgerow LWS	1,979
Rawn Hill LWS	1,240
Purley & Mancetter Quarries LWS	1,165
Unknown AW	1,477
Quarries Wood South AW	1,161
Hartshill Hayes AW	1,138
Upper Coal Spinney AW	1,783

The PC at these sites has been screened as insignificant. It is possible to conclude no significant pollution will occur at these sites and no further assessment is required.

In summary we can conclude that the installation would not cause significant pollution at any of these sites as in each case the predicted PC is less than the relevant critical level.

2. Noise

We have assessed the Noise Management Plan (NMP) and associated H1 Assessment of noise risk; the Applicant has followed the guidance set out in EPR 6.09 and we are satisfied that all sources and receptors have been identified, and the proposed mitigation measures will minimise the risk of noise pollution / nuisance.

The NMP does state that deliveries will be made during daylight hours (06:00 – 19:00); however our interpretation of daylight hours is 07:00 – 23:00 as detailed in EPR 6.09. The Applicant has acknowledged that where they refer to 'daylight' hours in their operating techniques that the Environment Agency will interpret that to mean starting no earlier than 07:00, and this has been incorporated into the permit.

The noise risk assessment confirms that deliveries of feed and fuel will be made during daylight hours; and that animal movements will take place during daylight hours.

The Applicant also submitted a 'Plant noise and vibration assessment' intended to provide information relevant to the local planning authority in support of the planning application for the broiler unit. The assessment mostly refers to National Planning Practice Guidance applicable to location planning, rather than the operational element of the activity under British Standard BS4142.

In this Plant noise and vibration assessment, the noise from the heat exchanger is identified as the having the highest Sound Pressure Level, for which mitigation has been provided by locating it at the furthest point away from receptors, and by the construction of an acoustic barrier around it.

Although this assessment has not been written for the environmental permit application, does not use the latest standard BS4142 and did not include the full

modelling files; we have considered its contents as part of the determination and are satisfied that its conclusions are consistent with the NMP and do not alter our decision.

Based on the information submitted regarding noise, we are satisfied that the plan meets our requirements in respect of noise management and mitigation and that noise will be prevented and where that is not practicable minimised.

3. Water and land pollution, potential to contribute to local flooding

The hard standing areas around the building will be constructed as an impermeable surface which is kerbed to prevent run off to the surrounding area. This area is connected to surface water drainage system which collects uncontaminated rain water from roofs and clean surfaces and directs this to the attenuation pond. Visual inspections of the pond will take place to confirm it contains no contamination before any water is discharged to adjacent watercourse.
If contamination is identified in the pond, the pond will be isolated and the contaminated water removed by tanker for offsite disposal.

Areas that may contain contamination such as the manure loading area, and building wash down will drain to the underground reception pit which is emptied after each cleaning process or earlier as required.

During heavy rainfall events where there is potential for flooding in the surrounding local area the surface water drains will be blocked with sandbags and barrier boards to prevent discharge of excess water into the attenuation pond. Water would be contained within the yard for pumping out for disposal off site. There will be no need to release water through the pond during flooding events, and therefore it would not increase the risk of flooding off site.

The capacity of the pond is 145 m^3, if water reaches this level, providing it is uncontaminated, it will be released in a controlled manner to the watercourse preventing sudden surge in flow.

The site is not within a Source Protection Zone and we do not consider that there will be any significant pollution of either ground or surface water or harm to human health.

Change to site drainage
The Applicant has updated their proposals for site drainage based on the pre-operational requirement (PO 1) that was set out in the draft permit. We were satisfied with the original plans subject to some further detail, however these new proposals represent an improvement and have subsequently been agreed.
The attenuation pond (capacity 145m^3) has been moved to the west of the access track, further away from the watercourse, a hydraulic brake will be installed to prevent water from the attenuation pond draining to the watercourse.
The underground reception pit (capacity 31.6m^3) will be relocated nearer to the pond and will collect dirty water from the washout process and manure loading area via a dedicated drain. A diverter valve will ensure contaminated surface water run-off is directed to the underground reception pit.

The attenuation pond will collect only clean surface water run-off; the water then drains via a sealed pipe to the watercourse.

The previous location for the attenuation pond will be used as a surface water flood storage compensation area, providing an additional 250m^3 of storage, and further minimising the risk of flooding offsite during periods of heavy rainfall.

Groundwater and soil monitoring

As a result of the requirements of the Industrial Emissions Directive, all permits are now required to contain a condition requiring periodic monitoring of soil and groundwater. However, the Environment Agency's H5 Guidance states that it is only necessary for the operator to take baseline samples of soil or groundwater and measure levels of contamination where there is evidence that there is, or could be existing contamination and the same contaminants could be released by the proposed activities.

The site condition report (SCR) for Crown Stables (dated January 2015) demonstrates that there are no existing hazards or likely pathways to land or groundwater and no historic contamination on site that may present a hazard from the same contaminants. Therefore, on the basis of the risk assessment presented in the SCR, we accept that they have not needed to provide base line reference data for the soil and groundwater at the site at this stage.

The decision was taken in accordance with our guidance on site condition reports (H5) and baseline reporting under IED.

4. Operator competence

Operator competence is determined on whether the Applicant can demonstrate technical competence, has any relevant convictions and is deemed to be financially competent, as stated in our Guidance RGN 5 'Operator Competence'.
Operation of an intensive farming installation is not a relevant waste activity and as such does not require compliance with an approved scheme. Instead the Operator demonstrates by way of their management system, (condition 1.1 in permit) that staff training and development requirements are met, along with provision for keeping up-to-date with technical and legislative changes.
We consider operator competence in this context throughout the life of the permit.

An Applicant's compliance record includes a review of relevant convictions and can take into account any known breaches of other regulatory regimes. The provisions of the Rehabilitation of Offenders Act 1974, require convictions of individuals to be considered spent after a prescribed period. In this case relevant convictions were identified for the Operator; but were treated as if spent as they would be for an individual.

Financial competence is initially based on whether the applicant has any current or past insolvency and bankruptcy proceedings. We are not aware of any such proceedings against this Applicant.
A credit check has been carried out, and we have no reason to consider that the Operator would not be financially viable to operate and manage the poultry unit appropriately to meet the requirements of the permit.

The operator competence checks have been carried out in line with our guidance (RGN 5) and we are satisfied that the operator meets the requirements.

The Operator is required to operate the unit in accordance with an Environmental Management System (EMS) under condition 1.1 of the permit. The Operator commits to the operating techniques as described in the application and as incorporated into the permit in condition 2.3.1 (table S1.2), any deviation from either of these would be a breach of the permit, and action would be taken in accordance with our usual approach to enforcement.

We are satisfied that the Applicant (now the Operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.

5. Accident Management

An accident management plan has been submitted, which includes details of the site infrastructure along with the location and an inventory of all tanks and stores. It also includes a plan of the drainage layout, and details of fire fighting equipment, location of spill kits and diverter valves.

The emergency procedures are set out, giving priority to livestock welfare and avoiding environmental pollution. Procedures are written for different accident scenarios: overflow of drainage system, power outage, fire, disease outbreak, and flood.
The proposal now includes provision of a generator on site in case of power failure.

We are satisfied that the procedures are suitable to prevent or minimise environmental pollution in the event of an accident.

6. Pests

A pest management plan has been submitted outlining the steps for monitoring fly activity, and for managing fly infestations. Fly screens will be fitted to doors and windows where feasible to do so, and so as not to impede ventilation.
Carcasses are removed once a week and stored in sealed containers awaiting removal.
Any manure found to contain flies or maggots will be treated to eradicate them.

Annex 1: Consultation and web publicising responses

Consultation on the Application

The Application has been consulted upon in accordance with the Environment Agency's Public Participation Statement. The way in which this has been carried out, along with the results of our consultation and how we have taken consultation responses into account in reaching our draft decision is summarised in this Annex. Copies of all consultation responses have been placed on the Environment Agency public register (unless a request has been made for it to remain confidential).

The Application was advertised on the Environment Agency website from 13/05/2015 – 25/06/2015.

The following statutory and non-statutory bodies were consulted:

North Warwickshire Local Authority – Environmental Protection;
Health & Safety Executive.

1) Consultation Responses from Statutory and Non-Statutory Bodies

Response received from
North Warwickshire Local Authority – Environmental Protection
Brief summary of issues raised
Agree with the findings of the noise assessment that this proposal should not have any adverse impact on nearby properties. Concerns regarding the closeness of the proposed unit to residential properties; closer than the recommended separation distances for this type of agricultural operation. This site may affect the amenity of nearby dwellings.
Summary of actions taken or show how this has been covered
The Noise Management Plan submitted demonstrates that suitable control measures and abatement techniques will be in place to minimise noise. Condition 3.4 of the permit relates to noise. The recommended separation distances relate to Planning guidance and will be considered as part of the planning application. We are satisfied that there will not be any significant pollution of the environment or harm to human health at any receptor.

2) Consultation Responses from Members of the Public and Community Organisations / County / Parish / District Councillors

The consultation responses received were wide ranging and a number of the issues raised were outside the Environment Agency's remit in reaching its permitting decisions. Specifically questions were raised which fall within the jurisdiction of the planning system, both on the development of planning policy and the grant of planning permission.

Guidance on the interaction between planning and pollution control is given in the National Planning Policy Framework. It says that the planning and pollution control systems are separate but complementary. We are only able to take into account those issues, which fall within the scope of the Environmental Permitting Regulations. Planning permission will still be required before the proposals can go ahead.

We have received 53 responses from members of the public and community organisations representing local residents, and from County and District Councillors.

Comments:

Some of the comments received referred to the previously withdrawn planning application and contained issues that are outside the Environment Agency's remit as described above.

These issues raised are: location of the site, whether the land use is appropriate, site access, traffic issues, highways suitability, employment opportunities, visual impact of buildings and from lighting, impact on tourism, impact on house prices, proximity to railway, request for a public debate, animal welfare issues.

Issues that the Environment Agency can consider:

1) Human health impacts from: air pollution (emissions from the high velocity fans, including bioaerosols / dust / particulates, disease in birds).

How this has been considered: (see key issues section on human health)
The operator will use high velocity roof mounted fans which effectively disperse emissions into the atmosphere reducing their concentration and impact, and is considered to be BAT under EPR6.09. Emissions from the 7m high fan will rise into the atmosphere and disperse quickly, with the amount of bioaerosols in the air returning to background levels about 100m from the source.

The litter within the building will be maintained at an appropriate level of moisture, not too wet that run off is generated, but not too dry that excess dust and particulate are produced.

Good housekeeping is key, and the operator will be required to keep areas clean and dust free. There will be regular inspections and a cleaning regime to remove dust.

The site will adhere to the detailed biosecurity procedures to prevent disease occurring in the birds as stated in the Environmental Risk Assessment. These procedures are based around maintaining a clean, dust free site. The operator would notify Animal Health of an outbreak of serious disease, and implement procedures as agreed with them, and in conjunction with the Environment Agency if necessary.

In addition, feed is not milled or mixed on site and the feed management procedures in place should ensure that particulate emissions will be minimised from this source.

We are satisfied that the appropriate measures will be taken to minimise the production and emissions of dust / bioaerosols / particulates to the local area and that there will be no significant impact on the health of the local population as a whole.

2) Water pollution – River Anker & local watercourses
How this has been considered: (See the key issues section on Water)
a) We are satisfied that appropriate prevention and control measures will in place to control the flow of water and prevent pollution entering local watercourses and the River Anker.
The Applicant's accident management plan outlines the procedures they would take in the event of a spillage or severe weather events to prevent pollution or excess water reaching the river. See updated section on site drainage.

Severn Trent Water confirm that the drinking water supply to this area is from a surface water supply treated at works in Warwickshire. There will be no pathway for contamination of the local water supply from this activity.

b) Specific concerns were raised about the potential for wash down of the unit to clear diseased or dead birds or other waste (carcasses, feathers, internal organs) and this will collect and lie in the attenuation pond. This would then rot and soak into soil & water course over time, impacting on groundwater.
How this has been considered:
All carcasses will be collected from within the building and stored in sealed containers awaiting removal off site.
Wash down water and debris will not enter the attenuation pond which is for clean roof and yard water collection only. During clean out of the shed, all wash down water will be directed to the reception pit for later collection and removal off site.

3) Odour
How this has been considered: (See key issues section on Odour)
The odour management plan is incorporated into the permit and the operator must adhere to the control measures stated within it. For example, covering vehicles before leaving the site, keeping used bedding contained, keeping doors open for minimum amount of time during cleaning out.

There are fears that there could be a cumulative effect from a local rendering plant located just over 1 km to the south east of this proposed poultry unit.
If there are odour issues from either site, the wind direction at the time could be used to determine where the odour originates, and the source investigated accordingly. Due to locations of the sites and the wind direction, the likelihood of a cumulative impact is low.

Comments have been raised about other sites in the locality which are considered to be well run, but can still cause odour issues. And that if those sites cannot control odours then how can this operator?
How this has been considered:
The regulation of other sites is outside this determination, and whilst we accept that intensive farming has the potential to cause odour we are satisfied that the odour impacts from well run facilities can be managed. If this site operates in accordance with the permit, odour will not be an issue.

4) Noise
How this has been considered: (See key issues section on Noise)
We consider that the noise management plan contains the necessary measures to minimise the impact of noise outside the installation boundary. This is supported by comments from Environmental Health, North Warwickshire Borough Council who agree the proposals should not have any adverse (noise) impact on nearby properties.

5) Proximity to local residents
How this has been considered:
There is no minimum distance criteria against which an environmental permit cannot be granted. The Operator has to satisfy us that all pollution control and

mitigation measures are in place so as not to cause pollution outside of the site boundary. For intensive farms where there are receptors within 400m of the site boundary a site specific odour management plan, and site specific noise management plan have to be submitted by the Applicant and approved by the Environment Agency before a permit can be granted.
The Applicant has submitted these management plans which have been subsequently approved.

6) Operator Competence, previous track record in waste management industry
How this has been considered: (See key issues section on Operator Competence)
We take relevant convictions of an Applicant into account and any previous history of operating permitted sites. In this instance and in accordance with the legislation and our guidance, any relevant convictions held by this applicant are considered to be spent, having passed the appropriate timescale, and therefore are no longer 'relevant' for the purposes of this permit application. The Operator does manage a waste management site and is operating under the terms of the permit. The operator would have to employ staff who are trained and experienced in poultry rearing to operate this site in accordance with the requirements of the permit.

7) Timings for clean down and removal of birds
How this has been considered:
The Operator has stated that they will operate during daylight hours, being between 07:00 and 23:00 as outlined in EPR6.09. This is incorporated into table S1.2 as referenced in condition 2.3.1 and becomes a requirement of the permit. Any activity outside of these hours will then be a breach of the permit.
Animal movements are stated to take place during daylight hours, see Noise section of key issues.

8) Welfare of birds if there is an interruption in the electricity supply.
How this has been considered:
The operator has changed their original proposal, and will now have a generator permanently available on site to provide back up power. The location of the generator and associated equipment have been identified on an updated site plan. An acoustic barrier will be installed around the generator to minimise noise emissions, should the generator be operational.

9) Lack of trust in regulators based on experiences from different local operations.
How this has been considered:
Each permitted site is dealt with by a local Environment Officer who works with the Operator to address any environmental issues that arise. If an incident has taken

place, a permit condition has not been met, or legislation is not complied with then the Officer will normally try to resolve the issues and get the best outcome by providing advice and guidance to the Operator. An alternative option is to use one or more of the various enforcement powers at our disposal to take enforcement action; powers which include prosecution, civil sanctions, or revocation of a permit.
If the breach of the permit is significant, the EA can go straight to the prosecution or revocation stage.
The nature of the enforcement action is site specific, depends on the type of incident and the preparedness of the operator to address the issues. One site cannot be compared to another site in this regard.
The nearby plant is an old facility predating current legislation and guidance; we recognise that it is more difficult to apply the latest pollution control measures to an old plant.
This poultry unit will be a purpose built plant constructed in line with the most recent legislation, current guidance and Best Available Techniques. The potential sources of odour and noise pollution have already been identified and measures will be put in place to minimise pollution beyond the installation boundary. The operation of a poultry unit is well understood, and it is unlikely that there would be any source of pollution that has not already been identified and mitigated against.
This permit would not be granted if we did not consider that the operator could comply with the permit conditions and operate the site without causing pollution.

10) Localised flooding, heavy rain event and attenuation pond capacity
How this has been considered: (See key issues section on Water and land pollution)
Several comments have been received stating that this area can flood, although it is not identified as an EA designated flood zone. Reports suggest that the river water can flow across the road and links back to the River Anker via local watercourses.
The capacity of the reception pit is 31.6 m^3, level monitors and visual checks will alert the operator when it reaches capacity and it will be emptied as necessary.
The capacity of the attenuation pond is 145 m^3, with releases to the watercourse controlled by hydraulic brake. Kerbing around the hardstanding will direct surface water to the drainage system containing it within the installation boundary.

The Applicant has identified the risks of heavy rainfall and flooding and has covered this in their Accident Management Plan; the techniques described in the Key issues section will be used to control water levels during heavy rainfall or flooding.
See updated section on site drainage.

11) Impact on habitats, location of Great Crested Newts
How this has been considered: (See key issues section on Habitats)
The potential impacts on European Statutory sites (SSSI / SAC) have been considered and determined to be not significant, nor likely to cause damage.
If great crested newts are shown to be present, the Planning Authority will take this into consideration during the assessment of the planning application in consultation with the Environment Agency. We have no data to show that there are great crested newts at this location. The site is currently described as for equine use, green field, with no water features within the site boundary. If there were found to be great

crested newts on the site the Applicant would have to apply for a licence to remove them prior to commencing any works.

12) outdoor storage of waste
How this has been considered:
There will be no outdoor storage of waste. We are satisfied that the operator will manage the transport of waste from the site so that outside storage will not be necessary.

13) Flies / Pests
How this has been considered: (see key issues section on Pests)
The fly (pest) management plan has detailed the control measures to minimise nuisance from flies. We are satisfied that with good housekeeping practices and by following the measures described in the plan, that fly nuisance will be minimised.

14) Future expansion of the site
How this has been considered:
This application has been assessed on its own merits based on the information provided, and on the basis that 40,001 broilers can be housed and managed appropriately. We cannot determine this application in anticipation of what the Operator may choose to do in the future with regards to expanding the operation and increasing the number of broiler places.
Any intention to increase the number of broiler places will require a variation to the permit. Any variation application would be considered on its own merits and determined in accordance with our usual procedures.
The Operator would have to demonstrate that they were technically and financially competent to manage a larger plant and comply with the permit conditions.

15) Impact on local heritage sites
How this has been considered:
Concerns have been raised on the impact of the broiler unit on local heritage sites, i.e. the Roman settlement and camps to the north of the unit (300m). There will be no direct pathway for pollution from the unit to these heritage sites. Section 7 of the Environment Act 1995 (pursuit of conservation interests), requires us to consider whether we should impose any additional or different requirements for the heritage site, but we are satisfied that the measures proposed for protecting the environment and human health will also ensure there is no adverse effect on the heritage site.

16) The broiler housing techniques
How this has been considered:
Comments were submitted in relation to;

i) the fan ventilation system, and referred to a ventilation tunnel system as an alternative.
ii) the flooring system being of raised netting in favour of deep bed.

Housing design and standards for intensive farms are set out in the Reference document on Best Available Techniques (BREF) published by the European IPPC Bureau. This is reproduced in our guidance EPR 6.09, Appendix 3, section A3.2 for broilers.

The options are either a naturally ventilated house with fully littered floor, or a well-insulated fan ventilated house with a fully littered floor (both options include non-leaking drinking systems). The Operator has opted for the well-insulated fan ventilated house with a fully litter floor, which meets the measures included in the BREF. Raised flooring is a deep litter system that can be used for egg layers, but neither tunnel ventilation nor raised net flooring are referred to in the BREF for broilers, and we are satisfied that the most appropriate design of housing ventilation and flooring have been chosen.

B) Consultation on the Draft Decision

This section reports on consultation on our draft decision carried out between 29/09/2015 and 26/10/2015.

A total of 23 additional responses were received from individual members of the public and from Warwickshire County Council.

In some cases the issues raised in the consultation were the same as those raised previously and already reported in section A of this Annex. Where this is the case, the Environment Agency response provided in section A of this Annex has not necessarily been repeated and reference should therefore be made to section A in addition to any response below.
Specific issues raised again and the relevant point in Section A:
1) Human health
2) Water pollution and 10) localised flooding
4) Noise
5) Proximity to residents
6) Operator competence
7) Timings of operations
9) Regulation
11) Great Crested Newts
12) Manure storage
13) Pests
15) Local heritage

The exception to this relates to further odour concerns from members of the public. We have sought to add to the original text to provide greater clarity below.

Also some of the consultation responses received were on matters which are outside the scope of the Environment Agency's powers under the Environmental Permitting Regulations. Our position on these matters is as described previously.

Response received from
Warwickshire County Council (WCC) 30.10.15
Brief summary of issues raised
WCC submitted a report: Bird Broiler Unit Impact Assessment exploring the potential health impacts a broiler unit may have on local residents within North Warwickshire Borough. The report includes a site description, the planning policy framework, project description and public health profile; the assessment describing the health effects; and conclusions. The conclusions are that there will be specific residences and businesses which may be impacted by the proposed installation. The main impact that will need to be minimised will be in relation to an increase in air pollution. Also that the scheme has the potential to contribute towards exacerbating health conditions and health inequalities for the local community if poorly managed,

or mitigated, or if all relevant public health bodies haven't been consulted. Point 2.1.1 of the report stated that Public Health Warwickshire is not aware that Public Health England had been consulted on the proposed installation. Point 2.1.17 of the report states that a manure management plan should be produced. Two recommendations are made; to ensure potential health impacts are minimised, the proposed installation complies with any conditions set by the Environment Agency. to minimise potential health impacts to poultry workers, health assessments are undertaken and regularly reviewed.
Summary of actions taken or show how this has been covered
As part of our Working Together agreement with Public Health England and the Director of Public Health not all installation applications needed to be consulted on at the time this application was received. This intensive farming application did not require consultation with these bodies as it did not meet any of the criteria, for example; it is not a large combustion plant, incinerator, landfill, compost site, a COMAH site or relating to onshore oil and gas extraction. A manure management plan is not required where manure is collected at the end of each cycle and removed off site. A manure management plan is only required when it is intended to be stored to be spread on the site. The conditions of the permit require the operator to protect people and the environment. We are satisfied with the measures the Operator has chosen to use to meet these objectives, thereby minimising potential health impacts. The permit requires the Operator to operate the facility in accordance with approved odour and noise management plans, and management system that prevents or minimises the potential for pollution outside of the site boundary. Health impacts on poultry workers are a matter for the Health & Safety Executive.

Further comments were raised following the consultation on the issue of odour; some of the comments were the same as previously raised so neither the issue nor the response has been repeated here (see point 3 in section A). New concerns were raised about the odour modelling undertaken by the applicant, and we provide the response below for clarification.

The Odour Management Plan (OMP) was reviewed in line with our guidance for Intensive Farming applications and H1 risk assessment. The OMP was updated during the determination and we are satisfied with the measures the OMP proposes for managing odour. Due to the subjective nature of odour detection we consider the

use of an effective OMP as a more useful tool to manage odour at intensive farming installations.
Although the Applicant carried out odour modelling and provided a summary report, the modelling data was not provided as part of the application and has not been audited by us.

The OMP has been assessed against the Poultry Industry Good Practice Checklist covering the appropriate measures considered suitable for controlling odour; the OMP also contains suitable complaints procedures and contingency measures.

The consultation response refers to the exposure benchmark limits of odour units (OU) that apply to different activities and provide a measure of the likely impact of odour at locations around the site, usually shown as odour unit contours on a map.

In our guidance H4 Odour Management, Appendix 3; odour from Intensive Farming is deemed to be moderately offensive with a benchmark limit of 3 OU, the consultation response stated that this limit should be reduced by 0.5 OU to account for the sensitivity of local population to existing odours.
Therefore it would be reasonable to use a reduced benchmark limit of 2.5 OU in a modelling scenario.
However the results of any modelling can only be indicative and there can be uncertainties with the modelled results when receptors are close. A robust OMP is more effective for implementing measures that will minimise the impact of odour beyond the site boundary.
The OMP will be reviewed by the Operator every year or after any complaint or changes to the operations or infrastructure.
Condition 3.3.1 of the permit controls odour.

A comment was received to the effect that the modelling of effluent gases is based upon ammonia rather than hydrogen sulphide. An odour modelling assessment does not refer to a particular gas; the model measures general odour concentrations to assess the likely odour impact.

Section 1.18 of the OMP makes reference to the screening carried out on ammonia emissions; this is a pre-application screening process that each proposed poultry unit has to undertake to assess the likely impact of ammonia emission on habitats, and is described fully in the section above: Ammonia assessment – impacts on Habitats.
It is not related to the assessment of potential odour impacts, and has no bearing on the odour assessment carried out.

10. The results of the modelling run for an installation of 90,000 birds are shown in Figure 1:

Figure 1: An Odour Model for a Broiler Unit of two Buildings Housing 90,000 birds with High Velocity Ventilation Stacks at 7m

11. This plan shows the area (shaded blue) that would be affected by an hourly exposure in excess of the Environment Agency's 98%ile hourly mean of 3.0ou$_E$/m^3, within which the impact of odours arising from the operation at the site of a unit housing 90,000 birds would be likely to be unacceptable.

12. The sensitive dwellings at Brooklands Farm, Brooklands and Manchetter Spring Farm all fall well outside of the 3.0ou$_E$/m^3 area.

Environmental permit application

Comments we can and cannot consider

September 2015

This is a summary of the types of comments we can and cannot consider when deciding whether or not to issue an environmental permit.

Comments we can consider:

- General operational management of the proposed facility
- Handling and storing of raw materials or materials used in the activity
- Efficient use of raw materials, water and energy
- Control of odour, noise, litter and pests
- Control of handling and storage of residual wastes from the process, e.g. poultry manure, dirty wash water, biomass boiler ash etc
- Potential impacts on the local environment, eg measures in place to prevent pollution during a flood
- Potential impacts on health, with advice from Public Health England as the responsible authority on this issue
- Any local factors that you believe the applicant has not considered in their permit application in relation to environmental impacts

Comments we cannot consider:

These issues would form part of any future planning application by the operator or are outside the remit of the Environment Agency.

- Animal welfare - this is not dealt with by Environmental Permitting Regulations. The operator of the site must comply with appropriate animal welfare standards in the design and operation of the farm.
- Alternative locations and size of the proposed facility
- Visual Impact
- Operational hours
- Vehicular movements to and from the site

APPENDIX D

10. The results of the modelling run for an installation of 90,000 birds are shown in Figure 1:

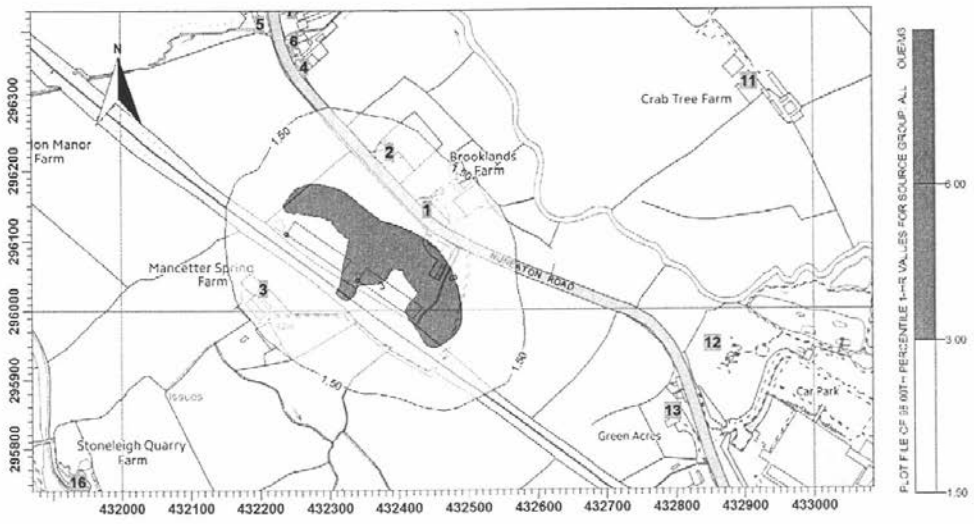

Figure 1: An Odour Model for a Broiler Unit of two Buildings Housing 90,000 birds with High Velocity Ventilation Stacks at 7m

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12. The sensitive dwellings at Brooklands Farm, Brooklands and Mancetter Spring Farm all fall well outside of the $3.0ou_E/m^3$ area.

APPENDIX E

Technical Guidance Note

IPPC SRG 6.02 (Farming)

Integrated Pollution Prevention and Control (IPPC)

Odour Management at Intensive Livestock Installations

ENVIRONMENT AGENCY

Guide to Odour Management

May 2005

Commissioning Organisation:
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Record of changes

Version	Date	Change
Version 1, Draft 1	November 2000	Included as appendix in version 2 of Standard Farming Installation Rules
Consultation Draft Version 1	May 2003	Guidance revised into a stand alone document for public consultation in England and Wales
Version 2	May 2005	Guidance revised following responses received from the public consultation

This guidance has been produced for England and Wales, Scotland and Northern Ireland. This document has undergone public consultation in England and Wales. It is anticipated that a public consultation on this guidance will take place in Scotland and Northern Ireland.

Contents

1 Background

1.1 What is IPPC?

Integrated Pollution Prevention and Control (IPPC) is a regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. In England and Wales IPPC operates under the Pollution Prevention and Control (England & Wales) Regulations 2000 (Reference 1). In Scotland IPPC operates under the Pollution Prevention and Control (Scotland) Regulations 2000 (Reference 2). In Northern Ireland IPPC operates under the Pollution Prevention and Control Regulations (Northern Ireland) 2003 (Reference 3). These Regulations implement the EC Directive 96/61 on IPPC. The Regulatory Regime applies to many industrial sectors, including the intensive farming of pigs and poultry. The threshold for such farms to be regulated under IPPC is:

- 40,000 places for poultry; or
- 2,000 places for production pigs (over 30kg); or
- 750 places for sows.

Regulation is achieved through the issue of a permit from the Environment Agency in England and Wales, Scottish Environment Protection Agency in Scotland (SEPA) and Environment and Heritage Service in Northern Ireland (NIEHS) (referred to as the Agencies in this document), which covers all aspects of the operation of the farm as defined by the installation boundary. To gain a permit, operators have to show that they have systematically developed proposals to apply the 'Best Available Techniques' (BAT) and meet other requirements for environmental protection, taking account of relevant local factors.

The Environment Agency, SEPA and NIEHS have developed a simplified permitting approach for the farming sector, through the development of Standard Farming Installation Rules (References 4, 5 and 6 respectively). These rules define BAT for the farming sector. Aspects of odour management are integrated throughout the Standard Farming Installation Rules, but in some cases site specific measures will be needed, and these must be identified in an Odour Management Plan.

The regulation of odour and other factors through IPPC replaces 'statutory nuisance' on permitted installations, through permit conditions regulated by the Agencies. Responsibility for investigating complaints passes from the Local Authority (statutory nuisance) to the relevant Agency once a farm has been permitted.

1.2 Who should use this guidance?

This guidance is specifically targeted at the pig and poultry sector, and includes many of the principles applied to all sectors regulated under IPPC referred to in Horizontal Guidance for odour (H4, Reference 7). The Agencies will refer to this Horizontal Guidance in determining conditions for odour at pig and poultry installations.

In England, Wales and Northern Ireland, you should use this guidance if:

- you answered 'yes' to question 2.3.6 on the application form, i.e. sensitive receptors are located within 400m of the installation; and/or
- the installation has a history of substantiated odour-related complaints within the last three years; and/or
- you are in the process of planning for a new installation, or extending an existing one – this guidance will provide information on best practice and impact assessment requirements, that may be required as part of the planning process.

In Scotland you should use this guidance for all applications.

1.3 How you should use this guidance

You should use this guidance in conjunction with the Standard Farming Installation Rules.

Section 2 provides guidance on the sources of odour, and some of the measures to minimise emissions.

Section 3 provides guidance on writing an odour management plan. This section should be used if you have sensitive receptors within 400m of the installation and/or the installation has a history of odour related complaints. You will need to consider some of the measures in section 2 in your odour management plan. In Scotland this section should be used for all applications.

Section 4 provides guidance on carrying out an odour impact assessment. This section should be used, in addition to the previous sections, if you are in the process of planning for a new installation, or extending a new one. An odour impact assessment will be required as part of the process of applying for planning permission. You may need to consult an odour specialist to complete the assessment, and should ask them to cover the points in this guidance.

1.4 What standards of odour control are expected?

1.4.1 What standard of control are we aiming for?

In the case of odour, pollution is considered in terms of causing offence to the sense of smell, i.e. causing annoyance to people who live in the area or are there for some other reason, through exposure to odour.

The point at which 'pollution' in the form of offence to the sense of smell is occurring, is taken to be the point at which there is 'reasonable cause for annoyance' (Reference 7).

The aim of the legislation is to achieve 'no reasonable cause for annoyance' by persons beyond the boundary of the installation, i.e. sensitive receptors, as far as is possible using Best Available Techniques.

1.4.2 Who are sensitive receptors?

Sensitive receptors are primarily people in dwellings, hospitals, schools and similar premises, but can include people frequenting open spaces, for example, parkland. The person in control of the installation would not normally be considered to be a sensitive receptor. Persons who live in close proximity in tied housing may be sensitive receptors (consider the families of the farm workers). If such properties are rented to people who do not work on the farm, the tenants are likely to be sensitive receptors, even if they rent with the knowledge that there is an odour source nearby, or recognise that odour is a feature of the rural environment.

In any particular situation however, the interpretation of the courts will be the decisive factor.

1.4.3 What is 'no reasonable cause for annoyance'?

The amount of annoyance should not be assessed only by means of the number of complaints. You should still use best practice to keep odour levels as low as reasonably possible where people live close by, even if complaints are rarely received.

The legislation requires that the amount that you spend on taking measures to reduce odour should be in proportion to the annoyance caused or potential to cause annoyance. Good practice should be adhered to at all times by all installations, but if a large number of complaints are received, or the installation is close to a built up area then you may have to expend more effort to reduce odour. BAT covers management techniques (i.e. Best Practice), as well as hardware, to control odour.

1.4.4 Standards for new installations

New installations will have to use BAT from the outset. Indicative sector BAT may help operators understand the requirements. As part of the planning process it is likely that an applicant will be required to undertake an odour impact assessment (section 4) to predict the odour emission.

The indicative exposure level criterion (section 4.1), which equates to 'no pollution', i.e. no reasonable cause for annoyance is: **3 $ou_E m^{-3}$ as a 98^{th} percentile of hourly means** at sensitive receptors, with such an adjustment as is appropriate to take account of local circumstances. This is the point at which the smell is recognisable e.g. as pig odour. Above this level experience shows that complaints are made about odour, that is 'pollution' is said to be occurring. The actual exposure limit applied in any particular situation will take account of the local environment such as proximity to housing and

weather conditions. The Agencies will consider the outputs from an odour impact assessment against these criterion.

1.4.5 Standards for existing installations

Existing installations will be allowed an appropriate timescale to upgrade where meeting BAT will involve capital expenditure, and 3 $ou_E m^{-3}$, as stated in section 1.4.4, may not be the appropriate standard on these installations in all circumstances. Existing installations will be expected however to adopt good management practices from the date of being granted a Permit. Any required changes in operation will be identified in an improvement plan set by the Agencies. This improvement plan may require the operator to investigate alternative techniques, provide recommendations and set timescales for implementation.

1.4.6 Complaints

Odour complaints relating to an installation may be received directly by the Agency or via the Environmental Health department of a Local Authority. If the installation operator holds a PPC permit, the Agency will investigate the complaint and if there is found to be a breach of the permit conditions, a notice may be served, requiring the operator to address the issues or proceedings may be instigated. If the complaint relates to activities not covered by the permit, the matter will be dealt with by the Local Authority.

2 Management of odour

2.1 General aspects of odour management

2.1.1 Overview

This guidance gives an overview of the principles of best practice for odour reduction and containment, as they relate to each of the Standard Farming Installation Rules. Not all aspects will apply to all installations and some installations will have arrangements which are not described here. You will need to pick out those elements which most closely match your circumstances and add in any other sources or problems.

The nature of intensive livestock operations mean that preventing odour generation at source is rarely possible as animals are inherently odorous. However, there are many things that can be done, often at low cost, to minimise odour or to prevent it reaching neighbours.

In most cases, attention to housekeeping and good operational practices should be capable of achieving a significant reduction in the level of exposure experienced at sensitive receptors.

In cases where all reasonable measures have been taken and have not succeeded in reducing emissions to the point where the exposure of sensitive receptors (local residents) is acceptable then 'end of pipe' abatement may need to be considered. This may require odour to be contained at source and extracted to an abatement system with minimum fugitive losses. Biofilters or absorption 'scrubber' systems (chemical or biological) are the favoured choice because of their effectiveness and ease of operation. This is obviously a more expensive option so all effort should be made to improve the housekeeping aspects of the operation. Guidance on such systems is beyond the scope of this document.

2.1.2 Using location/siting as a means of odour control

Care should be taken to site particularly odorous activities away from neighbours. Distance helps to dilute odours and making sure that odour sources are not upwind of houses (i.e. the prevailing wind direction) helps in reducing the impact of odours.

Although the siting of the installation will have been considered as part of the planning application, there may be some choice as regards, for example, the siting of slurry and manure storage areas, deciding what will be spread on fields near houses and what spreading techniques are used. The day to day operation of the installation is under the control of the installation operator who can play a major part in reducing odour levels.

2.1.3 Landscaping (tree planting and earth banking) as an odour barrier

Vegetation barriers (trees and hedges) and earth banks are sometimes said to provide a degree of odour control if planted between the source and local dwellings. However there is no evidence that landscaping has any effect in dispersing the odour. The psychological effect of removing the odour source from view probably has a much greater overall effect on the perception of odour rather than the actual odour reduction offered.

2.1.4 The use of odour masking/neutralising agents (air spraying)

The use of additives to mask, counteract or neutralise odour are only generally suitable for short term operations, such as transfer of material or for addition to a particularly odorous batch of slurry. They should not be regarded as a long term approach and, indeed, would not generally be cost effective in the long term.

The smell of masking agents can often attract as many complaints as the smell they are trying to cover.

The use of manure or slurry additives is discussed in Section 2.6.3.

2.1.5 Complaints procedure

A procedure should be established for verifying and responding to complaints about odour. The existence of a complaints procedure can help you to:

- improve relationships with neighbours;
- identify sources of odour and prevent future problems.

Prompt action in response to complaints, including a discussion with an explanation to the complainant, is very important and may stop issues escalating and further complaints being made. A quick and sympathetic response to complaints can often defuse a situation to the benefit of the complainant and the operator.

A suggested form for recording complaint details is given below.

The complaints record form should be tailored to the specific installation, location and neighbours, but most will have the following elements:

1) The form should be completed, signed and dated by a 'responsible person'.

2) The name, address and telephone number should be given by the caller.

3) Each complaint should be given a reference number.

4) The caller should be asked to give details of:
   - the time the odour was detected;
   - how long it lasted;
   - how often it occurs;
   - the nature of the odour – what sort of odour was it? What did it smell like?

5) The 'responsible person' should then, if possible, make a note of :
   - the weather conditions at the time the odour was detected – usually wind direction and a note of the conditions (light wind, no wind, strong breeze, or use the Beaufort scale in Table 2.1 below, clear, full cloud cover etc.);
   - the activity on the installation at the time the odour was detected, particularly anything unusual.

Table 2.1 Beaufort Scale

Force	Description	Observation	km/hr
0	Calm	Smoke rises vertically	0
1	Light air	Direction of wind shown by smoke drift, but not wind vane	1-5
2	Light breeze	Wind felt on face; leaves rustle, ordinary vane moved by wind	6-11
3	Gentle breeze	Leaves and small twigs in constant motion	12-19
4	Moderate breeze	Raises dust and loose paper; small branches are moved	20-29
5	Fresh breeze	Small trees in leaf begin to sway, small branches are moved	30-39
6	Strong breeze	Large branches in motion; umbrellas used with difficulty	40-50
7	Near gale	Whole trees in motion; pressure felt when walking against wind	51-61

6) The reason for the complaint should be investigated and a note of the findings added to the log – this need not be complicated but should be sufficient to identify any activity that may have led to the complaint.

7) The caller should then be contacted with an explanation. It often helps if you can show that you have taken some kind of action to minimise the odour in future.

Following complaints it may be appropriate to review the Odour Management Plan, if one exists.

The complaints record should be made available to the Agency on request.

Typical form for the recording of an odour complaint

Odour Complaint Report Form		
Installation to which complaint relates:	**Date recorded:**	**Reference number:**

Name and address of caller:	
Tel no. of caller:	
Location of caller in relation to installation:	
Time and date of complaint:	
Date, time and duration of offending odour:	
Caller's description of odour, e.g. comparison with other odours, strong/weak, continuous, fluctuating:	
Has the caller any other comments about the offending odour?	
Weather conditions (e.g. dry, rain, fog, snow):	
Wind strength and direction (e.g. light, steady, strong, gusting) or use Beaufort scale (see Table 2.1):	
Any other previous complaints relating to this odour?	
Any other relevant information:	
Potential odour sources that could give rise to the complaint:	
Operating conditions at the time offending odour occurred – e.g. removing manure from housing, deliveries, feeding:	
Follow-up Date and time caller contacted:	
Action taken:	
Amendment requirement to Odour Management Plan:	

Form completed by:		Signed:	

2.2 Sources of odour

2.2.1 Livestock housing

The odour associated with livestock housing tends to be related to ammonia. Hydrogen sulphide can also be present. High ammonia concentrations usually accompany high odour concentrations in broiler buildings where litter is in poor condition (too wet), but ammonia should only be seen as a component of the overall odour. This document does not deal specifically with ammonia control but with odour control in more general terms. Many of the actions taken to minimise odour will also minimise ammonia. Specific information and requirements relating to ammonia emissions can be found in the Standard Farming Installation Rules.

2.2.2 Manure and slurry

Odour arises primarily from the presence of manure/slurry and the biological changes which take place as it decomposes and also the body odour of the livestock. Some odour also arises as a result of cleaning and disinfection of sheds - from the removal of accumulated manure and also from fumigants used. Storage of manure or slurry in the open is also a source of odour.

2.2.3 Dust

An important mechanism in the release to atmosphere of odour may be the presence and subsequent emission via the ventilation system of suspended dust particles originating from bedding, feed and the animals themselves. Odorous compounds may be adsorbed onto these particles and the particles themselves may decompose releasing volatile compounds. There are specific rules relating to dust minimisation in the Standard Farming Installation Rules.

2.2.4 Factors affecting the release of odour

The level of odour emissions from intensive livestock installations is dependent on a number of factors, principally:

- size of operation;
- the type of building/ventilation;
- type of operation and the rearing cycle;
- the feeding regime;
- the way in which the operation is managed;
- storage arrangements for manure and slurry;
- land spreading practices.

The impact of those emissions on the local environment depends upon:

- proximity to local housing and other sensitive receptors;
- the nature of the local topography and prevalent weather conditions.

2.3 Aspects of odour management common to all operations

2.3.1 Selection and use of animal feed

The Standard Farming Installation Rules (see relevant section) give guidance on the selection and use of pig feeds and poultry feeds at different stages in the rearing cycle in order to reduce nitrogen excretion. A high protein diet increases the nitrogen and sulphur content of manure, contributing to emissions of ammonia to air and potentially other odorous compounds when the manure undergoes anaerobic degradation.

A number of different feed additives are available which claim to reduce odour from manure. In most cases these have not been proven sufficiently well for any to be recommended.

2.3.2 Feed delivery, milling and preparation

Good housekeeping measures (see relevant section of the Standard Farming Installation Rules) include:

- avoiding accumulation of waste feed;
- cleaning up spills;
- avoiding overflow and spillage from feed and drinking systems.

The addition of odorous by-products such as whey and fish meal to feed may increase the odour level of the feed (and accumulated spillages will smell more). Storage of these products may also lead to odour and dust generation.

Finely ground feeds and long feed drops onto floors should be avoided because they increase dust emissions. Odours may be absorbed onto particulate matter and then carried out of the building via the ventilation system.

Odours arising from storage of feed can be minimised by covering the storage containers or through the use of purpose built silos. Such storage areas should be protected from collision damage.

The delivery of the feed to the storage areas, and from the storage container to the feeding station should be through a closed system to minimise the generation of dust.

Mixing and milling of dry foodstuffs should be carried out using closed systems or in an environment from which emissions can be minimised.

2.3.3 Disposal of carcasses

Carcasses should be removed frequently to prevent odour-related annoyance and be covered to prevent access by birds or rodents using plastic bags or lidded bins where possible (see relevant section of the Standard Farming Installation Rules).

The Animal By-Products legislation specifies the requirements for carcass disposal including standards for incineration. Separate regulations apply in England, Scotland, Wales and Northern Ireland: these are The Animal By-Products Regulations 2003 (SI 2003 No.1482) in England, The Animal By-Products (Scotland) Regulations 2003 (SSI2003/411), The Animal By-Products (Wales) Regulations 2003 and Animal By-Products Regulations (Northern Ireland) 2003. The local authorities/district councils enforce these regulations and should be contacted for further advice.

2.3.4 Ventilation and humidity

Ventilation rates are determined by the needs of the animals and vary with season. Odour will be carried out of the houses with exhausted air and the exhaust rate will tend to be highest when the outside temperature is high. This generally occurs in the summer months when the potential to cause odour annoyance is highest.

Ventilation systems should be run at the optimum rate for the number of animals present. Insufficient ventilation capacity can lead to excessively high room temperatures which increase slurry/manure decay rates and hence odour emissions.

2.3.5 Atmospheric dispersion of odours

Once odorous emissions leave the source they undergo dilution and dispersion in the atmosphere downwind of the installation. Where odours are released at height, they are likely to be more effectively dispersed than those released at a low level or, inadvertently, from open doors.

The design of ventilation systems is a specialist field but in general terms roof (apex) vents produce better dispersion of odorous releases than those positioned along the side of buildings (side wall vents). Increasing the height of vent discharge points above roof level may give better dispersion. Ducting the ventilation flow to a single stack, which emits at a much higher level will provide still further improvement although may have the effect of making the odour detectable further away than was previously the case. Stack height calculation can be fairly complex and needs to consider a number of aspects relating to the emissions and the rate of emission, the temperature, the local topography and the location of receptors. It is best undertaken by a specialist.

The operator should ensure that dust deposits around the ventilation discharge points are cleared away on a regular basis to prevent excessive buildup.

2.3.6 Dirty water management to prevent stagnation

Stagnant water can be a source of odour. The following measures can help to ensure that dirty water (water contaminated by livestock excreta) is disposed of quickly and unintentional areas where water could accumulate and stagnate are minimised:

- fit kerbs to concrete aprons to direct dirty water into collection tanks;
- enclosing dirty water collection systems;
- emptying and cleaning dirty water collection systems to avoid allowing anaerobic conditions to develop in settled sludge;
- maintaining drains and concrete areas;
- dealing quickly with dirty water generated when buildings are cleaned out at the end of the cycle.

2.4 Odour management in pig rearing

2.4.1 Odours from pig housing

The principal sources of odour during rearing are slurry or manure and bedding material. The way in which the slurry or manure is collected in the pig houses, i.e. underfloor and/or on the floor, the amount, the temperature and residence time will affect the amount of odour generated. Odour emissions from the housing can be minimised by keeping the pig pens clean, i.e. by continually removing the slurry and regular removal of soiled straw or manure by flushing or scraping.

Other sources of odour are:

- the pigs themselves, both body odour and any manure on the skin;
- spilt feed;
- carcasses.

2.4.2 Minimising odour arising from animals and their housing

In general terms:

- odour emission rate increases with an increase in slatted floor area;
- wintertime emissions are lower than summertime emissions;
- ventilating the pit increases odour emissions substantially.

Techniques to abate emissions will depend on the type of housing and slurry or manure collection systems in place (see relevant section of the Standard Farming Installation Rules). For slurry based systems, techniques are aimed largely at reducing the surface area of the slurry, and to reduce the area of flooring which is damp. For manure based systems, which may be releasing odour, increasing the available straw will bind nitrogen and prevent ammonia and odour escaping.

Anaerobic breakdown (in the absence of oxygen), unless deliberately induced as a method of treating slurry is highly odorous and should be prevented by avoiding stagnation of wastes.

2.4.2.1 *General hygiene*

It is important to maintain a good standard of general cleanliness for animal welfare as well as for odour control. Any surface which is covered with manure will act as a source of odour. Therefore reducing the exposed surface will reduce the overall odour emission. Such surfaces include the animals themselves, as well as pens and flooring, in addition to areas around the buildings.

Dirty pens can be caused by a number of factors, for example:

- poor management and building design;
- poor ventilation design and inadequate ventilation capacity;
- wrong pen shape;
- poor floor surfaces;
- incorrect construction of pen divisions;
- badly sited feeding and watering facilities;
- overstocking or understocking;
- poor differentiation between feeding, lying and dunging areas in pens.

Some of these are design issues and should be addressed when planning new facilities or extending or replacing existing houses. However a lot can be done to minimise odour emissions by **keeping the pig pens clean**, by:

Slurry systems

- removing slurry and manure to a suitable store as frequently as possible;
- thorough cleaning and disinfection of pens once vacated;
- cleaning slurry and drainage channels to clear deposits, which encourage microbial growth;
- cleaning surfaces and ventilation shafts/cowls of dust deposits;
- maintain drinkers and troughs to prevent leakage.

Solid floor systems

- Providing drainage to avoid the accumulation of effluent in areas where it may collect and start to degrade in an anaerobic manner. The drained liquid should be collected in a closed tank.
- Repairing damaged concrete and drains to prevent ponding inside buildings.
- Use of sufficient bedding material to absorb excreta and keep animals clean.
- Maintain drinkers and troughs to prevent leakage.
- Storage of bedding material in a dry area.

2.4.2.2 *Flooring*

Floor design may be the most important measure which can be taken to reduce the odour emissions from slurry based pig buildings (Reference 8), e.g. use of part slatted rather than fully slatted flooring. Housekeeping will also play a part in ensuring a good standard of hygiene, in addition to the floor design:

- Slats, pens and other surfaces should be cleaned at the end of the batch. High pressure hoses provide an effective means of removing accumulated deposits.
- Scraped areas should be maintained to prevent ponding or building up of urine.
- Slurry and manure should be flushed away or removed regularly as the underfloor storage of large amounts of slurry over a prolonged time is a major source of odour.
- Damaged flooring should be repaired as soon as possible.

2.5 Odour management in poultry rearing

2.5.1 Odours from poultry housing

Odours from poultry sheds come from a number of sources. They are mainly caused by the breakdown of droppings and litter. Other sources of odour are from animal feed and waste food spilt onto floors. A major means of minimising odour emissions is through the use of good agricultural practice. Odour mitigation methods will be similar for all different poultry operations.
The Defra Code of Good Agricultural Practice for the Protection of Air (Reference 9) advises that the following factors contribute to the emission of odours from poultry sheds:

- build up of slurry or manure on concrete around buildings;

- removal and disposal of dead animals;
- drain maintenance;
- bedding cleanliness;
- management of drinking systems, with particular emphasis on frequently adjusting nipple and drip cups to bird eye level to avoid spillage and wet litter;
- stocking density;
- litter moisture content;
- insulation of the buildings and the long term maintenance of that insulation;
- ventilation and heating system;
- type of heating;
- composition of the feed, particularly its oil and fat content and its protein content.

The housekeeping practices at a well-run poultry operation should take these factors into account as part of their day to day management/operation of an installation.

2.5.2 Minimising odour arising from animals and their housing

Odour from litter and manure based systems may be minimised by increasing the dry matter content of the litter or manure, by both preventing spillages of water and providing a drying mechanism. If the dry matter content is 60% or above, ammonia emissions are minimal. New buildings should be able to meet this criterion.

2.5.2.1 Dust

Dust emissions may be a problem particularly for larger birds. Odorous compounds may be adsorbed onto dust particles and the particles themselves may decompose releasing volatile compounds. It is therefore important to:

- Control the generation of dust within the house through management of litter moisture content and air quality.
- Minimise the amount of dust emitted from buildings.
- Ensure dust deposits around ventilation discharge points are cleared on a regular basis to prevent excessive build up. Minimising dust production through good housekeeping and animal husbandry would be cost effective, in addition to the obvious welfare benefits.
- Collect the water discharging from cleaning operations in sealed tanks.
- The odour emission from a building can be dependent on particulate emission. Data published by Van Geelen (Reference 10) suggests that removing the dust fraction from an odorous stream reduces the odour concentration by about 65%.

2.5.2.2 Litter quality

Litter quality is affected by:

- temperature and ventilation;
- drinker type and management;
- feeder type and management;
- litter material and depth;
- condensation;
- stocking density;
- feed formulation and quality;
- bird health.

Investigate the minimum ventilation and heating requirements. In new houses ventilation should be designed to remove moisture.

Investigate increasing the initial depth of litter. A depth maintained at 10-15 cm should be sufficient to absorb the moisture loading.

Litter removed from the buildings at the end of the production cycle should be stored dry. The storage area should be stored away from residential areas.

In egg production a belt manure removal system (ideally with forced air drying) should be used to avoid the accumulation of manure from caged layers. Where manure falls directly into a deep pit, ventilation of the pit should be provided to keep the manure dry.

Duck manure tends to have a higher water content (around 30% dry matter) than other poultry litters, but the need for good hygiene and management practices are still relevant. For all litters, the following measures will help to minimise odour emissions:

- removal of dead animals;
- maintenance of drinking systems;
- provision of sufficient straw/litter to bind nitrogen and prevent ammonia escaping.

2.5.2.3 Drinking systems

The management of drinking systems should ensure that all litter is kept dry i.e. moisture content is less than 40%. Systems should be checked for leaks and action taken as necessary. Nipple drinkers and drip cups (operate on demand) should be used in preference to bell drinkers (always full of water) and they should be sited at the correct height to minimise spillage.

2.6 Odour and manure management

2.6.1 Slurry and manure handling

Slurry and manure handling and storage can be significant sources of odour (see relevant section of the Standard Farming Installation Rules). Effort to reduce odour from these sources can have a substantial positive effect on the overall odour impact of the installation on local receptors. In particular, anaerobic conditions can lead to the formation of high concentrations of odorous substances within slurry which will be released during 'bubbling off' or when it is disturbed.

Roadways and other areas should be kept free of slurry or manure. Minimising the surface area of material exposed will reduce the odour emission.

Waste feeds such as milk and whey, and silage effluent or dirty water should not be added to the slurry if there is a risk of causing odour problems because of the location of the slurry store or treatment tanks, or from the spreading of waste. Wherever appropriate, silage effluent should be stored separately from slurry and manure. The storage of silage effluent and slurry in the same tank is not recommended on health and safety grounds as this can increase the risk of the production of poisonous gases.

2.6.2 Slurry and manure storage

Slurry and/or manure storage areas and any material separated from the slurry or any straw based manure should be stored as far away as possible from residential areas.

Covering or enclosing slurry storage tanks will stop or significantly reduce odour escaping to atmosphere. The Standard Farming Installation Rules require that exposed surface areas of slurry in stores should be covered to minimise emissions of odour and ammonia - the options are to fit a rigid cover to a steel or concrete tank, or to use a floating cover of light expanded clay aggregate. Other covers, such as straw or peat will sink and do not reduce emissions effectively.

Fixed covers will reduce emissions, but the concentration of odour in the headspace can become very high. This may be released in one go when the cover is removed, producing very strong odours at receptors if not dispersed adequately in the air. This may cause particular annoyance, even if short lived. There may also be health and safety implications if workers are exposed to the air in the tank headspace.

Floating covers have the advantage of no headspace but will only work effectively if disturbance to the surface is minimised. A floating cover of aggregate will not trap odorous digester gases produced during 'bubbling off' in settled solid in slurry stores.

Some more permanent floating cover designs have an extraction system to remove gas.
New open slurry storage tanks will not be allowed and plans must be in hand to replace or cover existing open tanks.

Reducing the surface area will help in reducing odour emissions. Any form of agitation or turbulence from pumping or stirring will increase the odour from the surface of an open tank. Bottom filling will

minimise surface emissions. Formation of a crust may provide a degree of protection against odour emissions but turbulence from stirring can break the crust.

It is recognised that slurry mixing may be necessary to produce a suitable material for land application, but generally the preceding measure will reduce emissions of ammonia and odour. The frequency of stirring should be minimised.

Many of the requirements relating to storage of manure are aimed at avoiding the pollution of water courses by run-off. Odour minimisation is provided largely by keeping manure undercover in a storage building. Long-term field storage should be avoided as adequate cover may not be possible.

2.6.3 Treatment of slurries and manures

There are various options for slurry treatment, including screening, separation, composting, aeration and anaerobic digestion. Their use would need to be considered on a case-by-case basis. In general:

- Separation of sludge by mechanical means, aeration or digestion can reduce the odour emitting potential.
- If an aerobic or anaerobic system is used to reduce the odour emission it should be large enough to handle all the slurry produced, and designed for this purpose. It should be operated according to the manufacturers instructions.
- When using aerobic treatment methods, odour reductions and overall control is better when solid content is reduced.
- Monitoring should be undertaken to ensure that the appropriate conditions are maintained, particularly in the case of aerobic digestion.
- The solid content of the slurry store should be reduced using a separation stage. With less solid material present the need for stirring is reduced.

2.6.3.1 Slurry separation

The management of slurry can be improved by removing coarse solids. For example, for pig slurry comprising 2 to 4% dry matter, a simple wedge screen or vibrating screen can be used and the collected solids (8 to 12% dry matter) will self-drain if held in a suitable store. Separators that press, squeeze or screw the slurry against a fabric or perforated steel screen will produce a solid with a dry matter content ranging from 18 to 30%. If slurry is left in the collection pits for more than 3 to 5 days, degradation of material structure (becomes more fluid) can be expected making the separation process more difficult.

The solid portion, 10 to 20% of the original slurry volume, can be stacked and stored in a similar way to farmyard manure. At higher dry matter levels the material will be suitable for composting. The separated liquid portion, which is 80 to 90% of the original, can therefore be pumped to store. Once separated, storing the liquid portion is easier because there is less risk of crust formation and solid settling and therefore mixing in store only needs to be carried out occasionally which results in a reduction of odours released during storage.

If solids are not removed from the slurry, the organic loading within the slurry store (lagoon or tank) will become increasingly anaerobic. The presence of solid material provides an additional demand on available oxygen, thus increasing the amount of ammonia and hydrogen sulphide produced when the slurry is agitated.

2.6.3.2 Composting

Composting can significantly reduce the odour from manure. However the composting process itself can be very odorous.

The presence of oxygen is essential to the composting process and to prevent odorous anaerobic breakdown. Manure should be stored in narrow windrows no longer than 10-15m long and no taller than 3m high to assist composting. A method of collecting any run-off from the store should be provided.

2.6.3.3 *Slurry and manure additives*

There are a number of additives available which aim to change the qualities of the manure for a number of reasons, for example to improve its handling qualities, its fertilising value, its stability or to reduce the emission of volatile compounds and odour by changing its chemical composition.

In most cases these have not been proven sufficiently well for any to be recommended, although there are a number of anecdotal success stories.

Other treatment methods can be used to control odour emissions during storage. Additives are commercially available that claim to control odour emissions; the main types are:

- oxidising agents;
- deodorants which react with odorous compounds;
- odour masking agents;
- odour neutralising agents;
- biological agents – enzymes, bacteria;
- feed additives (Reference 11).

These additives vary in effectiveness and are generally not a long-term solution. Their use has not been included within the Standard Farming Installation Rules.

2.7 Slurry and manure spreading

Odours released from animal manure or slurry spreading activities are one of the most frequent sources of odour complaint to Local Authorities. During spreading, odours can be detected from between 1000 to 3000 metres (in exceptional weather conditions, Reference 9) from the field. Several factors affect the amount of odour emitted during and after slurry or manure spreading, these include:

- method of storage;
- length of storage;
- pre-treatment method employed (if any);
- type of spreading equipment used;
- rate of application to land;
- weather;
- whether the material contains waste milk or silage effluent (increases the amount of odour released).

The Standard Farming Installation Rules require that where spreading takes place on the Operators own land, it is done in accordance with an approved Manure Management Plan.

2.7.1.1 *Method of spreading*

The emission of odour is dependent on the method of spreading (References 4 and 9):

- **Splash plate spreaders** - the production of small droplets maximises the release of the volatile compounds in slurry into the air. The odour concentration during spreading can therefore be many times higher than immediately afterwards. The larger the droplets and the lower the trajectory, the lower the release of odour. It is preferable not to use splash plate spreaders near to housing.
- **Band spreaders** discharge slurry at ground level through a series of trailing pipes. Measurement shows an odour reduction of 55-60% when compared to conventional splash plate spreaders.
- **Shallow channel application** uses a mechanism to make grooves 50-70mm deep in the soil, 200-300mm apart and the slurry is directed into the channel immediately behind the cutting blade. Measurement shows an odour reduction of 55-60% when compared to conventional splash plate spreaders.
- **Shallow injection** - slurry is applied at a depth of 50-80mm in grooves 250-300mm apart. The grooves are closed again by press wheels or discs. The amount of odour emitted is approximately 85% less than for conventional spreaders.
- **Deep injection** applies slurry at a depth of 120-300 mm in the soil using injector tines, spaced about 500mm apart. The amount of odour emitted is about 85% less than for conventional spreaders.

Odour levels arising from different spreading techniques can vary with spreading method and burial technique. The data shows that while there will be high residual odour following application with low trajectory splash plate spreaders, the residual levels will be lower with band spreaders than with 'conventional spreaders'. Low spreading trajectory is defined as equipment operated at low pressure to create large droplets. Burial or injection of manure/slurry achieves a substantial reduction in odour emission, but may be restricted by soil and cropping limitations.

2.7.1.2 *General hygiene aspects*

Avoid the overfilling of tankers or spreaders to avoid spillage. In particular take care not to spill slurry or manure onto roadways.

Machinery should be cleaned regularly.

2.7.1.3 *Timing and location*

The following measures help reduce odorous emissions:

- Avoid spreading during periods of high humidity and very light winds or clear, still nights. During these meteorological conditions there is very little turbulence to disperse the odour. The best dispersion occurs on windy sunny days followed by cloudy windy nights.
- When odorous or partly composted manure has to be applied to land do not spread it close to houses. Where practicable, it should be spread onto arable land and then ploughed in within 24 hours.
- Unless the slurry is band spread, injected or odourless, spreading should be avoided at evenings, weekends and bank holidays, unless absolutely necessary.
- Spreading should not take place at night due to potential concerns over noise and nuisance. Furthermore, if run-off were to be caused, the operator would not be in a position to see impacts on watercourses etc.

3 Writing an odour management plan

You will need to produce an odour management plan if:

- you answered 'yes' to question B2.3.6 on the application form, i.e. sensitive receptors are located within 400m of the installation or the installation has a history of odour-related complaints; or
- you are making your application in Scotland.

3.1 How to write an odour management plan

To produce an odour management plan you should do the following:

1. Identify the sources of odour and/or complaint on your installation

Carry out a **subjective assessment 'walk around'** to identify where odours are coming from.

This type of assessment does not involve measuring or predicting emissions - instead it relies upon a subjective assessment of whether odour is present or not, and how strong it is.

This assessment can be carried out at specific points (such as local houses), or points around the perimeter of the installation. It can be undertaken on a daily basis, or when the wind is in a particular direction which carries the odour to local receptors. Some activities (such as cleaning) will increase the odour emissions and the effect of this on odour exposure of those nearby should be assessed using the same assessment technique. The exact requirement will vary from place to place and the Agency officer will advise as regards the best arrangements.

Walk round the installation and think about where odours come from:

- How much does odour increase during occasional operations such as animal loading, shed cleaning and removal of waste? Are complaints related to these activities?
- Are there slurry pits or manure storage areas? Are these covered or uncovered? Where are they located in relation to local houses?
- Is slurry or manure spread on the farm?
- Are there deposits of slurry, manure or feed etc. on roadways or in yards?
- Are there uncovered skips or bins?

It may be useful to record the intensity and extent of the odour in order to help produce your odour management plan. It is suggested that a scale of increasing odour intensity is used, such as:

1 No detectable odour.
2 Faint odour (barely detectable, need to stand still and inhale facing into the wind).
3 Moderate odour (odour easily detected while walking & breathing normally).
4 Strong odour (strong but bearable).
5 Very strong odour (very offensive, possibly causing nausea, particularly if not accustomed to this odour).

You should spend at least 3 minutes at the point(s) nearest to housing and, if odour is detectable you should consider which of the following best describes the extent of the odour:

1 Local & transient (only detected on the installation or within the installation boundary during brief periods when wind drops or blows).
2 Transient as above, but detected outside of the boundary.
3 Persistent, but fairly localised.
4 Persistent and pervasive up to 50m outside the installation boundary.
5 Persistent and widespread (odour detected >50 m from the boundary).

The results (1-5 for intensity and 1-5 for extent) should be recorded against the time and date and the appropriate monitoring location. The name of the person undertaking the assessment should be recorded. The cloud cover, wind direction and wind speed should also be noted using the Beaufort scale in section 2.1.5.

It is also possible to draw contour plots based upon detectability but in this case the 'measuring' points must be spaced in a grid pattern across the installation and surrounding area (as near as possible). The positions or relative positions of the points must be known so that points of equal strength can be joined together with the source as the centre of the plot.

2. Look at the odour sources and corrective actions discussed in Section 2

Note down those sources or activities which **do** cause a problem on your installation and the types of corrective actions that you will need to highlight in your odour management plan.

3. Transfer the relevant information into the odour management plan template in Section 3.2

- Identify each odour problem/source in Column 1.
- Select the appropriate corrective action from Section 2 for each problem.
- Adapt it to your particular circumstances – what would you do on your installation to achieve the same outcome?
- Identify the corrective actions in Column 2.

An alternative method for the subjective assessment is the standard method that has been developed for German legislation (VDI 3940 Part 1, Reference 12). The VDI standard is best carried out at points on a grid pattern and can include specific points. It requires an assessment at each point of up to 10 minutes recording perceived odour intensity every 10 seconds.

You should send your odour management plan together with your Permit application. Where you already have a Permit and need an odour management plan to deal with specific problems, you should discuss it with the Agency officer and then send a copy to the relevant Agency.

You will be expected to follow the actions you have set out in the plan.

If there are complaints and you can show that you have complied with these actions then the plan will need to be revised. You should start again at Point 1, above and discuss this with the Agency officer.

If you have not complied with the plan and complaints are received, then you may be liable to enforcement action.
If you cannot control the odour by use of best practice then the Agencies may require more stringent measures for odour control. It is therefore in your interest to ensure that the odour management plan is adhered to by all those employed at the installation and visitors, contractors etc.

3.2 Odour management plan template and examples

This section contains a blank table (on the next page) on which to note down the farm-specific actions to be taken.

All of the columns in the table should be completed using the guidance given in Section 2 and in the Standard Farming Installation rules. You should adjust this as necessary to make it relevant to the odour problems on your particular installation.

Required actions should be broken down into individual tasks as far as possible. It is often helpful to identify the individuals who will carry out each task (if relevant) and when this will be done. The plan should also include actions to be taken if something goes wrong which will increase odour emissions (such as a spillage) and seasonal variation in emissions.

An example of the type of information used to complete the table is given below:

EXAMPLE

Odour problem	Actions you will take to reduce the odour	Completion Date
Carcasses start to smell prior to collection	• New arrangement made with [the company that collects the carcasses. Collection now to be automatically made every two days unless we phone [person/number] to cancel a pick-up or to increase frequency. • Place in bins to keep vermin away. Ensure lid is tightly closed.	June 2005 July 2005
Complaints when slurry is spread next to New Road.	• Change method of spreading to band spreading on fields near roads & houses. • Review weather forecast before spreading – avoid periods of humid weather, light winds or clear still nights.	March 2006 June 2005

Odour management plan template

Odour problem	Actions you will take to reduce the odour	Completion Date	Ref: Farming rule (if applicable)

4 Full odour impact assessment

4.1 Overview

This section describes the options for carrying out a full odour impact assessment. It also describes the information that should be contained in the impact assessment report. You may need to consult an odour expert in order to carry out an odour impact assessment.

You may need to carry out a full odour impact assessment if:

- you are applying for a Permit for an existing unit and have answered yes to any part of Question B2.9;
- a subjective "walk round" assessment suggests that an odour problem exists or is likely to occur.

You will need to carry out a full odour impact assessment if:

- you are applying for a Permit for a new unit or you are applying for a variation of a Permit for an extension to an existing unit and there are sensitive receptors which may be affected; or
- you have failed to control odour sufficiently using housekeeping measures and consequently other steps are needed to reduce the odour emissions.

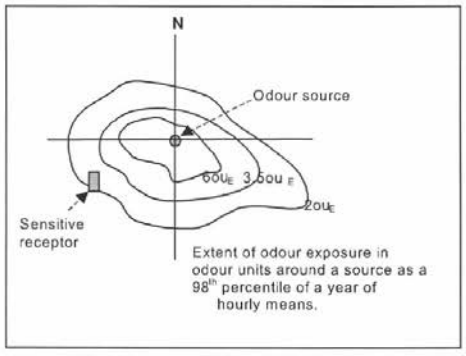
The closer the sensitive receptors the greater is the likelihood that a full odour impact assessment will be needed. Additionally, in the case of extensions to existing installations, the complaint case histories may influence the need for an impact assessment.

It should be noted that an impact assessment which has been carried out for planning purposes may not contain sufficient information for an IPPC application. You should check with the Agency Officer.

In all cases you will be expected to regularly walk around the installation perimeter or near to local houses to see if odour from the installation can be detected. This is a 'subjective assessment', as described in Section 3.1. People who are regularly exposed to a particular smell often become tolerant to it so it is often helpful to ask someone who does not spend all their time at the installation to do this.

There are two main steps in carrying out a full odour impact assessment:

- the odour emissions must first be measured or predicted;
- the emissions data is fed into a mathematical atmospheric dispersion model which calculates the spread of the odour around the source, taking the local weather patterns into account (modelling is described in Section 4.4).



The model will draw a contour plot around the source (or proposed new installation), linking points of equal ground level concentration. Local houses and all other frequented areas, not including footpaths or public roads, will fall somewhere within a contour. The concentration at this point is compared to a benchmark level and it can be determined whether the concentration is acceptable or not.

Emissions can be measured, or predicted where measurement is not possible or the installation has not yet been built.

Figure 4.1 Odour contours around a source

4.2 What is an odour unit?

An odour unit is a measure of the concentration of a mixture of odorous compounds in a sample. It is determined by means of olfactometry.

The threshold of detection of an odour is the point at which it is just detectable, i.e. it produces a first sensation of odour in an average person. The concentration of a particular odour is considered in terms of the number of times that a sample of the odour has to be diluted before it becomes just detectable (it is at the detection threshold). This is determined by presenting a sample to an 'odour panel' made up of a number of trained observers in a laboratory setting. The sample is diluted a number of times and the threshold of detection is the concentration at which 50% of the panel of observers can first detect the odour (this point is equivalent to one odour unit). The concentration of the original sample is expressed in terms of the number of dilutions or in odour units.

Samples for olfactometry are usually collected directly from vents or above odour sources in large sample bags. In general it is not possible to collect samples at the point where people live because the sample will be too dilute to allow it to be further diluted for testing.

In very general terms, based on the 'intensity' of the odour:

- 1 odour unit is the threshold of detection (in the laboratory);
- 3 odour units is the point at which the smell is recognisable, i.e. it could be recognised as pig odour;
- 5 odour units is noticeable (faint);
- 10 odour units is a distinct smell which can be intrusive.

The amount of time that someone is exposed to the odour, its intensity and the type of odour will all play a part in producing a state of annoyance. In addition, the sensitivity of any particular individual to an odour, their memories of past exposures and the timing of exposure (for example at meal times or perhaps when feeling unwell) are also key factors.

The indicative exposure criterion applied to livestock at new installations is:
3 ou_E m^{-3} as a 98th percentile of a year of hourly means at location xyz

This means that an average concentration of 3 odour units (averaged over an hour) is to be met at a specified location for 98% of the time, as indicated by modelling.

4.3 Measuring emissions

The odour from pig rearing sheds is a mixture of different compounds, usually with a high concentration of ammonia. Mixtures of compounds are generally measured in terms of odour units.

Usually a few vents are selected for sample taking. These should be representative or typical of all the other vents. The results in odour units are then extrapolated according to the number of vents.

There are two important points to note when making an assessment of emissions:

- Odour emissions from any particular building can vary quite markedly from day to day, depending on a range of factors including stock numbers and weights (especially with all-in/all-out stocking), seasonal temperatures (which affect ventilation rates) and feeding systems. If measurements are to be carried out on-farm, then these factors need to be taken into account and the number of samples collected, and the times when samples are collected, adjusted accordingly to get useful information. If not, the odour impact assessment may under or overestimate the impact.
- It is much more difficult to make an accurate assessment of the odour emission from heaps of manure, material spilt on roadways, land spreading of slurry and manure etc. It is therefore important to minimise these activities by observing the requirements of the Farming Rules and using good management practices.

Where emissions are under-estimated by poor procedural practices in odour impact assessment and assumptions which cannot be substantiated, this may make the difference between a prediction that local residents will find the emissions from a new installation or extension acceptable and an actual situation where there is cause for annoyance.

In such circumstances the Operator may be required to take whatever abatement measures are necessary to meet his predicted exposure levels at local receptors.

IPPC guidance Note H4: Part 2 (Reference 7) should be consulted for detail on sampling and assessment techniques.

4.3.1 Additional points to note relating to pigs

Additional points to consider when reviewing an odour assessment report relating to pigs:

- Odour emissions will vary throughout the rearing cycle and as the age of stored slurry increases. Assessments made immediately after housing has been cleaned or the collection pit emptied should be avoided.
- Many of the odour sources on a pig operation are surface sources. The methodology used to determine the odour rate should be clearly defined.
- All the results of an olfactometry exercise should be reported rather than a single averaged value.
- Where practical, the air flow rate should be measured (this may not be possible for all odour sources).

4.3.2 Additional points to note relating to poultry

Additional points to consider in an odour assessment report relating to poultry are:

- Odour emissions vary through the broiler rearing cycle and tend to rise towards the end. An assessment using data from a building housing broilers of less than 30 days is unlikely to correlate with the actual nuisance situation.
- Odour samples should be collected at a point of emission rather than from within the building.
- All results of an olfactometry exercise should be reported rather than a single averaged value.
- The air flow rate must be measured and the number of fans in operation reported, as well as the total number possible.
- Although the single most important factor in controlling odour, the moisture content of litter cannot be used solely to predict the odour emission rate because several other factors may influence odour generation.

For poultry operations, control systems should maintain the temperature within buildings by reducing the ventilation rate, especially at night and during the winter months. It should be noted that research (Reference 8) suggests that a reduction in ventilation may not necessarily result in an increase in odour emissions. To maximise the reduction of odour emissions, open topped fan stacks/chimneys and step control of fans should be switched on and off at full speed only.

Where ventilation discharges are roof mounted some apparent benefit should be gained from the upward velocity (giving momentum). In many instances such discharges have a device to prevent the ingress of rain e.g. a cowl that reduces the upward velocity. Where the ventilation is computer controlled the velocity will be dependent on the ventilation rate, which in turn will be controlled by temperature and humidity. Therefore the optimum upward velocity (≈15m/s) may not necessarily be achieved at all times.

4.4 Predicting emissions

When it is not possible to measure emissions, perhaps because the impact assessment relates to a proposed installation, it is possible to predict emissions by using:

- measurements taken at a similar installation (similarity must be justified);
- emission factors where they are available.

Odour emission factors are numerical values which can provide a substitute for measuring emissions. They are based upon assessment by olfactometry of samples from vents etc. from a number of different livestock installations which give an odour emission rate per pig/bird. Although the figures are based on limited data and are therefore very imprecise, they can be useful in providing an approximation of odour emissions which can be modelled to show an estimate of the predicted

impact. Due to this uncertainty, it is good practice to compare any site specific odour emission measurements with either published values or 'blueprint' emissions.

4.4.1 Use of odour emission factors

Odour emission factors should be taken from published data. There are a number of sources for these factors, such as:

- MAFF R&D Project WA0601 - UK, Reference 8;
- Sneath and Robertson – UK, Reference 13;
- Clarkson and Misselbrook – UK, Reference 14;
- Environmental Protection Agency – USA, Reference 15;
- Ognik and Lens – Netherlands, Reference 16.

Caution: there can be considerable variation in the emission factors between farms and also on the same farm. It should be recognised that published figures may not reflect the increase in odour emission with increasing weight/age.

It is likely that new information and emission factor data will become available and you should ensure that the latest and most suitable data is used for your assessment.

The emission factor used should be included in your assessment and your choice of factor and any assumptions made should be justified.

In some cases, emission rates expressed on a per head (or per kg of liveweight) basis may not be a reasonable method of calculating emissions if the buildings in question have "abnormal" ventilation systems. In some instances, it may be better to base dispersion modelling on emission rates calculated from a **typical odour concentration** multiplied up by a suitable **ventilation rate.** An example could be 75% of maximum ventilation rate (to take account of variations with weather/temperature and the fact that the system does not run flat-out all of the time) multiplied up by a typical odour concentration.

Some odour can arise from the cleaning and disinfection of sheds, from the removal of accumulated manure and litter, and also from fumigants used. These comparatively short lived operations will need to be considered as part of the assessment.

The odour emission rate can be used to predict the impact at receptors by using the Schauberger and Piringer methodology (Reference 17). This is used to assess the protection distance necessary to avoid annoyance between an odour emission source and a receptor, while taking some account of local conditions.

4.5 Dispersion modelling

Where the odour emission rate from a source is known by measurement, or can be estimated, the odour concentration in the vicinity can be predicted by means of dispersion modelling.

A dispersion model attempts to describe the effects of atmospheric turbulence on the emission(s) as they undergo dilution and dispersion in the environment between the source and receptors. Concentration is one of the factors that determine the impact of a given odour on sensitive receptors.

The modelling of odour is still a developing field when compared to other pollutants. A range of different models have been used for odour modelling and all have a number of common features, but there are differences in the way that data is dealt with between the older gaussian models and the new generation models such as AERMOD and ADMS.

To visualise the extent of odour impact it is useful to produce contour plots showing odour concentrations around the source or highlighting where concentrations exceed the appropriate exposure criterion as shown in Figure 4.1.

IPPC guidance Note H4: Part 1, Appendix 4 (Reference 7) covers the subject in more detail and proposes a 'recommended' approach to odour modelling aimed at bringing about consistency of approach. There may be circumstances in which there is a valid reason for taking a different

approach and the proposed parameters do not exclude this, provided that the methodology is described and justification given. The ventilation rate from livestock installations is generally higher in summer months (and this is when the potential to cause annoyance is highest as people are outside more, windows open etc.). In winter however the ventilation rate is lower but the odour concentration is likely to be higher. It would be best practice to use winter rates for establishing 'worst case' in terms of odour impact.

Given the range of factors that can affect odour emissions and the difficulty in controlling them, it is not possible to obtain a truly representative estimate of the odour emission from a small number of collected samples either from a poultry house or pig building. At best, such measurements will provide a snapshot of the conditions on the day(s) when the samples were collected. Because of this uncertainty it is good practice to consider the impact of the 'worst case' situation rather than the 'average' situation.

4.6 Odour impact assessment reporting

4.6.1 Overview

The following is a summary of good practice in terms of reporting protocol and should allow confirmation that the scope and conduct of the work has been competently handled and reflects the variability in odour emissions.

4.6.2 What should a report cover?

Each assessment will be different and farm-specific but there are a number of common features which should be covered in a well-planned and executed survey.

Unless the assessment is deliberately targeted at specific events only, it is usual to consider both 'normal' operation and also 'worst case'. Odour emissions can be at their highest levels when buildings are cleaned out at the end of each bird crop. There is no satisfactory method of quantifying emissions from these operations to allow odour impact to be modelled, and it would in any case be very difficult to interpret the modelled output for such an infrequent/intermittent odour source. The most important point is that operators must be very aware of the potentially high odour emissions during cleaning out, and they must incorporate suitable control measures into their cleaning out procedures, and document these controls in their Odour Management Plan.

The report may also make recommendations as to the possible measures that could be taken to achieve BAT, both in terms of housekeeping and other management practices, and options for odour reduction by the addition of end-of-pipe abatement equipment.

The aspects which should be addressed during the survey, and reflected in the final report, can be broadly categorised as:

- summary of findings;
- a description of the process, its throughput and location;
- a statement of the objectives of the survey;
- a description of the methodology used for sampling and analysis;
- a description of the installation-based work actually undertaken;
- monitoring results;
- interpretation of the results and conclusions drawn;
- recommendations and discussion.

For each aspect, the following would be expected:

i) Summary of findings

ii) Process description and 'scene-setting'

The following should be included, as appropriate:

- The location of the installation in relation to the nearest sensitive sites (usually dwellings).
- A diagram of the layout and/or map showing the relative positions of the animal houses and the nearest houses.

- A description of the process - including the number of animals and techniques in use to minimise odour. A description of the nature of the buildings and the ventilation system or other containment such as slurry tanks or stores should be given, if appropriate.
- A description of the nature of the odour problem and the typical rate of occurrence.
- Complaint history - numbers, quantity, duration, frequency, any pattern or trends.
- The location and nature of any other potential odour sources in the locality.
- A description of any work previously undertaken with respect to the odour issue - perhaps previous survey work or actions taken to mitigate odours and the success or failure of such measures.

iii) A statement of the objectives of the survey

iv) A description of the methodology used for sampling and analysis

A description of the main features of any standards or other methodologies used:
NB: Where olfactometry is undertaken, the guidance given in the BSi standard (Reference 18) should be followed and all departures from the procedures described should be justified and recorded.

- a description of the equipment used for sampling and analysis;
- an estimate of error associated with both sampling and analysis.

v) A description of the activities going on when the samples were taken

It is usual to consider 'worst case' when carrying out an odour impact assessment. This will entail taking samples at an appropriate time relative to the work being undertaken to account for any variation in emissions in order to avoid 'averaging' the peaks.

The report should detail:

- sampling locations;
- flow rates, gas temperature etc. and how these were measured;
- sampling times;
- an explanation of why the particular sampling points and sampling times were chosen;
- process activities whilst the work was being undertaken;
- any arrangement made for dilution of wet or hot gases and the extent of the dilution;
- weather conditions on the day of the survey and wind direction, strength.

vi) Analytical results

- Raw data should be given. Lack of raw data prevents checking or validation of the scope of the assumptions made.
- Time elapsed between sampling and assessment.
- For olfactometry, a description of the panellists, i.e. local or supplied by testing laboratory.
- Any deviations from standard analytical/assessment methods.
- Details of the quality assurance provided by the testing laboratory.

vii) Interpretation of the results and conclusions drawn

See Appendix 4 of Reference 7 for information on recommended parameters for dispersion modelling of odorous emissions.

- Dispersion modelling – state which model was used and describe its suitability for assessment of odorous emissions.
- A description of the data that was input to the model to account for topography and buildings, meteorology etc. for each run. State the origin of the meteorological data obtained and which area it relates to and why it is applicable to the particular assessment. (Wind directions given by met stations would generally relate to open land). Care is needed in applying the frequencies directly to mixed terrain, hills, valleys etc.
- Describe any features of the local topography which are likely to produce more frequent inversion conditions or other meteorological 'quirks'.
- A statement of any assumptions that have been made with respect to use of any emission factors or other predictions used in place of sampling, or to any other aspects of the release.
- The results for each run of the dispersion model should be given together with an interpretation in terms of the effect on the local environment.
- Maps, figures and contour plots should be used to illustrate the extent of odour impact, including identification of specific sensitive receptors.

viii) Recommendations and discussion

This will be strongly influenced by the nature and purpose of the survey and may cover:

- an estimation of the likely impact of current or predicted emissions on sensitive receptors;
- an estimation of the amount by which emissions will need to be reduced to avoid causing annoyance;
- suggested changes to activities or buildings;
- relevant control technology and costs if available;
- measures to be employed to monitor the effectiveness of any changes made.

The above is not exhaustive but should be provided as a minimum (where relevant to the purpose of the survey) by a competent contractor or survey team.

References

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2. The Pollution Prevention and Control (Scotland) Regulations 2000. The Stationary Office ISBN 0 11 059467 3.
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5. Standard Farming Installation Rules for Pig and Poultry PPC Installations. Version 1.1, February 2001, Scottish Environment Protection Agency. http://www.sepa.org.uk/pdf/ppc/agric/sfi_rules.pdf
6. Standard Farming Installation Rules and Guidance, Version 1, April 2003, Northern Ireland Environment and Heritage Service. http://www.ehsni.gov.uk/pubs/publications/SFIRNIvers1.pdf
7. IPPC Guidance Note H4:Horizontal Odour Guidance Part 1 – Regulation and Permitting, Part 2 – Assessment and Control, Environment Agency, October 2002 (consultation document).
8. MAFF R&D Project WA0601. Measurement of odour and ammonia emissions from livestock buildings. S Peirson & R J Nicholson, ADAS, March 1995.
9. Code of Good Agricultural Practice for the Protection of Air, Ministry of Agriculture, Fisheries and Food (now Defra), October 1998.
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11. Nielsen, V.C. 'Prevention and control of smells on livestock farms, farm waste management.' Booklet 2840, Ministry of Agriculture, Fisheries and Food (now Defra), 1985.
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14. Clarkson and Misselbrook 'Odour emissions from broiler chickens' in 'Odour and ammonia emissions from livestock farming' (Neilsen, Voorburg & L'Hermite eds.), Elsevier Applied Science, London. 1991.
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17. Schauberger and Piringer (1997) 'Guidelines to assess the protection distance to avoid annoyance by odour sensation caused by livestock husbandry', Proceedings of the Fifth International Environmental Symposium, May 29 - 31, pp170-178 in Environment Agency R&D Technical Report P4-079/TR/2 Best Available Techniques for Assessment and Control of Odour pp. 202-213.
18. BSEN13725;2003. Air quality – Determination of odour concentration measurement by dynamic olfactometry. BSi.

Other sources of information

1. Assessment of community response to odorous emissions – R&D Technical Report P4-095, undertaken for the Environment Agency by OdourNet UK Ltd, October 2002.
2. Determination of the Best Available Techniques for Control of Odour – R&D Technical Report P4-079, AEA Technology on behalf of the Environment Agency, October 2002.
3. The Scottish Executive Code of Good Practice for the Prevention of Environmental Pollution from Agricultural Activity (PEPFAA Code) "Dos and Don'ts Guide" 2002.
4. Nimmermark, S. Odour influence on well-being and health with specific focus on animal production emissions. Review article, Ann Agric Environ Med 2004, 11, 163-173.

APPENDIX F

POSITION STATEMENT

INTENSIVE FARMING

Introduction

The Health Protection Agency (the Agency) supports Primary Care Trusts (PCTs) and Local Health Boards (LHBs) in their role as 'Statutory Consultees' for the Pollution Prevention Control (PPC) regime. Statutory Consultees are considered to have special knowledge or expertise. Guidance on PPC is available at: http://www.hpa.org.uk/hpa/chemicals/IPPC.htm

Intensive Farming is subject to regulation under PPC Sector 6.02. These installations are likely to be of a low public health impact. While a large number of applications (over 1000) are expected, the information on which to base a health response will be extremely limited as this sector does not have a history of similar environmental regulation. Furthermore, the Regulator will be adopting a streamlined approach with this sector and will not be requiring an extensive amount of information pre-permit issue. Moreover, if monitoring and detailed risk assessment is necessary this is likely to be undertaken after the statutory health response is required.

Consequently, the Agency's Chemicals Hazards and Poisons Division have produced this position statement on the public health consequences of these processes in order to help inform the debate. It is also worth acknowledging that most applications will relate to existing installations.

About the Sector

PPC applies to larger pig and poultry farms with capacity for more than:

- 750 sows
- 2,000 production pigs over 30 kg
- 40,000 poultry (includes chickens, layers, pullets, turkeys, ducks, guinea fowl and quail)

Pigs reared outdoors are excluded from PPC, but free-range poultry (egg-laying and chickens reared for meat) are included. A permit to operate will cover all aspects of farm management, from feed delivery to manure management. Animal welfare is not covered by PPC.

The Environment Agency has produced a general guidance document for this sector[1] along with separate guidance for odour[2] and noise[3].

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[1] Integrated Pollution Prevention and Control (IPPC): Intensive Farming How to comply Guidance for intensive pig and poultry farmers April 2006. Available at: http://www.environment-agency.gov.uk/commondata/acrobat/ippc_comply_0406_1397535.pdf

[2] Odour Management at Intensive Livestock Installations. Available at: http://www.environment-agency.gov.uk/commondata/manguidance_1056765.pdf

[3] Noise Management at Intensive Livestock Installations. Available at: http://www.npa-uk.net/ds_portal/library/IPPC%20Noise%20Guidance.pdf#search='Noise%20Management%20at%20Intensive%20Livestock%20Installations

Pollution Potential

Pig and poultry installations may affect the environment through a number of ways including fugitive emissions to air, discharges to water, manure management and nuisance issues.

Fugitive Emissions to Air

Pig and poultry farms have the potential to release a number of pollutants to air but the Agency would expect operational and permit conditions to minimise fugitive emissions to air from the installation.

Ammonia
Ammonia may be emitted from livestock and from manure, litter and slurry and may potentially impact on local people or vegetation (permits may be refused if critical loads to the environment are exceeded). The health effects of exposure to ammonia at low levels include cough, phlegm, headaches, nausea, wheezing, breathing difficulties and asthma.

However, it is unlikely that ammonia emissions from a well run and regulated farm will be sufficient to cause ill health. Levels of ammonia will decrease rapidly once diluted in ambient air and operational requirements should ensure that emissions are kept as low as is reasonably possible. Proper construction and operation of farm buildings, appropriate management of manure and slurry, and management of protein levels in feed/feeding cycles will all serve to minimise ammonia emissions. Furthermore, in exceptional circumstances ammonia scrubbers may be installed to reduce ammonia emission by dissolving the gas in water. All these measures will also reduce odour emissions from the unit.

The need for monitoring of ammonia will be decided by the Regulator depending on the distance to sensitive receptors, complaint history and level of emissions. This will be decided on a case-by-case basis and any existing monitoring data should be included in the application.

Bioaerosols
Bioaerosols are airborne particles that contain living organisms, fragments, toxins, and waste products. Possible health effects include exposure to infectious diseases, allergic reactions, respiratory symptoms and lung function impairment[4].

Clearly, intensive farming has the potential to generate bioaerosols. Recent research in the United States found that those living up to 150 metres downwind of an intensive swine farming installation could be exposed to multi-drug resistant organisms[5]. However, current information is limited and the potential public health issues arising from bioaerosols from intensive farming need further evaluation. Such information is necessary when the Regulator has to make decisions such as the proximity of sensitive receptors to sites. It is likely that the dispersion of bioaerosols from intensive farming sites will be dependant on environmental circumstances such as local topography and prevailing weather conditions. Mitigation

[4] Douwes, J. *et al* (2003) Review of Bioaerosol Health Effects and Exposure Assessment: Progress and Prospects. Ann. Occup. Hyg.; 47(3), 187-200.
[5] Gibbs S. G *et al* (2006) Isolation of Antibiotic-Resistant Bacteria from the Air Plume Downwind of a Swine Confined or Concentrated Feeding Operation. Environmental Health Perspectives; 14(7), 1032-1037.

measures addressing occupational health of workers will also contribute to the protection of local communities.

Given the very limited direct evidence of bioaerosol emissions from intensive farming we have considered information on bioaerosol generation from large scale composting facilities. Composting sites are known to produce considerable quantities of bioaerosols and when permitting these industries the Regulator has prescribed a minimum distance of 250 metres from local communities[6]. Exceptions to this 'limit' are allowed if effective mitigation techniques are employed. This limit is based on published studies which indicate that bioaerosols are generally reduced to background levels within 250 metres of the facility, although it is accepted that under certain circumstances, such as stable atmospheric conditions, bioaerosol concentrations may occasionally not be reduced to background levels within 250 metres. We anticipate that further information on the potential of intensive farming industries to generate bioaerosols will become available over the next few years and we would expect this information to be incorporated into future reviews of PPC permits.

Particulate Matter

The potential for particles to cause health effects is related to their size. Dust emitted from intensive farming may include fine particles with an aerodynamic diameter of less than or equal to 10 µm (termed PM_{10}). This size fraction of inhaled particles may penetrate the respiratory system beyond the larynx. Agriculture in the UK may be a significant source of PM_{10} with an estimated national contribution ranging between five to fifteen percent[7,8,9], with poultry houses responsible for some five percent of UK emissions. Both long and short-term exposure to ambient levels of particles (including PM_{10}) are associated with respiratory and cardiovascular illness and mortality[10]. People with pre-existing lung and heart disease, the elderly and children are particularly sensitive to particulate air pollution. For the most part, people will not notice any serious or lasting ill health effects from levels of particles commonly experienced in the UK.

Sources of PM_{10} within the intensive farming industry may include feed delivery, storage and transport, dusty wastes and vehicle movements. It is possible that large farms may make a substantial contribution to local PM_{10} levels but in such circumstances we would expect Local Authorities to consider farms within their local air quality review and assessment.

The Agency would expect that the use of Best Available Techniques (BAT) will minimise the amount of dust released. On-site mitigation measures addressing occupational health of workers will also reduce off site emissions. It is recommended that the Regulator act on any dust complaints and, if necessary, seek advice on the risk to health from the local PCT.

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[6] The Composting Association and Health and Safety Laboratory (2003) Research Report 130 - Occupational and environmental exposure to bioaerosols from composts and potential health effects - A critical review of published data. Report produced for the Health and Safety Executive.

[7] Atmospheric emissions of particulates from agriculture: a scoping study, MAFF research report, WA 0802, 2000.

[8] Takain H. *et al* (1998) Concentrations and Emissions of Airborne Dust in Livestock Buildings in Northern Europe. J. Agric. Eng. Res; 70, 59-77.

[9] The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. A consultation document on options for further improvements in air quality , April 2006.

[10] COMEAP (1998). Quantification of the Effects of Air pollution on Health in the United Kingdom. Department of Health Committee on the Medical Effects of Air Pollutants. The Stationary Office, London.

We would expect further data on the impact of intensive farming industries on local air quality to become available over the next few years, particularly once these processes become regulated under PPC. Consequently we recommend that the Regulator will consider any new data in future reviews of PPC permits.

Emissions to Water
The potential impact to water should be low since emissions to ground or surface water should fully comply with the regulations and limits set out in Groundwater Regulations 1998 and the European Groundwater Directive (80/68/EEC). In addition to compliance with domestic regulations for surface and groundwater, the Regulator must ensure that any emissions to sewer from the installation are within consent limits.

Correct storage of liquid feeds, fuel oil, pesticides and veterinary medicines in secured and bunded areas will further reduce the potential for spillages and pollution of water courses. The Operator should also maintain records of any chemicals used. This should apply to the annual quantities used and the quantities stored at any given point in time.

Manure management
We would expect that the design, construction and management of manure and slurry storage will prevent or minimise emissions and that this will be controlled through standard permit conditions. As part of the permit, we understand that the applicant will be required to draw, maintain and review a manure management plan detailing what and where substances will be applied to land. Manure can contain a range of zoonotic pathogens and incorrect storage can encourage the development of large fly populations that can have nuisance or disease transmission potential.

Nuisance Issues
Intensive farming sites may occasionally present nuisance issues, such as odour, noise, vermin and insect infestation. The Regulator should ensure there is "no reasonable cause for annoyance" beyond the boundary of the site. Any substantiated complaints should be properly investigated and, if necessary, changes in operations may be required as part of a site's improvement plan.

The applicant may need to produce an odour management plan if there are local communities within 400 metres of the site boundary and/or if the installation has a history of substantiated odour-related complaints. This plan should be completed before permit issue and should detail the odour problems of the installation, the actions to be taken to resolve these issues and a suitable timescale for implementation. Furthermore, an odour impact assessment will be carried out if an impact assessment is required under planning or if the applicant has failed to control odour emissions and abatement is required.

Where necessary the applicant should produce a management plan for verifying and responding to complaints about odour and noise. Noise should be appropriately assessed by the Regulator and local authority, who are also statutory consultees to this application.

Conclusion
Intensive farms may cause pollution but provided they comply with modern regulatory requirements any pollutants to air, water and land are unlikely to cause serious or lasting ill health in local communities. The Agency, not least through its role in advising PCTs and

LHBs, will continue to work with Regulators to ensure that this sector does not contribute significantly to ill-health.

APPENDIX G

Technical Guidance Note

IPPC SRG 6.02 (Farming)

Integrated Pollution Prevention and Control (IPPC)

Noise Management at Intensive Livestock Installations

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Record of changes

Version	Date	Change
Version 1, Draft 1	September 2002	Included as appendix in version 2 of Standard Farming Installtion Rules
Consultation Draft Version 1	March 2005	Guidance revised into a stand alone document for public consultation in England and Wales
Version 2	November 2005	Guidance revised following responses received from the public consultation

This guidance has been produced for England and Wales, Scotland and Northern Ireland. This document has undergone public consultation in England and Wales. It is anticipated that a public consultation on this guidance will take place in Scotland and Northern Ireland.

Contents

1 Background

1.1 What is IPPC?

Integrated Pollution Prevention and Control (IPPC) is a regulatory system that employs an integrated approach to control the environmental impacts of certain industrial activities. In England and Wales IPPC operates under the Pollution Prevention and Control (England & Wales) Regulations 2000 Similar regulations are in place in Scotland and Northern Ireland. In Scotland IPPC operates under the Pollution Prevention and Control (Scotland) Regulations 2000. In Northern Ireland, IPPC operates under the Pollution Prevention and Control Regulations (Northern Ireland) 2003 (Reference 1). These Regulations were made under the Pollution Prevention and Control (PPC) Act 1999, and implement the EC Directive 96/61 on IPPC. The Regulatory Regime applies to many industrial sectors, including the intensive farming of pigs and poultry. The threshold for such farms to be regulated under IPPC is:

- 40,000 places for poultry; or
- 2,000 places for production pigs (over 30kg); or
- 750 places for sows.

Regulation is achieved through the issue of a permit from the Environment Agency in England and Wales, the Scottish Environment Protection Agency (SEPA) in Scotland and the Environment and Heritage Service (NIEHS) in Northern Ireland. A permit covers all aspects of the operation of the farm as defined by the installation boundary. To gain a permit, Operators have to show that they have systematically developed proposals to apply the 'Best Available Techniques' (BAT) and meet other requirements for environmental protection, taking account of relevant local factors.

The Environment Agency, SEPA and NIEHS (referred to as the Agencies) have developed a simplified permitting approach for the farming sector, through the development of Standard Farming Installation Rules, the Scottish Standard Farming Installation Rules and the Standard Farming Installation Rules and Guidance (NI) respectively (Reference 2). These rules define BAT for the farming sector.

Aspects of noise management are integrated throughout the Standard Farming Installation Rules, but in some cases site-specific measures will be needed, and these must be identified in a Noise Management Plan.

The Regulations do NOT relate to occupational exposure to noise – only to noise as an environmental pollutant, i.e. beyond the installation boundary.

1.2 Who should use this guidance?

This guidance is specifically targeted at the pig and poultry sector, and includes many of the principles applied to all sectors regulated under IPPC referred to in Horizontal Guidance for noise (H3, Reference 3). The Agencies will refer to this Horizontal Guidance in determining conditions for noise at pig and poultry installations.

In England, Wales and Northern Ireland, you should use this guidance if:

- you answered 'yes' to question B2.9 on the application form, i.e. sensitive receptors are located within 400m of the installation; and/or
- the installation has a history of substantiated noise-related complaints within the last 3 years; and/or
- you are in the process of planning for a new installation, or extending an existing one – this guidance will provide information on best practice and impact assessment requirements.

In Scotland you should use this guidance for all applications.

1.3 How you should use this guidance

You should use this guidance in conjunction with the Standard Farming Installation Rules.

Section 2 provides guidance on the sources of noise, and some of the measures to minimise emissions.

Section 3 provides guidance on writing a noise management plan. This section should be used if you have sensitive receptors within 400m of the installation and/or the installation has a history of noise related complaints. You will need to consider some of the measures in section 2 in your noise management plan. In Scotland this section should be used for all applications.

Section 4 provides guidance on carrying out a noise impact assessment. This section should be used if you are in the process of planning for a new installation, or extending a new one and may be needed if you are applying for a permit for an existing installation. A noise impact assessment will often be required as part of the process of applying for planning permission. You may need to consult a noise specialist to complete the assessment, and should ask them to cover the points in this guidance.

1.4 What standards of noise control are expected?

1.4.1 What standard of control are we aiming for?

In the case of noise, pollution is considered in terms of causing environmental harm or offence to the sense of hearing, i.e. causing annoyance to people who live in the area or are there for some other reason, through exposure to noise.

The point at which 'pollution' in the form of offence to the sense of hearing is occurring, is taken to be the point at which there is 'reasonable cause for annoyance'.

The need to "prevent" noise emissions is, in certain situations, less relevant for noise than for some other pollutants. Noise does not accumulate on the installation or in the environment permanently like some pollutants. In other words, when the installation ceases operations, the original noise climate may be restored. The aim should be, wherever feasible, to ensure that proposed additions to existing plant or activities do not add to the overall ambient level. In some cases, however, this may be unreasonable or beyond BAT.

The aim of the legislation is to achieve 'no reasonable cause for annoyance' to persons beyond the boundary of the installation, i.e. sensitive receptors, as far as is possible using BAT. For many installations environmental noise will not be an issue but for others it will need to be considered and controlled.

Note: The PPC Regulations also treat vibration as a pollutant, but if there is a vibration problem specialist advice should be sought and discussions held with the Agency Officer.

1.4.2 Who are sensitive receptors?

Sensitive receptors are primarily people in houses, hospitals, schools and commercial premises, but can include people frequenting open spaces, for example, parkland. The person in control of the installation would not normally be considered to be a sensitive receptor. Persons who live in close proximity in tied housing may be sensitive receptors (consider the families of the farm workers). If such properties are rented to people who do not work on the installation, the tenants are likely to be sensitive receptors, even if they rent with the knowledge that there is a noise source nearby. Sometimes habitats, such as Special Protection Areas, may be considered as sensitive receptors, in which case detailed advice should be sought from the Agency Officer

In any particular situation however, the interpretation of the courts will be the decisive factor.

1.4.3 What is "no reasonable cause for annoyance"?

The amount of annoyance should not be assessed only by means of the number of complaints. Often, in rural areas few people are exposed to noise from intensive installations, but they are entitled to the same reasonable expectations of a satisfactory environmental noise climate as those living in a more populated area.

The legislation requires that the amount of time and money that you spend on taking measures to reduce noise should be in proportion to the annoyance caused or potential to cause annoyance. Good practice should be adhered to at all times by all installations, but if a large number of complaints are received, or the installation is close to a built up area then you may have to expend more effort to

reduce noise. BAT covers management techniques (i.e. Best Practice), site design and layout as well as specific noise control measures such as barriers and silencers to control noise.

It should be remembered that it is not only the level of noise that can cause annoyance, but sometimes the source itself or the time of day or night, as illustrated in the examples below:

- feed deliveries;
- animal noises such as pigs squealing;
- the time the noise occurs (noise is often more annoying at night or during leisure times);
- clattering or banging;
- tonal noise, with distinctive notes, hums or whines from vacuum pumps, fans, motors etc.;
- noise that is perceived as unnecessary.

1.4.4 Standards for new installations

New intensive livestock installations will have to use BAT from the outset. Indicative sector BAT may help operators understand the requirements. As part of the planning process it is likely that an applicant will be required to undertake a noise impact assessment (section 4) to predict the noise emissions.

The acceptability, or otherwise, of noise from the installation will be influenced by the existing noise climate and as the Standard Farming Installation Rules state, the requirements and conditions for noise will be site specific so it is not possible to be prescriptive on acceptable numerical values. However, a British Standard BS 4142:1997 (Reference 4) may be appropriate to offer guidance on the likelihood of complaints arising.

1.4.5 Standards for existing installations

Existing installations will be allowed an appropriate timescale to upgrade where meeting BAT will involve capital expenditure, but will be expected to adopt good management practices from the date of being granted a permit. Any required changes in operation will be identified in an improvement plan set by the Agencies. This improvement plan may require the operator to investigate alternative techniques, provide recommendations and set timescales for implementation.

1.5 Information requirements

When producing a noise management plan you must provide information on the:

- techniques employed to control noise;
- emissions of noise from the installation;
- assessment of the impact of those emissions on the environmental receptors.

The level of detail supplied in the application should reflect the level of risk. The higher the risk of causing annoyance or other environmental impact, the more detail is required and the higher the expectation of a proactive approach to noise control.

Where the activities are inherently quiet and there is no history of noise nuisance, information requirements will be minimal.

1.6 Time definitions

In this guidance, the following time definitions have been used:

Day time	0700 - 2300
Night time	2300 - 0700
Working week	Monday to Friday and Saturday morning but exclusive of public and bank holidays

1.7 Complaints

Noise complaints relating to an installation may be received directly by the Agency or via the Environmental Health department of a Local Authority. If the installation operator holds a PPC permit, the Agency will investigate the complaint and if there is found to be a breach of the permit conditions, a notice may be served, requiring the operator to address the issues or proceedings may be instituted. If the complaint relates to activities not covered by the permit, the matter will be dealt with by the Local Authority.

2 Management of noise

2.1 General aspects of noise management

2.1.1 Overview

This section gives an overview of some of the principles of good practice for noise reduction and control. Not all aspects will apply to all installations and some installations will have arrangements, which are not described here. You will need to pick out those elements, which most closely match your circumstances and add in any other sources or problems. Although this guidance note specifically addresses noise, many of the solutions to noise issues will also help control other emissions from the installation. In some circumstances noise control may compromise other issues such as animal health and welfare and in these situations a considered approach will need to be adopted. Care must also be taken to ensure that there is no conflict with guidance designed to protect health and safety, prevent water pollution or other impacts on the local environment.

Two reports prepared for MAFF (now Defra) in 1999 offer guidance on the control of noise on pig and poultry installations (References 5 and 6).

Many noise problems can be prevented by good management, consideration and ensuring a good standard of maintenance of plant and equipment. The hierarchy for control should be to:

1. ***Prevent*** generation of noise at source by good design and maintenance.
2. ***Minimise or contain noise at source*** by observing good operational techniques and management practice.
3. ***Increase the distance*** between the source and receiver.
4. ***Use physical barriers or enclosures*** to prevent transmission to sensitive receptors.
5. ***Sympathetic timing and control*** of unavoidably noisy operations.

2.1.2 Prevention and minimisation

Good design and management can prevent the generation of noise. This can include:

- selection of plant and equipment that produce less noise;
- suitable timing of noisy operations;
- appropriate siting of noisy operations and noise sources at the design stage.

It is far easier to deal with potential noise problems at the design stage of a new installation or an extension or alteration to an existing one. When new equipment is purchased it is often more effective to purchase quieter equipment, that is slightly more expensive, rather than have to modify it at a later date. Many manufacturers now provide detailed noise information on their products.

2.1.3 Increase the distance between the source and receiver

Care should be taken to site noisy activities away from noise-sensitive areas. The day to day location of equipment and vehicles on the installation and the way in which they are used can play a major part in reducing noise levels. Some noise sources are directional, such as fans or engine exhausts, and simply turning the noisy aspect away from the sensitive receptors can noticeably reduce the noise levels.

2.1.4 Acoustic barriers

The following are examples of good acoustic barriers:

- buildings on site;
- earth banks;
- heavy and solid close boarded wooden fencing, masonry walls;
- straw bales can provide good temporary noise barriers provided there is no fire risk.

All barriers should be high enough to break the line of sight and extend beyond the noise source so that the noise does not "wrap" around the ends and top of the barrier. Vegetation barriers (trees and hedges) are often thought to provide a degree of noise reduction if planted between the source and local dwellings. However in practical terms the reduction is marginal and barely noticeable, if at all, unless the planting is very thick and many tens of metres wide. The psychological effect of removing the noise source from view probably has a much greater overall effect on the perception of the noise rather than the actual noise reduction offered.

2.1.5 Complaints procedure

A procedure should be established for verifying and responding to complaints about noise. The existence of a complaints procedure can help you to:

- improve relationships with neighbours;
- identify sources of noise and prevent future problems.

Prompt action in response to complaints, including a discussion with an explanation to the complainant, is very important and may stop issues escalating and further complaints being made. It should be remembered that when people are woken at night, for example, by something that they believe to be avoidable (whether it is or not) they might be short-tempered. A quick and sympathetic response to complaints can often defuse a situation to the benefit of the complainant and the operator.

A suggested form for recording complaint details is given below.

The complaints record form should be tailored to the specific installation, location and neighbours, but most will have the following elements:

1) The form should be completed, signed and dated by a 'responsible person'.

2) The name, address and telephone number should be given by the caller.

3) Each complaint should be given a reference number.

4) The caller should be asked to give details of:
   - the time the noise was heard;
   - how long it lasted;
   - how often it occurs;
   - the nature of the noise – what sort of noise was it? What did it sound like?

5) The 'responsible person' should then, if possible, make a note of:
   - the weather conditions at the time the noise was detected – usually wind direction and a note of the conditions (light wind, no wind, strong breeze, or use the Beaufort scale in Table 2.1, clear, full cloud cover etc); and

- the activity on the installation at the time the noise was detected, particularly anything unusual.

Table 2.1 Beaufort scale

Force	Description	Observation	km/hr
0	Calm	Smoke rises vertically	0
1	Light air	Direction of wind shown by smoke drift, but not wind vane	1-5
2	Light breeze	Wind felt on face; leaves rustle, ordinary vane moved by wind	6-11
3	Gentle breeze	Leaves and small twigs in constant motion	12-19
4	Moderate breeze	Raises dust and loose paper; small branches are moved	20-29
5	Fresh breeze	Small trees in leaf begin to sway, small branches are moved	30-39
6	Strong breeze	Large branches in motion; umbrellas used with difficulty	40-50
7	Near gale	Whole trees in motion; pressure felt when walking against wind	51-61

6) The reason for the complaint should be investigated and a note of the findings added to the log – this need not be complicated but should be sufficient to identify any activity that may have led to the complaint.

7) The caller should then be contacted with an explanation. It often helps if you can show that you have taken some kind of action to minimise the noise in future.

Following complaints it may be appropriate to review the Noise Management Plan, if one exists.

The complaints record relating to activities covered by the permit, should be made available to the Agency on request.

Typical form for the recording of a noise complaint

Noise Complaint Report Form		
Installation to which complaint relates:	**Date recorded:**	**Reference number:**

Name and address of caller:	
Tel no. of caller:	
Location of caller in relation to installation:	
Time and date of complaint:	
Date, time and duration of offending noise:	
Caller's description of noise (e.g., hiss, hum, rumble, continuous, intermittent, vehicle noise, machinery):	
Has the caller any other comments about the offending noise?	
Weather conditions (e.g. dry, rain, fog, snow):	
Wind strength and direction (e.g. light, steady, strong, gusting) or use Beaufort scale (see Table 2.1):	
Any other previous complaints relating to this noise?	
Any other relevant information:	
Potential noise sources that could give rise to the complaint:	
Operating conditions at the time Offending noise occurred – e.g. deliveries, feeding, use of machinery etc:	
Follow-up Date and time caller contacted:	
Action taken:	
Amendment requirement to noise management plan:	

Form completed by:		Signed:	

2.2 Noise management in intensive livestock installations

This section identifies the more common noise problems arising on installations that have the potential to affect people nearby, and offers suggestions for preventing or reducing noise in each case. Not all of the sub-sections will apply to all installations and some will have noise sources not discussed below. These aspects will be determined on a site-specific basis.

In many cases restricting noisy operations to reasonable times may be sufficient to overcome environmental noise problems. Reasonable times are generally considered to be the normal working day (see section 1.6), but it is understood that certain activities may have to be undertaken outside the normal working day, in which case additional measures may be required in order to achieve a satisfactory noise climate. The noise emitted by activities such as feed milling can be reduced considerably by enclosure within insulated buildings. It should be remembered however that the effectiveness of any form of building or enclosure as a means of reducing noise can be severely compromised by leaving doors, windows or unguarded vents open.

2.2.1 Good operational practices to reduce noise

Problem	Actions to prevent or minimise noise
Feed, fuel and other deliveries	• **Location** Feed bins should be located so that, as far as possible, delivery movements and handling on site are reduced. Their location should not be in conflict with biosecurity arrangements. Delivery and collection points for feed, fuel, other materials, livestock, slurry and other waste should be sited, as far as is practicable, to benefit from the noise screening effects of local barriers, such as the lie of the land and buildings, to achieve optimum benefit. • **Operation** Staff, contractors and visitors should be instructed not to raise voices or play radios unnecessarily at night. Pagers or mobile phones may need to be considered for on site communications. Hard materials should be lowered on to hard surfaces rather than dropped. The drop height of any bulk material should be reduced as much as possible. • **Timing of operations** Delivery and collection of feed, fuel, other materials, livestock, slurry and other wastes should take place at reasonable times, i.e. during the normal working day, as far as is practicable. Drivers should comply with any speed limits on site and avoid taking empty vehicles over rough ground wherever possible.
Ventilation fans	• **Design** Efficient design of ventilation fans will minimise the number needed per building. The use of sheet metal or other similar materials of construction, which may vibrate, should be avoided, where practicable. Use fewer, larger fans operating at lower speeds or variable speed fans that may produce less noise than smaller high speed fans. N.B Although this is an effective means of noise control, variable speed fans are less effective at odour dispersion so a balance needs to be achieved. Minimising the resistance at the inflow and outflow to avoid placing unnecessary loading on each fan. Fan outlet cowls and stacks can provide noise reduction but, if too small, can increase the pressure drop by restricting airflow.

	• **Location** Orientate noisy equipment in one direction so that noise is directed away from noise-sensitive areas. Locate fans at low level, i.e. on sidewalls, rather than at rooftop level as any noise emitted will be more readily blocked by other buildings, local topography etc. N.B. Although this is an effective means of noise control, variable speed fans are much less effective at odour dispersion so a balance needs to be achieved. Use acoustic barriers to absorb the noise. • **Operation** The use of inlet silencers may be suitable for fan pressurised ventilation systems. Increase the absorption capacity of a building by increasing the presence of rough surfaces such as straw bales inside to absorb sound. • **Timing of operations** Poultry – a small number of fans operating continuously is preferable to a larger number, switching off and on, particularly at night. However, a number of fans running continuously may not give the correct minimum ventilation required by the operator. • **Inspection and maintenance** Fans should be maintained and inspected in accordance with the manufacturers or suppliers instructions. Out of balance or worn fans can produce high noise levels with annoying frequencies or tones. • **ACNV (Automatically Controlled Natural Ventilation)** ACNV is an alternative method of ventilation but its use may be restricted by welfare or production factors and may be less effective at odour dispersion, so a balance needs to be achieved. Its effectiveness can be affected by its location, in particular being sheltered by other buildings, hedges etc. such that it is not always a viable alternative to fan-assisted ventilation.
Vehicles and machinery on site	**You should ensure that you comply with Health and Safety requirements when considering how to reduce noise from vehicles and machinery.** • **Design** Reduce the need for scraping by minimising the area of yard contaminated when removing manure and litter from buildings. Pressure washers and compressors may need to be placed inside buildings, purpose built or proprietary acoustic enclosures during use. Always consult with the manufacturer or supplier before enclosing any plant since suitable ventilation may be required to prevent overheating. • **Location** Noisy machinery and operations should be sited as far as possible from noise sensitive areas. Loading/offloading points can be screened by the use of natural barriers (buildings, fences) or temporary screens such as straw bales. Generators should be placed within an acoustic enclosure or sited behind an acoustic barrier. Suitable insulation can be provided as part of a packaged generator set or by the use of an acoustically insulated building. Consideration should be given to the frequency of use, the level of risk

	involved and the cost implication. • **Operation** Care should be taken to prevent unnecessary movements of trailers and loaders. Avoid idling of machines between work periods and revving of engines. Catching should be organised to minimise manoeuvring of forklift trucks etc. outside of buildings. Staff, contractors and visitors should be instructed not to raise voices or play radios unnecessarily at night. Pagers or mobile phones may need to be considered for on site communications. • **Timing of operations** If powered equipment is used, cleaning out and removal of manure and litter should take place at reasonable times, where practicable. • **Inspection and maintenance** Site roads/tracks should be maintained in a state of good repair to reduce any noise from the passage of vehicles. Ensure loaders and tractors etc. are well maintained especially exhaust systems and silencers. Reduce noise caused by vibrating machinery with rotating parts by proper servicing, balancing and regular maintenance. Lack of maintenance may lead to overheating, resulting in engine covers having to be left open. Reduce noise caused by friction in conveyor rollers, trolleys and other machines by proper lubrication and regular maintenance. Testing of emergency generators and alarms should be carried out during the daytime of the normal working week and preferably between 0900 and 1700. The noise level emitted by the alarms must not exceed that required to alert persons working within the site. However, to ensure the response given by call centres is 100%, alarms may also be tested at weekends. The disturbance caused by their testing can be minimised by testing at the same time and day of the week or month etc. If there are problems local residents should be consulted and timings of testing discussed with them. Testing should be in accordance with manufacturer or supplier instructions.
Feeding equipment	• **Design** Auger systems are usually the quietest and most energy efficient method of transporting feed mechanically. • **Operation** Conveyors or augers should not normally be operated when they are empty. Pipe and/or conveyor runs should be kept as short as possible. Pneumatic transfer systems can be a source of high frequency noise. It is often preferable to use a higher capacity system running at a lower speed than to use a low capacity system at high speed. • **Timing of operations** Feed mills should be operated at reasonable times. Operate hammer mills and pneumatic conveyors when background noises are highest to minimise effect.

	• **Inspection and maintenance** Maintain equipment to ensure equipment is operating to optimum standards.
Manure and slurry handling	• **Design** External runs should be constructed so that they are protected from the weather and to prevent noise generation. Pneumatic conveyor systems should be designed to minimise the length of the run and number of bends. • **Location** Conveyors for manure should be contained within a suitably constructed enclosure appropriately designed to reduce noise emissions. • **Timing of operations** Operate equipment and vehicles at reasonable times, whenever possible. • **Inspection and maintenance** Maintain equipment to ensure equipment is operating to optimum standards.
Animal noise	• **Feeding pigs** Use passive feeding techniques where appropriate, to minimise squealing in anticipation of feeding. Reduce noise produced in response to a stimulus prior to feeding by direct delivery of feed. • **Stocking and destocking between cycles** The timing and methods used in stocking and destocking of animals should be carefully considered to minimise any noise produced.

3 Writing a noise management plan

You will need to produce a noise management plan if:

- You answered 'yes' to question B2.9 on the application form, i.e. sensitive receptors are located within 400m of the installation or the installation has a history of noise-related complaints; or
- You are making your application in Scotland.

3.1 How to write a noise management plan

To produce a noise management plan you should do the following:

1. Identify the sources of noise and/or complaint on your installation

Carry out a **subjective assessment 'walk around'** to identify where noises are coming from.

This type of assessment does not involve measuring or predicting noise levels - instead it relies upon a subjective assessment of whether the noise is audible or not, how loud it sounds and if it has any noticeable characteristics. However, operators should be aware of the limitations of a subjective methodology given the subjective nature of when noise becomes annoying.

This assessment can be carried out at specific points around the perimeter of the installation or close to the sensitive receptors, during a typical day, evening and night. There are two aspects of this assessment:

1) Assess individual noisy events when they take place, such as deliveries, feeding time or manure scraping; and
2) Longer continuous noises such as fans, generators etc. that run for prolonged periods. These long term noise sources should be assessed when they are likely to be more intrusive.

Unless the distances are more than a few hundred metres the influence of the weather on noise levels is quite limited, but the weather itself can affect the sound levels in an area, by blowing in trees and hedges, and this could result in a false impression of the impact being formed. Hence the assessment should be undertaken when:

- Any busy roads nearby are dry since wet roads are noisier than dry roads;
- It should not take place in bad weather conditions such as rain, fog, snow etc.;
- There should be no temperature inversions (i.e. still conditions, often with mist forming in layers);
- The wind speed and direction should be noted, and ideally the force should be less than Force 2 of the Beaufort Scale (see Table 2.1).

You should spend at least 3 to 5 minutes at the monitoring point(s) chosen and, if the noise is audible you should consider which of the following best describes the volume of the noise when localised or intermittent noise sources are quiet (e.g. no passing cars):

- Inaudible
- Barely audible
- Clearly audible
- Loud and intrusive

You should also consider whether it is has any characteristics that may be annoying, such as whines, bangs or clatters, and animals squealing. Careful thought must be given to this aspect since the nature of the noise may be disturbing, even though the volume may be quite low.

A description of the noise should be recorded, together with its intensity and characteristics. The date and the precise monitoring location as well as the name of the person undertaking the assessment should be recorded.

2. Look at the noise sources and corrective actions discussed in Section 2

Note down those sources or activities which **do** cause a problem on your installation and the types of corrective actions that you will need to highlight in your noise management plan.

3. Transfer the relevant information into the Noise Management Plan template in Section 3.2

- Identify each noise problem/source in the 'Noise problem' column.
- Select the appropriate corrective action from Section 2 for each problem. Adapt it to your particular circumstances – what would you do on your installation to achieve the same outcome?
- Identify the corrective actions in the 'Actions' column.

Ideally, you should discuss your proposed plan with the Agency Officer before you send it in together with your Permit application. Where you already have a Permit and need a noise management plan to deal with specific problems, you should discuss it with the Agency Officer and then send a copy to the Agency.

You will be expected to follow the actions you have set out in the plan.
If there are complaints and you can show that you have complied with these actions then the Plan may need to be revised. You should start again at Point 1, above and discuss this with the Agency officer.

If you have not complied with the Plan and complaints are received, then you may be liable to enforcement action.

If you cannot control the noise by use of good practice then the Agency may require more stringent measures to be used. It is therefore in your interest to ensure that the Noise Management Plan is adhered to by all those employed at the installation as well as visitors, contractors etc.

3.2 Noise management plan example and template

This section contains a blank table (Noise Management Plan Template) on which to note down the installation-specific actions to be taken. The columns should be completed using the guidance given in Section 3.1. You should adjust this as necessary to make it relevant to the noise problems on your particular installation. Allocate number references to each problem and put these into the left-hand column.

Where specific actions are required, such as maintenance it should also be recorded in the noise management plan.

An example of the type of information used to complete the template is given in Table 3.1.

Table 3.1 Example Noise Mangement Plan Template

No ref	Noise problem	Actions you will take to prevent or minimise the noise	Completion date
1	Rattling and clanking from operation of conveyor	Regular maintenance and proper lubrication. Minimise empty conveyor running.	
2	Rearing of broiler chickens in ventilated houses	Fans maintained and inspected to manufacturers instructions. Inspect roof on House No.5 and fasten down metal sheeting. Review once completed.	
3	Early morning loading of pigs for transport	Load animals behind machinery store to act as a barrier between animals and New Village Cottages. Instruct contractors not to whistle and shout.	
4	Bird catching	All handlers trained to Assured Chicken Production standards to minimise bird stress and noise.	
5	Cleaning of animal housing	In reasonable time only. Notice of manure movements given to neighbours 1 week in advance. Litter is moved from housing direct to trailers in the doorways of the buildings and removed immediately from site, to minimise vehicle movements.	
6	Emergency generator	Test time Tuesday 11am. Timing agreed with neighbours. If emergency generation is required, Neighbours will be notified within x hours.	
7	Bird feeding	The existing conveyor system to be replaced by auger system by MM/YYYY.	
8	Delivery of feed	No deliveries outside 7pm. Feed company X has fitted silencers to all vehicles for transfer to feed bins.	
9	Delivery of fuel	No deliveries outside 6pm.	
10	Other (specify) Advice for staff, contractors and visitors	Advice notices in the site office covering the points above. Instruction not to shout unnecessarily. Instruction to turn off engines while not in use.	

Noise Management Plan Template

No ref	Noise problem	Actions you will take to prevent or minimise the noise	Completion date

4 Full noise impact assessment

4.1 Overview

This section describes the options for carrying out a full noise impact assessment. It also describes the information that should be contained in the impact assessment report. You may need to consult a noise expert in order to carry out a noise impact assessment.

You may need to carry out a full noise impact assessment if:

- you are applying for a Permit for an existing unit and have answered yes to any part of Question B2.9 of the PPC permit application form; and
- a subjective "walk round" assessment suggests that a noise problem exists or is likely to occur.

You will need to carry out a full noise impact assessment if:

- you are applying for a Permit for a new unit or you are applying for a variation of a Permit for an extension to an existing unit and there are sensitive receptors which may be affected; or
- you have failed to control noise sufficiently using housekeeping measures and consequently other steps are needed to reduce the noise emissions.

The closer the sensitive receptors the greater is the likelihood that a full noise impact assessment will be needed. Additionally, in the case of extensions to existing installations, the complaint case histories may influence the need for an impact assessment.

It should be noted that an impact assessment which has been carried out for planning purposes may not contain sufficient information for an IPPC application. You should check with the Agency Officer.

In all cases you will be expected to regularly (e.g. monthly, quarterly – depending on the risk of an off site impact) walk around the installation perimeter and at, or near, the sensitive receptors to listen if the noise from the installation can be heard. This is a 'subjective assessment' as described in Section 3.1. People who are generating the noise through their own operations often become tolerant to it so it is often helpful to get someone who does not spend all their time at the installation to do this.

There are two main methods in carrying out a noise impact assessment:

- measuring emissions;
- predicting emissions.

The method chosen depends on whether it is an existing installation, an extension to an existing installation or a proposal for a new installation.

A full assessment will almost certainly have to be carried out by a noise expert who is suitably qualified and/or experienced in undertaking and reporting environmental noise assessments.

In the case of an existing installation the noise levels would normally be measured at the most affected sensitive receptors and the measured levels compared to the background levels and recognised standards such as BS 4142:1997. However, in some cases the noise levels may be measured closer to the installation and then the levels at the affected receptors calculated.

In the case of a new installation, or an extension to an existing one then it is more likely that the levels will have to be predicted. The predictions can be based on the noise from the existing installation, manufacturers data or data from a similar installation or a combination of all, or any, of these.

4.1.1 Acoustic terms

dB (decibel)

A decibel is the unit of measurement of sound level. As sound can vary in intensity within the range of human hearing, a logarithmic loudness scale (similar to the Richter scale for earthquake magnitude) is used to keep sound intensity numbers at a manageable level.

Adding together two equal sound sources will increase sound intensity by approximately 3 dB. For example, two feed delivery lorries of a sound intensity level of 92 dB would increase the sound intensity to about 95 dB.

The threshold of hearing is 0dB and 140 dB is the threshold of pain. A change of 10 dB corresponds approximately to halving or doubling the loudness of sound.

dBA

Since the human ear is not equally sensitive to all sound frequencies, noise level measurements are adjusted and given an A-weighting, expressed as the unit dBA. This is used for evaluating continuous or average noise levels.

Typical Noise Levels for Common Sounds (Reference 7)

Noise Level dBA	Common Sounds
0 - 5	Faintest audible sound
18 - 25	TV and sound studio
20 - 30	Quiet library
40 - 45	Quiet office
55 - 60	Conversation
65 - 75	Loud radio
75 - 85	Busy street
90 - 100	Heavy lorry (7m away)
110 - 115	Punch presses
115 - 120	Riveting, boiler shop
140	Jet aircraft taking off 25 m away

Background Noise Level $L_{A90,T}$

Background noise consists of noises present in the environment such as in the table above. The measurement of the overall background noise level, adjusted with an A-weighting in decibels exceeded for 90 per cent of a given time, is expressed as the $L_{A90,T}$. In rural areas, daytime background levels may be between 38 - 42 dB but can fall to below 30 dB during the night.

Equivalent Continuous Noise Level $L_{Aeq,T}$

Some noises vary in their intensity and how long they last. The equivalent continuous noise level, measured in $L_{Aeq,T}$, is a measure of the average amount of noise measured within a specified time period. It can be measured directly with an integrating sound level meter over time ranges from one second to 24 hours.

4.2 Measuring emissions

Noise measurement and prediction is a complex matter and further guidance can be found in IPPC H3 (Reference 3) but invariably will have to be undertaken by a suitable qualified and experienced noise expert. All measurements and assessment should be carried out in accordance with BS 4142:1997 Method for rating industrial noise affecting mixed residential and industrial areas (Reference 4).

Section 10 of the standard details the information that shall be reported for a full assessment. This includes:

- the source(s) under investigation;
- subjective impressions;
- measurement locations;
- sound level measuring instruments used;
- field calibration details;
- weather conditions;
- date(s) and time(s);

- specific noise level(s);
- measurement time intervals;
- reference time intervals;
- rating level;
- background noise level;
- excess of rating level over background.

The standard requires that daytime assessments are based on the $L_{Aeq,T}$ from the noise source over a period of 1 hour, while at night-time an assessment period of 5 minutes is specified.

4.3 Predicting emissions

When it is not possible to measure emissions, perhaps because the impact assessment relates to a proposed installation, it is possible to predict emissions by using:

- measurements taken at a similar unit (similarity must be justified);
- manufacturer's data; or
- typical noise levels for example References 5 and 6 reproduced below:

Example Noise Levels on Pig Units (Reference 5)

Noise Source	Sound Pressure Level dBA	Equivalent Continuous Noise L_{eq} dBA
*Pig fattening house: *inside building*	93	87
*Sow accommodation: *hand feeding (inside building)*	99	91
*Normal pig building environment: *inside building*	67	
*Mill Mix Unit: *inside building*	90	85
outside building	63	
*Pig building ventilation fans (*outside building)*	43	
Feed delivery lorry (5 metres from side)	92	
Power washer (5 metres from side of pump)	88	
Propane gas delivery lorry (5 metres from side)	82	

* The time period used and the distance the source is measured from follow the requirements of BS 4142:1997.
Reference to 'Pig fattening house' is now more commonly known as 'Pig finishing accommodation'.
N.B. These data were collected in 1999 and may not be representative of current noise levels

Example Noise Levels on Poultry Units (Reference 6)

Noise Source	Sound Pressure Level dBA	Equivalent Continuous Noise L_{eq}dBA
*Catching and handling broilers		57-60
*Mill Mix Unit: *Inside building*	90	85
Outside building	63	
Stock Ventilation Fans	43	
Feed delivery lorry (5 metres from side)	92	
Power washer (5 metres from side of pump)	88	

* The time period used and the distance the source is measured from follow the requirements of BS 4142:1997.
N.B. These data were collected in 1999 and may not be representative of current noise levels

4.4 Interpretation of noise–level difference

The likelihood of complaints can be assessed by subtracting the measured background level from the noise source level to give a 'difference' rating. The greater the difference, the greater the likelihood of complaints:

- a difference of around + 10 dB or more indicates that complaints are likely;
- a difference of around + 5 dB is of marginal significance;
- a difference of below - 10 dB is a positive indication that complaints are unlikely.

4.5 Noise impact assessment reporting

A report, where required, should be completed once the full noise impact assessment has been completed.

4.5.1 Overview

The following is a summary of good practice in terms of reporting protocol and should allow confirmation that the scope and conduct of the work has been competently handled and reflects the variability in noise emissions.

4.5.2 What should a report cover?

Each assessment will be different and installation-specific but there are a number of common features, which should be covered in a well-planned and executed survey. Detailed information is available in IPPC H3 (Reference 3).

Unless the assessment is deliberately targeted at specific events only, it is usual to consider both 'normal' operation and also 'worst case'. When carrying out an assessment to predict the impact of a new installation or an extension to an existing one it is important to make sure that these particularly noisy operations are included.

The report may also make recommendations as to the possible measures that could be taken to achieve BAT, both in terms of housekeeping and other management practices, and options for noise reduction by the addition of end-of-line abatement equipment.

The aspects which should be addressed during the survey, and reflected in the final report, can be broadly categorised as:

- summary of findings;
- a description of the process, its throughput and location;
- a statement of the objectives of the survey;

- a description of the methodology used for sampling and analysis;
- a description of the installation-based work actually undertaken;
- monitoring results;
- interpretation of the results and conclusions drawn;
- recommendations and discussion.

For each aspect, the following would be expected:

i) Summary of findings

A summary of the report.

ii) Process description and 'scene-setting'

The following should be included, as appropriate:

- The location of the installation in relation to the nearest sensitive sites (usually dwellings).
- A diagram of the layout and/or map showing the relative positions of the animal housing and the nearest residential houses.
- A description of the process - including the number of animals, and the techniques used to minimise noise. A description of the nature of the buildings, the ventilation system or other operation such as milling should be given, if appropriate.
- A description of the nature of the noise problem and the typical rate of occurrence.
- Complaint history - numbers, quantity, duration, frequency, any pattern or trends.
- The location and nature of any other potential noise sources in the locality, which may affect measurements, such as a busy nearby road.
- A description of any work previously undertaken with respect to the noise issue - perhaps previous survey work or actions taken to mitigate noise and the success or failure of such measures.

iii) A statement of the objectives of the survey

iv) A description of the methodology used for sampling and analysis

A description of the main features of any standards or other methodologies used. Where sound level measurement is undertaken, the guidance given in the BS 4142:1997 (Reference 4), should be followed and all departures from the procedures described should be justified and recorded.

- a description of the equipment used for sampling and analysis;
- an estimate of error associated with both sampling and analysis.

v) A description of the activities going on when the samples were taken

It is usual to consider 'worst case' and normal operation when carrying out a noise impact assessment. This will entail taking samples at an appropriate time relative to the work being undertaken to account to any variation in emissions in order to avoid 'averaging' the peaks.

The report should detail:

- sampling locations;
- sampling times;
- an explanation of why the particular sampling points and sampling times were chosen;
- process activities whilst the work was being undertaken;
- weather conditions on the day of the survey and wind direction, and strength.

vi) Monitoring results

- raw data should be given - lack of raw data prevents checking or validation of the scope of the assumptions made;
- time elapsed between sampling and assessment;
- any deviations from standard analytical/assessment methods.

vii) Interpretation of the results and conclusions drawn

- A description of the data that was input into the model to account for topography and buildings, meteorology etc. State the origin of the meteorological data obtained and which area it relates to and why it is applicable to the particular assessment. (Wind directions given by met stations would generally relate to open land). Care is needed in applying the frequencies directly to mixed terrain, hills, valleys etc.
- Any features of the local topography which are likely to have an effect on the noise levels.
- A statement of any assumptions that have been made with respect to predictions used in place of sampling.
- Maps, figures and contour plots used to illustrate the extent of noise impact, including identification of specific sensitive receptors.

viii) Recommendations and discussion

This will obviously be strongly influenced by the nature and purpose of the survey and may cover:

- an estimate of the likely impact of current or predicted emissions on sensitive receptors;
- an estimate of the amount by which emissions will need to be reduced to avoid causing annoyance;
- suggested changes to activities or buildings;
- relevant control technology and costs if available;
- measures to be employed to monitor the effectiveness of any changes made.

The above is not exhaustive but should be provided as a minimum (where relevant to the purpose of the survey) by a competent expert or survey team.

The completed Noise Impact Assessment report should be submitted to the Environment Agency as part of the supporting documentation to the permit application.

References

1. The Pollution Prevention and Control (England and Wales) Regulations 2000. The Stationery Office ISBN 0 11 099621 6.

   The Pollution Prevention and Control (Scotland) Regulations 2000. The Stationery Office ISBN 0 11 059467 3.

   The Pollution Prevention and Control Regulations (Northern Ireland) 2003. The Stationery Office ISBN 0 337 94832 1.

2. IPPC Standard Farming Installation Rules and Guidance, Version 4, June 2005, Environment Agency.

   Standard Farming Installation Rules for Pig and Poultry PPC Installations. Version 1.1, February 2001, Scottish Environment Protection Agency.

   Standard Farming Installation Rules and Guidance, Version 1, April 2003, Northern Ireland Environment and Heritage Service.

3. IPPC Horizontal Guidance for Noise (IPPC H3) Part 1 — Regulation and permitting, Environment Agency, September 2002, ISBN 0 11 310123 6. Part 2 — Noise assessment and control, Environment Agency, September 2002, ISBN 011 310187 2.

4. BS 4142:1997 Method for rating industrial noise affecting mixed residential and industrial areas, BSI ISBN 0 580 28300 3.

5. Metcalfe J. P. 1999. Guidance on the control of noise on pig units. (Guidance produced by ADAS for Defra).

6. Metcalfe J. P. 1999. Guidance on the control of noise on poultry units. (Guidance produced by ADAS for Defra).

7. Noise at Work – Advice for employers. Health and Safety Executive INDG 362.

APPENDIX H

21440 O/A WALLS
5096
HEAT EXCHANGERS
Control Room
109796 O/A BIRD AREA
HIGH VELOCITY EXHAUST FANS
WINDOWS
SIDES: BOX PROFILE POLYESTER COATED STEEL SHEETING.
(COLOUR : TO LOCAL AUTHORITY APPROVAL)
FIBREGLASS INSULATION WITH WHITE STEEL LINER SHEETING.
ROOF: BOX PROFILE POLYESTER COATED STEEL SHEETING.
(COLOUR : TO LOCAL AUTHORITY APPROVAL)
FIBREGLASS INSULATION WITH WHITE STEEL LINER SHEETING.
FEED BINS
109796
WINDOWS
WINDOWS
FEED BINS
GABLE ENDS: BOX PROFILE POLYESTER COATED STEEL SHEETING.
(COLOUR : TO LOCAL AUTHORITY APPROVAL)
FIBREGLASS INSULATION WITH WHITE STEEL LINER SHEETING.
7113
5912
3040
21440
5096
REAR ELEVATION
UNIT-B
HIGH VELOCITY EXHAUST FANS
FRONT ELEVATION