

Environment Agency permitting decisions

Variation

We have decided to issue the variation for Smite Lane Farm operated by Smite Farms Limited.

The permit number is EPR/DP3136DM

The variation number is EPR/DP3136DM/V002

This was applied for and determined as a substantial variation.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection 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

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising responses

Description of the changes introduced by the Variation

This is a substantial variation.

This variation authorises the following changes: The increase of broiler bird places from 230,000 to 460,000, the addition of four new poultry houses and one 1.094MWth biomass boiler. The four new houses (as with the existing) will have high velocity fans and gable end fans, manure will not be stored on site nor spread to operator controlled land, and will operated an all in all out system.

Key Issues

Ammonia emissions

There is one Sites of Special Scientific Interest (SSSI) located within 5 km of the installation and five Local Wildlife Sites (LWS) within 2 km of the installation.

Ammonia assessment - SSSI

The following trigger thresholds have been applied for assessment of SSSIs:

- If 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.
- Where this threshold is exceeded an assessment alone and in combination is required. An in combination assessment will be completed to establish the combined PC for all existing farms identified within 5 km of the application.

Screening using the ammonia screening tool version 4.5 has indicated that the PC for Orston Plaster Pits SSSI is predicted to be less than 20% of the critical level for ammonia emissions/nitrogen deposition/acid deposition therefore it is possible to conclude no damage. The results of the ammonia screening tool version 4.5 are given in the tables below.

Table 1 - Ammonia emissions

Name of SSSI	Ammonia Cle ($\mu\text{g}/\text{m}^3$)	PC ($\mu\text{g}/\text{m}^3$)	PC % critical level
Orston Plaster Pits SSSI	3*	0.443	14.76

*Natural England advised that a Cle of 3 for ammonia should be applied across the Orston Plaster Pits SSSI (NE response email dated 23/11/16)

Table 2 - Nitrogen deposition

Name of SSSI	Critical load kg N/ha/yr [1]	PC kg N/ha/yr	PC % critical load
Orston Plaster Pits SSSI	15	2.303	15.35

Note [1] Critical load values taken from APIS website (www.apis.ac.uk) - 23/11/16

Table 3 - Acid deposition

Name of SSSI	Critical load keq/ha/yr [1]	PC keq/ha/yr	PC % critical load
Orston Plaster Pits SSSI	4.375	0.165	3.77

Note [1] Critical load values taken from APIS website (www.apis.ac.uk) - 23/11/16

No further assessment is required.

Ammonia assessment - LWS

The following trigger thresholds have been applied for the assessment of these sites:

- If the process contribution (PC) is below 100% of the relevant critical level (CL_e) or critical load (CL_o) then the farm can be permitted with no further assessment.

Initial screening using ammonia screening tool version 4.5 has indicated that emissions from Smite Lane Farm will only have a potential impact on the LWS site with a precautionary critical level of 1µg/m³ if they are within 725m of the emission source.

Beyond 725m the PC is less than 1µg/m³ and therefore beyond this distance the PC is insignificant. In this case LWS's Orston Railway, Orston Horse Pasture, Railway Pond, Orston and Orston Quarry and Grasslands are beyond this distance (see Table 4) and therefore screen out for any further assessment.

Table 4 - LWS Assessment

Name of LWS	Distance from site (m)
Orston Railway	1,752
Orston Horse Pasture	1,192
Railway Pond, Orston	1,333
Orston Quarry and Grasslands	1,231
River Smite	638

No further assessment is required for Orston Railway, Orston Horse Pasture, Railway Pond, Orston and Orston Quarry and Grasslands (LWS's). However, further assessment / investigation is required for River Smite (LWS).

With regard to River Smite (LWS), no critical level was applied as the site is designated for aquatic features and therefore no pathway for damage to occur. Therefore no further assessment required.

Industrial Emissions Directive (IED)

The Environmental Permitting (England and Wales) (Amendment) Regulations 2013 were made on the 20 February and came into force on 27 February 2013. These Regulations transpose the requirements of the IED.

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

Groundwater and soil monitoring

As a result of the requirements of the Industrial Emissions Directive, all permits are now required to contain a condition relating to protection of soil, groundwater and groundwater monitoring. However, the Environment Agency's H5 Guidance states **that it is only necessary for the operator to take samples** of soil or groundwater and measure levels of contamination where there is evidence that there is, or could be existing contamination and:

- The environmental risk assessment has identified that the same contaminants are a particular hazard; or
- The environmental risk assessment has identified that the same contaminants are a hazard and the risk assessment has identified a possible pathway to land or groundwater.

H5 Guidance further states that it is **not essential for the Operator** to take samples of soil or groundwater and measure levels of contamination where:

- The environmental risk assessment identifies no hazards to land or groundwater; or
- Where the environmental risk assessment identifies only limited hazards to land and groundwater and there is no reason to believe that there could be historic contamination by those substances that present the hazard; or
- Where the environmental risk assessment identifies hazards to land and groundwater but there is evidence that there is no historic contamination by those substances that pose the hazard.

The Site Condition Report (SCR) for Smite Lane Farm (dated 09/12/17) demonstrates that there are no hazards or likely pathway 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 provided base line reference data for the soil and groundwater at the site at this stage.**

Biomass boiler assessment

The applicant is varying their permit to include an additional 1.094MWth biomass boiler, increasing the number of biomass boilers on site to two. The biomass boilers will have an aggregated thermal input of 2.188MWth.

The Environment Agency has assessed the pollution risks and has concluded that air emissions from small biomass boilers are not likely to pose a significant risk to the environment or human health providing certain conditions are met. Therefore a quantitative assessment of air emissions will not be required for poultry sites where:

- the fuel will be derived from virgin timber, miscanthus or straw, and;
- the biomass boiler appliance and installation meets the technical criteria to be eligible for the Renewable Heat Incentive, and;
 - the aggregate boiler net rated thermal input is less than or equal to 4 MWth, and no individual boiler has a net thermal input greater than 1 MWth, and;
 - the stack height must be a minimum of 5 metres above the ground (where there are buildings within 25 metres the stack height must be greater than 1 metre above the roof level of buildings within 25 metres) and;
- there are no sensitive receptors within 50 metres of the emission point(s).

This is in line with the Environment Agency's document "Air Quality and Modelling Unit C1127a Biomass firing boilers for intensive poultry rearing", an assessment has been undertaken to consider the proposed addition of the biomass boilers.

The Environment Agency risk assessment shows that the biomass boilers do not meet all the above criteria because each of the boilers has a net thermal input greater than 1 MWth. As the biomass boilers do not fully meet the above criteria further assessment is necessary. Further screening has been undertaken using the boiler specifications provided by the operator.

Biomass boiler screening

Table - 5

Parameters	
Flue diameter	0.4m
Stack height (from ground level)	6.5m
Thermal input in MW or kW per hour of each boiler	2 x 1.094 MWth
Adjacent Building heights	4.5m
Flue nominal load temperature in °C	145.7

Exit velocity in m/sec	2.86
NO _x concentration in mg/Nm ³	125
CO concentration in mg/Nm ³	481
PM ₁₀ (dust) concentration in mg/Nm ³	39
O ₂ concentration %	10.5
The Grid reference of the stacks	475806 341507 475834 341455

The Air Quality Monitoring and Assessment Unit (AQMAU) screening tool (version 5.2) has been run for Carbon Monoxide (CO), Nitrogen Dioxide (NO₂) and Particulates (PM₁₀), to assess the emissions' impacts on the receptors at:

- Receptor 1 - Public footpath, 475356 341678 (at 481m away);
- Receptor 2 - Green Acres dwelling, 476823 341377 (at 1025m away);
- Receptor 3 - Orston Hall dwelling, 476816 341180 (at 1062m away).

Sulphur Dioxide (SO₂) has not been assessed due to the boiler fuel being clean woodchip which would contain very little or no sulphur.

Process Contributions (PC)

For NO₂, the short term Air Quality Standard (AQS) is 200 µg/m³ and for long term 40 µg/m³. Process contribution significance thresholds are 10% of the AQS for short term and 1% for long term.

For PM₁₀, the short term AQS is 50 µg/m³ and for long term, 40 µg/m³. Process contribution significance thresholds are 10% of the AQS for short term and 1% for long term.

For CO the short term AQS is 10,000 µg/m³, there is no long term AQS. Process contribution significance threshold is 10% of the AQS for the short term.

The results highlighted in green are process contributions (PCs) that are insignificant as a percentage of the relevant AQS.

Table - 6

Pollutant	Term	PC µg/m ³	AQS µg/m ³	PC %age of AQS
Receptor 1 - Public footpath (475356 341678)				
NO ₂	Short	5.1	200	2.6

NO ₂	Long	0.16	40	0.4
PM ₁₀	Short	0.14	50	0.3
PM ₁₀	Long	0.052	40	0.1
CO	Short	11.7	10,000	0.1
Receptor 2 - Green Acres dwelling (476823 341377)				
NO ₂	Short	3.8	200	1.9
NO ₂	Long	0.10	40	0.3
PM ₁₀	Short	0.10	50	0.2
PM ₁₀	Long	0.033	40	0.1
CO	Short	8.2	10,000	0.1
Receptor 3 - Orston Hall dwelling (476816 341180)				
NO ₂	Short	4.0	200	2
NO ₂	Long	0.093	40	0.2
PM ₁₀	Short	0.090	50	0.2
PM ₁₀	Long	0.030	40	0.1
CO	Short	10.9	10,000	0.1

The PC values for both long term and short term emissions for the parameters assessed above within table 2 are less than 1% (long term) and 10% (short term) respectively of the AQS and therefore screen out from requiring further assessment.

We are satisfied that the emissions from the biomass boilers do not pose a significant risk to the sensitive receptors.

Annex 1: decision checklist

Aspect considered	Justification / Detail	Criteria met
		Yes
Receipt of submission		
Confidential information	A claim for commercial or industrial confidentiality has not been made.	✓
Identifying confidential information	We have not identified information provided as part of the application that we consider to be confidential. The decision was taken in accordance with our guidance on commercial confidentiality.	✓
Consultation		
Scope of consultation	<p>The consultation requirements were identified and implemented. The decision was taken in accordance with our Public Participation Statement and our Working Together Agreements.</p> <p>For this application we consulted the following bodies:</p> <ul style="list-style-type: none"> • Public Health England • Health and Safety Executive • FSA • Planning - Rushcliffe Borough Council • Environmental Health - Rushcliffe Borough Council 	✓
Responses to consultation and web publicising	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility. A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. In accordance with the Environment Agency's Air Quality Technical Advisory Guidance 14: "for combustion plants under 5MW, no	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	habitats assessment is required due to the size of combustion plant". Therefore this proposal is considered acceptable and no further assessment is required.	
Environmental Risk Assessment and operating techniques		
Environmental risk	We have reviewed the operator's assessment of the environmental risk from the facility. The operator's risk assessment is satisfactory. The assessment shows that, applying the conservative criteria in our guidance on Environmental Risk Assessment, all emissions may be categorised as environmentally insignificant. See the key issues for details.	✓
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.</p> <p>The operating techniques are as follows:</p> <ul style="list-style-type: none"> • the fuel is derived from virgin timber, • the biomass boiler appliance and it's installation meets the technical criteria to be eligible for the Renewable Heat Incentive; • the stacks are 1m or more higher than the apex of the adjacent buildings; • Non-leaking drinkers are used; • All houses have a concrete base, insulated and constructed to BAT standards; • Manure is regularly removed and taken off site. <p>The proposed techniques for priorities for control are in line with the benchmark levels contained in the Sector Guidance Note EPR6.09 and we consider them to represent appropriate techniques for the facility. The permit conditions ensure compliance with relevant BREFs.</p>	✓
The permit conditions		
Use of conditions other than those from the template	Based on the information in the application, we consider that we do not need to impose conditions other than those in our permit template, which was developed in consultation with industry having regard to the relevant legislation.	✓
Updating permit conditions	We have updated previous permit conditions to those in the new generic permit template as part of permit consolidation. The new conditions have the same	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
during consolidation	meaning as those in the previous permit(s).The operator has agreed that the new conditions are acceptable.	
Raw materials	We have specified limits and controls on the use of raw materials and fuels.	✓
Incorporating the application	We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process. These descriptions are specified in the Operating Techniques table in the permit.	✓
Operator Competence		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with our guidance on what a competent operator is.	✓
Relevant convictions	The Case Management System has been checked to ensure that all relevant convictions have been declared. No relevant convictions were found.	✓

Annex 2: External Consultation and web publicising responses

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process. (Newspaper advertising is only carried out for certain application types, in line with our guidance.)

Response received 09/03/17
Ground Water & Contaminated Land
Brief summary of issues raised
No issues raised
Summary of actions taken or show how this has been covered
No action

Response received on 16/02/17
Rushcliffe Borough Council (Local Planning Authority)
Brief summary of issues raised
No issues raised
Summary of actions taken or show how this has been covered
No action

Reponses not received

The Health and Safety Executive (HSE), Food Standards Agency (FSA), Environmental Health Department (Rushcliffe Borough Council), Local Planning Authority (Rushcliffe Borough Council) were also consulted; however, consultation responses from these parties were not received.

We did not receive any representations in response to the web publicising.