

**Noise Assessment
For
Deans Foods Ltd
Langstone Farm,
Catbrook,
Chepstow,
Gwent,
NP16 6ND**



NOISE IMPACT ASSESSMENT

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INTRODUCTION

A noise assessment was carried out at Deans Foods poultry site at Langstone Farm, Catbrook, Chepstow, Gwent, NP16 6ND. Typical noise sources at the site include Poultry breeding and fans.

The noise assessment is part of a response to questions from the site manager.

This report presents an assessment of the potential for noise impacts at the nearby houses from the existing use of the site, as observed and measured during recent site surveys. The noise assessment has included the monitoring of existing noise source levels and background noise levels within the vicinity of the site. Measured noise data have then been used to predict noise impacts at these sensitive locations in the context of the results of the baseline noise monitoring exercises.

ASSESSMENT CRITERIA

Noise levels from the site have been used to carry out an assessment of the commercial noise sources. The assessment accounts for noise emissions only from operations within the site boundary.

The method for assessing noise from industrial sources is set out in BS4142: 1997 *'Method for rating industrial noise affecting mixed residential and industrial areas'*. This requires that noise from the industrial noise source(s) concerned (the specific noise) is compared with the background noise level prevailing in the absence of the specific noise. In this case, the industrial noise source can be considered as any noise source related to plant or operations within the development.

Noise from the specific noise source(s) is measured in terms of dB LAeq,t. This is the steady, continuous noise level that is equivalent to the possibly varying noise level measured over a specified time period 't'. Where appropriate, the percentage on-time of the source is taken into account and the noise level is also corrected to allow for tonal and/or impulsive characteristics, which may make the noise more intrusive than a continuous, broad-band noise. A correction of +5 dB is applied where specific noise sources include tonal and/or impulsive characteristics. The resulting corrected noise level is referred to as the rating level.

The background noise level is measured in terms of dB LA90,t, which is the noise level, which is exceeded for 90% of the measurement time period 't'.

The noise assessment is then made by subtracting the background noise level from the rating noise level, with the likelihood of complaints arising predicted as follows:

- The greater this 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.
- If the rating level is more than 10 dB below the measured background noise level then this is a positive indication that complaints are unlikely.

NOISE LEVELS AT RECEPTORS

Noise measurement positions

Ambient noise levels were measured at three locations. One location was representative of the nearest residence to the Deans Foods site, and the second location was chosen to be representative of the background noise levels in the vicinity of the site in the absence of noise from the site. These locations are listed in the Table below, which also provides details of the respective distances and directions of the receptors from the centre of the loading yard of the site.

Monitoring location descriptions

Location	Representing	Approximate Distance from site (m)	Direction from site
A	Bungalow on Back Road, Catbrook	130	North
B	Road to Monmouth	400	North/ West
C	On site	0	Na

The locations of these monitoring points, in the context of the site and the surrounding area.

1.1 Measured background noise levels

Representative ambient noise levels were measured at the three positions, on 7th March 2007. All locations were in a free-field environment with levels measured approximately 1.2m above local ground level. During the survey, the weather was fine and dry with little or no wind, which represented ideal conditions for noise measurement. A Castle GA111 sound level meter was used to undertake the noise measurements. The meter was successfully calibrated before and after the measurement procedure.

A summary of the ambient noise levels recorded at each location is given in the Table below.

Summary of measured night-time noise levels

Location	Sound pressure level (dB)		Noise sources
	L_{Aeq},5min		
A	42		Plant noise, road traffic and aircraft.
B	39.5		Road traffic and aircraft. No plant noise audible.
C	58		Sound levels 10m from fans on site

At Receptor A, road noise was audible, but the subjective impression was that the Deans Foods site was contributing slightly to this. Whilst on-site, the fans and poultry were noted to be contributing to the noise emissions.

SOURCE NOISE LEVELS

I visited the site on the morning of 7th March 2007, to measure source noise levels at the site. The site was operating as normal during the source and receptor measurements.

Short-term sample noise levels of plant items and activities were measured at various locations on the site. The levels were measured at known distances from the relevant source.

Table below summarises the measured source noise levels.

Mean source noise levels at 10m

Source Reference	Source Description	Measured LAeq at 1m (dB)
1	Side mounted fans all full speed	58
2	Side mounted fans all ¾ speed	54.5
3	Side mounted fans all switched off	50

No other significant noise sources were identified during the site noise measurements.

Mean source noise levels at 50m

Source Reference	Source Description	Measured LAeq at 1m (dB)
1	Side mounted fans all full speed	50
2	Side mounted fans all ¾ speed	49
3	Side mounted fans all switched off	50

ASSESSMENT

An assessment has been carried out to determine the potential for disturbance due to noise.

The Noise Rating Levels at each of the receptors have been calculated based on the following assumptions:

- As a worst case, the noise rating levels have been calculated based on the assumption that all noise sources will operate continuously. All identified noise sources operate continuously (although many plant items only operate for short periods as and when required);
- Where there is no line of site between a particular noise source and the receptor, a nominal -10dB correction. Where there is a partial line of site between the noise source and the receptor, a nominal -5dB correction has been applied to represent the partial barrier attenuation. The effect of screening is likely to be greater than these assumed corrections, and so this is representative of the worst case;
- The shortest distance between the identified receptors and the Deans Foods site boundary has been used for all sources. This is considered a conservative estimate of the effects of distance attenuation, since many noise sources are further from the receptor than this.

Table below show the calculated noise rating levels at receptors A and B.

Table 1 Night-time Noise Rating Levels at Receptor A

Source Ref.	Source LAeq (dB)	Tonal / Impulsive Penalty (dB)	Barrier Attenuation Correction (dB)	Distance to Receptor (m)	Distance Attenuation Correction (dB)	Noise Rating Level (dB)
1	58	-	-5	130	-42.3	15.7
2	58	-	-10	130	-42.3	5.7
					Total	21.4

All significant noise sources at the site are on the near side of the site buildings with respect to receptor A.

The calculated Noise Rating Levels for receptor A can be compared to the measured background noise level at location B to determine the likelihood of complaints resulting from the contribution of Deans Foods site noise emissions at the receptors. BS4142 Assessment Results.

Location	Noise Rating Level (dB)	Background Noise Level (LA90,5min)	Difference (dB)
A	58	42	16
B	58	39.5	21.5

Table above shows that the calculated Noise Rating Levels at receptor A are above the highest measured background noise level at location A&B.

Conclusions and recommendations

This assessment has been based on the worst case in terms of operational noise emissions and has only taken account of basic distance and barrier attenuation. No account has been taken of plant on-times during the assessment period.

Ambient noise levels in the vicinity of the site are dominated by road traffic noise on the nearby local roads & aircraft noise.

Account has been taken of significant noise sources at the site, and, where appropriate. Noise Rating Levels at receptors have been calculated based on simple distance attenuation, and knowledge of the likely barrier attenuation of each individual noise source. The calculations have assumed worst case conditions, and only conservative estimates of the effects of barrier and distance attenuation have been accounted for.

The day-time assessment has shown predicted Noise Rating Levels are above the lowest measured background noise level in the absence of any noise.

- Operating the fans at $\frac{3}{4}$ speed will reduce the noise levels at the receptor.
- Consideration should be given to installing roof vent baffles to reduce poultry noise.

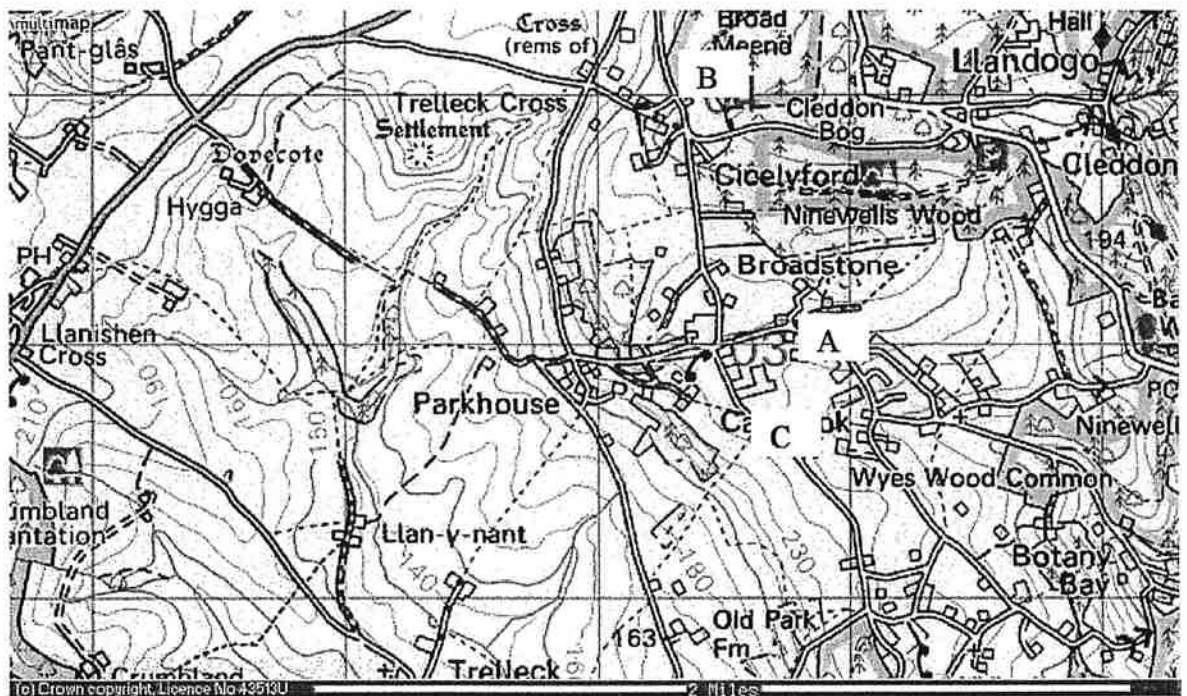
Finally consideration should be given to installing absorptive barriers if the above recommendations fail.

Site location plan and noise monitoring locations

Langstone Farm, Catbrook, Chepstow, Gwent, NP16 6ND

Receptor = A

Site = C



Survey details

Location of Survey

Two noise monitoring locations were identified to undertake the ambient and background noise survey.

Noise monitoring location 'A' was situated adjacent the bungalow.

Noise monitoring location 'B' was situated in the on the road out of Catbrook towards Monmouth.

Noise monitoring location 'C' was on site.

Date & Times of Surveys

Ambient, Background and Source Noise Survey

09.30-11.30, 7th March 2007.

Weather Conditions

Precipitation: None

Wind: Calm and still (<1m/s)

Temperature: Approx 10°C

Personnel Present During Survey

Nigel Youd ; Group Environmental Manager, Deans Foods Ltd

Instrumentation

Sound Level Meter: Castle GA111 Sound Level Meter.

Calibrator: Castle Acoustic Calibrator.

1.1 Calibration Procedure

Before and after each survey period, the measurement apparatus was check calibrated to an accuracy of +/- 0.3 dB @ 94dB.

1.2 Survey Procedure

Readings were taken over sufficient duration to provide representative values of background noise levels during the daytime and the night-time periods.