TECHAPPR



EAGLE HEALTH AND SAFETY CONSULTANTS

Specialists in Health Safety Environment and Noise

ENVIRONMENTAL NOISE SURVEY

Completed For :

Mrs Smith
Whitegate Stables
Copt Oak,
Markfield
LEICESTERSHIRE
LE67 9PJ

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1. Introduction

This report presents the results of an environmental noise survey carried out by Eagle Health and Safety Consultants, at one monitoring location to determine Whitegate Stables, Copt Oak exposure to road traffic noise during day time & night time periods.
Monitoring was required to determine the noise exposure levels for the proposed extension to the existing travellers site at Whitegate Stables, Copt Oak, Markfield.

The work detailed in the report was undertaken in accordance with verbal and written instructions from Roger Yarwood, Derbyshire Gypsy Liason Group.
The objective of the survey was to measure background noise levels from the M1 motorway & B591 during a normal working weekday & night time periods.

The report presents the current ambient noise levels at this location & calculates the assumed noise levels upon implementation of acoustic screening.

2.0 Executive Summary

2.1 Summary

The weekday & night time noise surveys completed in the field to the north east of the existing residential travellers site at Copt Oak, showed current background noise levels at the following time periods, are above the 'recommended' noise exposure levels detailed in Planning Policy Guidance 24: Planning and Noise.
Existing noise exposure levels were shown to be 'NEC category C' for both daytime & night time noise exposure.

Upon installation of the acoustic control measures being a 10 metre wide X 2.5 metre height embankment with dense planting & a further 2 metre screen fence on top of the embankment (Total height 4.5 metres) exposure was calculated to be reduced by 9dB(A).
This reduction in noise reduces the 'NEC Category' to 'B' - both daytime & night time readings being slightly (2 – 4 dB(A)) above the NEC Category A rating.

2.2 Discussion

The results show that weekday readings are from predominantly road traffic (M1 motorway) but also other noise sources including bird song, church bells & overhead aircraft which have added to the measured background noise readings.
Night time noise readings are predominantly from road traffic (M1 motorway).

3. Methodology

This section presents the methodology applied in completing the assessment. These are set out as follows:

- Guidance and Terms of Reference
- Strategy
- Survey Design, Monitoring Dates, Periods and Locations
- Monitoring Locations
- Instrumentation and Measurements

3.1 Guidance and Terms of Reference

The noise survey and assessment of measured data was based on the following key guidance document's:

Planning Policy Guidance 24: Planning and Noise, This document details guidance provided to local authorities on residential developments, including Noise exposure categories for residential developments & acceptable levels of Noise.

Planning Guidance and Standards BS 4142: 1997 'Method for rating industrial noise affecting mixed residential and industrial area.' This document provides guidance on the design, implementation of interpretation of noise surveys relevant to mixed industrial and resident settings. Specifically it is used to determine:

a). noise levels from factories, industrial premises or fixed installations and sources of an industrial nature in commercial premises; and

b). background noise levels

This standard also describes a method for assessing whether the noise referred to in (a) is likely to give rise to complaints from people residing in the building. The ***background noise level*** refers to the A-weighted sound pressure level of the residual noise exceeded for 90% of a given time interval.

For the assessment procedure, the likelihood of a specific noise causing complaints depends on its magnitude relative to background noise levels, and whether the noise source has certain audible characteristics (e.g. tonal frequency, discrete or continuous, or other distinguishable features). This will be assessed for the likelihood of complaints . Under BS 4142, the rating level for community noise is defined as the rating level for specific noise minus the background noise. A difference of 10dB or greater indicates, 'complaints are likely' whereas a difference of 5dB or less is defined to be of 'marginal significance'.

3.2 Strategy

The survey was designed in accordance with the guidance presented in Planning Policy Guidance 24: Planning and Noise.
The following basic strategy was applied to complete the noise survey:

- Recordings were taken from the site location (see map), for a period of fifteen minutes.
- Noise levels were measured at a height of 1.4 metres above ground level.
- Weekday day time recordings were taken between 13-00 and 16-00 hours. Night time noise readings were taken between 23-00 and 01-00 hours.
- The wind speed at each of the locations was measured using a handheld anemometer to make sure that the wind speed was not more than 1m/s.
- The temperature and wind direction was also noted at the site location.
- Measurements were only collected in dry, clear conditions.
- Noise readings are shown in the appendix section.

3.3 Survey Design

The survey design detail with respect to monitoring locations, timings, duration and frequency is summarised in Table 1:

Location Reference (See Map)	Location	Comments
(1)	Adjoining field to the north east of the current travellers site.	Motorway traffic running normally.

3.4 Monitoring Locations

The location of the survey points are shown in Table 1 and the photographs in the appendix section of this report.
Noise monitoring location was selected in agreement with Roger Yarwood, Derbyshire Gypsy Liason Group.

3.5 Measurements

The following parameters were measured:

- **LAeq,T** – the equivalent continuous A-weighted sound pressure level. This represents the constant level of noise with the same energy contents as the varying acoustic noise signal measured over the measurement period 'T', and is the normal parameter used for ambient and specific noise levels.

- **LAF90,T** – the level of A-weighted noise exceeded for 90% of the measurement period 'T', measured with a fast time weighting. ~This is the parameter used to describe background noise.

- **LAFmax** – the maximum A-weighted noise level measured with a fast time weighting.

- Further, subjective observations regarding the characteristics of the noise (e.g. intermittent, tonal, impulsive, etc) were noted.

3.6 Monitoring Instrumentation and Calibration

All readings were taken using a precision sound level meter (SLM), type;
CEL 450 SLM (Serial Number 077836).

The SLM comply with IEC 651 (type 1) Laboratory & field meter and ANSI Si.4, as detailed in BS EN 60804 & BS EN 60851.

Daily calibration was performed using a CEL-110/2 Acoustic calibrator sound source at 114 dB (Serial Number 076838) with traceable calibration certification.

The calibration certificate can be found at the end of the report in the appendix.

3.7 Survey Locations

Subjective observations regarding the characteristics of noise at each of the monitoring locations are presented below. Field records recording specific observations are included within section 6 of this report.

The site location, recorded prominent noise sources were from local traffic movements (Cars, vans & HGV vehicles).
Noise from the M1& B591 road network.
Noise from aircraft flying overhead.

These were taken at a period during the local & main road networks operating normally (ie. Traffic flowing freely).

4.0 Meteorological Conditions

Daytime:
Temp; 17 - 20°C.
Dry weather conditions. 10% cloud cover.
Wind speed 0.5 – 1.0m/s
Night time:
Temp; 12 - 14°C.
Dry weather conditions. 30% cloud cover.
Wind speed 0.5 – 1.0m/s

5.0 PROPOSED SENSITIVE NOISE RECPTORS IN THE AREA

The Copt Oak travellers site wishes to expand the residential caravan site to the field to the north east of the existing residential site, it is understood that the nearest residential caravan will be ~11 metres from the motorway boundary fence.

6.0 Noise Reading Results

Weekday Afternoon Readings

	Run 1	Run 2	Run 3	Run 4
	Adjoining field to north east of current travellers site.			
Date:	13/07/2011	13/07/2011	13/07/2011	13/07/2011
Time:	13-15 – 13.30	13.30 – 13.45	13.45 – 14.00	14.00 – 14.15
LAeq	66.8 dB(A)	66.4 dB(A)	66.7 dB(A)	65.9 dB(A)
LA90	57.7 dB	56.6 dB	56.1 dB	57.2 dB
Comments / Legend	a, b, c, d, f & o	a, b, c, d, f & o	a, b, c, d, f & o	a, b, c & f

Note; Wedding in progress for the first 45 minutes of the survey (audible church bells), therefore Run 4 reading used.

Weekday Night time Readings

	Run 1	Run 2	Run 3	Run 4
	Adjoining field to north east of current travellers site.			
Date:	21/07/2011	21/07/2011	21/07/2011	21/07/2011
Time:	23.05 – 23.20	23.20 – 23.35	23.35 – 23.50	23.50 – 00.05
LAeq	62.0 dB(A)	57.9 dB(A)	56.5 dB(A)	55.1 dB(A)
LA90	52.5 dB	50.1 dB	48.8 dB	48.0 dB
Comments / Legend	b, c & f	b, c & f	b, c & f	b, c & f

Note; Noise levels are shown to decrease during the period of the night time survey as traffic levels decrease through the night.

Other Readings;

1). Background Noise level at boundary with motorway 78.4 dB(A)

2). Noise level, behind the fence (currently 2 metres height) & moderate planting on motorway verge 68.7 dB(A).

Additional Noise Influences
Legend:

a.	birds	b.	local traffic	c.	distant traffic
d.	distant aircraft	e.	close aircraft	f.	HGV's / Lorrys
g.	tractor	h.	people talking	i.	children playing
j.	compressor	k.	dog barking	l.	engine running
m.	farm animals	n.	workmen / tools	o.	Church bells
p.	distant train	q.	distant generator.		

Assumed Noise levels at Sensitive Locator's;

Weekday afternoon;

Location	Approximate distance from Motorway verge (m)	Current Measured LAeq dB(A)	Assumed Noise level (LAeq) dB(A) (Embankment dense planting & fence to 4.5 m height)	Planning Policy Guidance 24 NEC Category
Adjoining field to the north east of existing site.	11	(Run 4) 65.9	57 dB(A) (Calculated 9 dB(A) reduction)	**B**

Weekday Night time;

Location	Approximate distance from Motorway verge (m)	Current Measured LAeq dB(A)	Assumed Noise level (LAeq) dB(A) (Embankment dense planting & fence to 4.5 m height)	Planning Policy Guidance 24 NEC Category
Adjoining field to the north east of existing site.	11	Mean 57.9	48.9 dB(A) (Calculated 9 dB(A) reduction)	**B**

Note;
Reference to Planning Policy Guidance 24 should be made for a full explanation of Noise Exposure Categories For Dwellings (NEC) – Annex 1 & Recommended Noise Exposure Categories For New Dwellings Near Existing Noise Sources tables.

7.0 APPENDIX 1

Proposed development (Field North East of existing travellers site at Copt Oak);



PROPOSED DEVELOPMENT
SCALE : 1/200
Existing Trees
Existing Planting
Coast Path
1
2
3
4
5
6
N

Poultney Wood
Oak
Barn
Barn Hill
Barn Hill Fm
Barrow Drive
Bise Rocks
Old Bise Rocks
Bise Rocks Fm
Brook
Brook Fm
Poplar Fm
Mortel
Hill Cottage
Whyte Hill
Hill Fm
Chittlerman
Stoney Wood
Ulverscroft Grange
Ulverscroft Cotta
Fm
A511
A50
B582
B4324
Quarry

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Certificate of Conformance and Calibration

CASELLA MEASUREMENT

Customer:	E.H.S.C
Instrument:	CEL-110/2 Calibrator
Serial No 1:	077036
Part No.:	
Ref Number:	0460048/01
Date of Issue:	29/06/2010
P/Ord Num:	SL092

Firmware Ver: 4.000

Calibration Method: -

The Instruments indicated values for the measurement parameters have been validated using the tested traceable equipment which has been calibrated with traceability to National and International references.

The uncertainties are for a confidence probability of not less than 95%.

Traceable Equipment: -	Equip No.	Cal DueDate
Calibrator CEL-110/1	10779	10/12/2010
DMM Fluke 45	00318	22/04/2011

Test Conditions: -

Ambient Temperature	:	24.3°C
Ambient Humidity	:	41.3%RH
Ambient Pressure	:	1022 mBar

Results: -

	Initial Reading:	Final Reading:	Tol (Class 1):	Tol (Class 2):
Frequency @ 1kHz:	1.0	1.0	±1 Hz @ 1 kHz	
SPL @ 114dB:	113.7	114.0	±0.15dB	±0.2dB
SPL @ 94dB:	•	•	±0.15dB	
With Coupler:	CEL-4726			

Comments:

Casella Measurement

Engineer : Mike Holyoake

Sig

Calibration Date 29/06/10

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