NOISE IMPACT ASSESSMENT

Site:	D B Standing & Son, Fox Corner Quarry
References:	51-803-R1
Date:	05 December 2025
Client:	D. B. Standing & Son Limited

e3p

e3p

Taylor Road | Trafford Park | Urmston | Manchester | M41 7JQ
Registered in England | CRN: 08725262

+ 44 (0) 161 707 9612 | e3p.co.uk

QUALITY ASSURANCE

Report references	51-803-R1

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WRITEN BY	QUALIFICATION	POSITION
Lee Faulkner	BSc (Hons) MIEnvSci MIOA	Associate Director

REVIEWED BY	QUALIFICATION	POSITION
Melissa Bailey	BEng (Hons) AMIOA	Consultant

AUTHORISED BY	QUALIFICATION	POSITION
Lee Faulkner	BSc (Hons) MIEnvSci MIOA	Associate Director

EXECUTIVE SUMMARY

Site Address	Fox Corner Quarry, Woburn Road, Health and Reach LU7 0BA
Grid Reference	E 492754, N 229189
Proposed Development	Recycling Operation for Environmental Permit (EP) application for the storage (keeping) prior to removal, and treatment (all types of handling/processing) of waste.
Surveys Completed	E3P has undertaken a full weekday and weekend background sound survey in a position considered representative of the closest noise sensitive receptors to the site, noted to be off Brickhill Road to the west. E3P have also undertaken source noise measurements of all plant and operations on site.
Assessments Completed	A 3D noise model has been constructed to assess to commercial noise impact at existing receptors. Commercial noise is assessed in accordance with BS 4142:2014+A1:2019.
Mitigation Recommended	The assessment of the proposed operations found that the impact had the potential for significant adverse and, as such, a 4 m high barrier (total height at operational ground level) is required along the area with the screener and crusher. With this in place, there is no exceedance of the typical background sound level at any receptor with specific noise levels considered low.
Conclusions and Discussions	The operation of the site has the potential for significant adverse impact at receptors assuming a worst-case assessment. As such, mitigation measures are proposed to ensure no adverse impact at the receptors.

CONTENTS

1. INTRODUCTION

1.1. BACKGROUND

E3P was commissioned by D. B. Standing & Son Limited to undertake a Noise Impact Assessment to support an Environmental Permit (EP) application for their waste management site at Fox Corner Quarry, Woburn Road, Health and Reach, to be referred to as 'the Site'.

The report has been produced by Lee Faulkner, Associate Director at E3P, and full member of the Institute of Acoustics (MIOA).

The purpose of this document is to accompany an Environmental Permit (EP) application.

1.2. DESCRIPTION OF WORKS AND SOURCES OF NOISE

The EP is required for the proposed recycling operations involving the storage (keeping) prior to removal, and treatment (all types of handling/processing) of waste. Proposed processes which can be carried out on site will include the following:

- Compacting (by loading shovel/360° excavator).
- Movement of and Sorting of Material (with loading shovel/360° excavator).
- Screening (by using appropriate mechanical screening plant and equipment).
- Separation (by using appropriate mechanical screening plant and equipment).
- Crushing (by Crusher).
- Blending (by loading shovel / 360° tracked excavator and trommel).

The waste site will typically be open during the following hours for all waste operations, i.e. depositing, sorting, moving, storing and removing waste:

- Monday to Friday - 07:00 – 18:00.
- Saturday - 07:00 – 13:00.
- Sundays, Bank/Public holidays - Closed.

However, it is understood that Saturday operations will primarily comprise maintenance and housekeeping and therefore, noise levels are likely to considerably below that of the weekday operations. As such, only weekdays will be assessed.

1.3. REPORT OBJECTIVES

The objectives of this report are as follows:

- Establish the existing sound levels at the nearest noise sensitive receptors.
- Consider the existing and potential sources of sound and to measure source sound levels of all applicable sources.
- Assess the impact of commercial sound in accordance with BS 4142 with consideration to the existing and proposed scenario.
- Provide advice on mitigation measures, where required.

2. ASSESSMENT METHODOLOGY

2.1. ENVIRONMENT AGENCY (2022) NOISE AND VIBRATION MANAGEMENT: ENVIRONMENTAL PERMITS

Environmental permits have conditions that require operators to control pollution – this includes controlling noise and vibration. E3P note that the following are required competencies and standards required in relation to Noise Assessments submitted as part of an Environmental Permit Application:

Noise impact assessments should be carried out to an appropriate standard and by competent personnel, for example, holders of either an Institute of Acoustics:

Diploma in Acoustics and Noise Control

Certificate of Competence in Environmental Noise Measurement, with relevant experience

Monitoring noise in the environment is a specialist field. Monitoring should be carried out by a qualified acoustician who can demonstrate competency in environmental work rather than, for example, occupational health and safety work.

You must use 'BS 4142: Methods for rating and assessing industrial and commercial sound' to quantify the level of environmental noise impact from industrial processes.

In rare circumstances, other methods may also be appropriate, for example, NANR45 for assessing existing low frequency sound inside a residential property.

If you want to assess impact using another method, you should discuss and agree this with your regulator before you start the assessment.

Where vibration is an issue, you should contact your regulator for specific advice.

E3P note from the above and the guidance that the EA require a BS 4142 assessment to be conducted.

2.2. BRITISH STANDARD BS 4142:2014+A1: 2019 – METHODS FOR RATING AND ASSESSING INDUSTRIAL AND COMMERCIAL SOUND

This standard describes methods for rating and assessing sound of an industrial or commercial nature which includes:

- Sound from industrial and manufacturing processes.
- Sound from fixed installations which comprise mechanical and electrical plant and equipment.
- Sound from the loading and unloading of goods and materials at industrial and / or commercial premises; and
- Sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from processes or premises, such as that from forklift trucks, or that from train or ship movements on or around an industrial or commercial Site.

The procedure detailed in the standard compares the measured or predicted specific noise level from any of the above with the background sound level at a residential dwelling. The measured background sound level at a receptor should be reliable and should not necessarily ascertain a lowest measured background sound level, but rather to quantify what is typical.

The specific noise level also acknowledges the reference time intervals depending upon whether the noise source operates during daytime (1-hour) or night-time (15-minute) periods.

There are several 'penalties' which can be attributed to the specific sound level depending upon the 'acoustic features' of the sound level under investigation as follows:

TONALITY

- +2 dB: where the tonality is just perceptible.
- +4 dB: where the tonality is clearly perceptible; and
- +6 dB: where the tonality is highly perceptible.

IMPULSIVITY

- +3 dB: where the impulsivity is just perceptible.
- +6 dB: where the impulsivity is clearly perceptible; and
- +9 dB: where the impulsivity is highly perceptible.

INTERMITTENCY

- +3dB: where the intermittency is readily distinctive against the acoustic environment.

In addition to the above, there is a penalty for 'other sound characteristics' of +3 dB where a sound exhibits characteristics that are neither tonal nor impulsive, though are readily distinctive against the acoustic environment. BS 4142 goes on to state that the rating level is equal to the specific sound level if there are no such features present or expected to be present.

Assessment of the rating level relative to the background sound level can yield the following commentary:

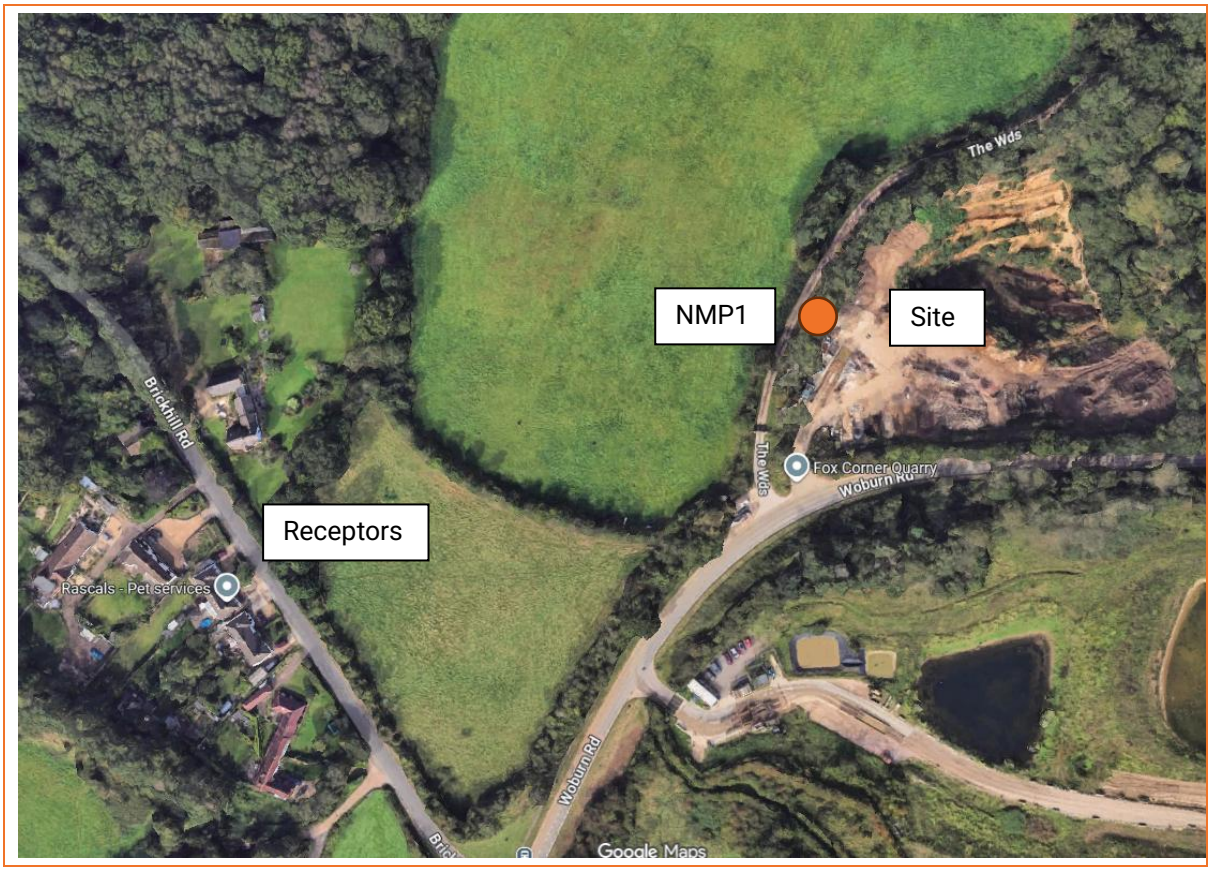
- Typically, the greater this difference (between the rating level and the background sound level), the greater the magnitude of impact.
- A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context; and
- The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact.

3. SURVEY RESULTS

E3P have undertaken a full weekday and weekend background and ambient sound survey in a position considered representative of the closest residential receptors to the site to the west.

The Noise Measurement Position is shown in Figure 1.

Figure 1 Noise Measurement Position



3.1. BACKGROUND AND AMBIENT SOUND SURVEY

A 5 day survey was conducting at the site whilst in operation with a view of utilising periods immediately before and after operations to inform a worst-case assessment. The survey was conducted during the following periods:

- 15:00 Wednesday 24th September to 09:00 Tuesday 30th September 2025.

The following Noise Measurement Position was used for the survey:

- Noise Measurement Position 1 (NMP1): Located on the north west boundary of the site in the existing treeline. The microphone of the sound level meter was attached to a tripod at a height of 1.5 m above ground level in free-field conditions. Sound sources consisted of on-site operations during operational periods and road traffic and birdsong outside these hours.

The results of the unattended long-term monitoring are summarised in Table 3.1 for the daytime with hourly values shown in Appendix III. The two hours after and one hour before operations on site are used.

Table 3.1 Daytime Background Monitoring Results

DATE	MEASUREMENT PERIOD	MEASURED SOUND PRESSURE LEVEL (dB)	
		$L_{Aeq,T}$	$L_{A90,T}$
Wednesday 24th September	17:00-18:00	53.6	46.9
	18:00-19:00	50.8	44.2
Thursday 25th September	06:00-07:00	49.9	43.7
	17:00-18:00	49.7	46.1
	18:00-19:00	50.1	43.7
Friday 26th September	06:00-07:00	49.8	43.1
	15:00-16:00	50.8	45.8
	16:00-17:00	58.0	44.3
Saturday 27th September	06:00-07:00	45.3	34.4
	13:00-14:00	51.6	47.5
	14:00-15:00	51.5	46.8
Monday 29th September	06:00-07:00	50.5	44.1
	17:00-18:00	50.8	46.0
	18:00-19:00	49.2	43.7

From the above, the median values from all 06:00-07:00 and the 2hr periods after operations have been calculated which is 44 dB.

Weather conditions were monitored throughout the survey visa forecasts and observations on site before and after the survey. Conditions were conducive to the measurement of environmental noise for the duration.

3.2. SOURCE NOISE SURVEY – ON-SITE OPERATIONS

E3P has conducted attended measurements of existing operations on Tuesday 30th September and Thursday 2nd October 2025, which are to be retained and continue to be operational. The main sources of sound were noise associated with the operation of the screener and crusher.

Table 3.2 details the measured sound pressure levels for each operation.

The sound power levels are then calculated via the following formula with time correction applied:

$L_{WA} = L_{pA} + (20 \times \log (D)) + 8.$

Where L_{pA} is measured sound pressure level.

D is distance to source.

Table 3.3 Source Noise Levels

SOURCE	MEASURED SOUND PRESSURE LEVEL, $L_{Aeq,T}$ (dB)	MEASUREMENT DISTANCE (m)	ON-TIME IN HOUR (SECONDS)	CALCUALTED SOUND POWER LEVEL, L_{WA} (dB)
Excavator loosening soil with bulldozer collecting	70.5	8.7	3600	97.3
Screener operating and loaded with bulldozer	74.5	20.7	3600	108.8
Vans loaded on weigh bridge	62.9	3.0	300	69.7
Crusher fed by excavator	80.2	10.0	3600	108.2
The Screener being fed by a small Bulldoze	81.4	10.0	3600	109.4

The equipment outlined in Table 3.3 was used for the noise survey.

Table 3.5 Noise Measurement Equipment

MEASUREMENT POSITION	EQUIPMENT DESCRIPTION	MANUFACTURER AND TYPE NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE
All source measurements	Sound Level Meter	01dB Fusion	14616	10th July 2026
	Pre-amplifier	01dB Pre22	20951	
	Microphone	GRAS 40CD	494264	
	Calibrator	Cirrus CR515	99206	5th August 2026
NMP1	Sound Level Meter	Nor 145	14529152	16th June 2027
	Pre-amplifier	Nor 1209	22293	
	Microphone	Nor 1227	332220	
	Calibrator	Nor 1255	125525208	16th June 2026

The sound level meters were field calibrated before and after each survey with no significant drift witnessed.

4. BS 4142 NOISE ASSESSMENT

This section considers the likely rating levels from the operations in accordance with BS 4142 and advice given in the Noise and Vibration Management guidance from the EA.

For the purposes of the assessments, E3P has used noise modelling software, CadnaA 2025 MR2, to determine the impact of noise from the sound sources associated with the development.

For the BS 4142:2014+A1:2019 assessment, penalties are applied to the specific sound level to provide the rating level. These penalties relate to the acoustic features of the sound source. It is considered that the impulsive nature of the noise associated with the sorting, HGV movements, tipping and general operation of the site will be just perceptible at the nearest residential dwellings given the nature of the existing noise climate and therefore a 3dB penalty may be applied at these times.

In addition, it is likely that during the operation of the screener that tonal elements may be just perceptible at the nearest receptors and therefore an additional 2dB penalty has been considered appropriate. These are likely to be masked considerably by the road traffic within the vicinity of the site, however in order to ensure a robust assessment, the penalty has been applied.

The following inputs have been included in the model:

- Ground elevations around the site have been taken as existing by way of a 1 m grid Digital Terrain Model (DTM) which contains public sector information licensed under the Open Government License v3.0.
- The elevations are amended to allow for the main quarry extraction area being at 101 m AOB.
- Existing buildings have been included in the model and assumed to have a structured façade.
- A reflection order of two has been used in all calculations.
- Ground absorption is set at 0.9.
- Noise levels generated using ISO 9613-2:2024 “Acoustics – Attenuation of sound during propagation outdoors” as incorporated into CadnaA software.

Each source is inputted as follows:

- Excavator loosening soil with bulldozer collecting input as moving point source at a height of 2 m with a sound power level of 97.3 dB.
- Screener operating and loaded with bulldozer input as a point source at a height of 2 m with a sound power level of 108.8 dB.
- vans loaded on weigh bridge input as a point source at a height of 2 m with a sound power level of 69.7 dB.
- Crusher fed by excavator input as a point source at a height of 2 m with a sound power level of 108.2 dB.
- The Screener bring fed by a small Bulldoze input as a point source at a height of 2 m with a sound power level of 109.4 dB.

All sound sources are calibrated to the measured noise values, where available, at the measured distances via nominal receivers to mimic the measurement positions.

4.1. WORST-CASE WEEKDAY AND WEEKEND OPERATIONS

Figure 3 details the resultant Grid Noise Map with levels calculated at 1.5 m height and façade levels showing maximum façade value.

Table 4.1 details the results of the BS 4142 for a selection of receptors and based on worst-case levels per group of receptors. Receptors are shown on Figure 3.

For receptors to the north, the lowest measured background sound level is used given their distance form the roads.

Table 4.1 Daytime BS 4142 Assessment

RECEPTOR	PREDICTED SPECIFIC SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	ACOUSTIC FEATURE CORRECTION (dB)	PREDICTED RATING LEVEL, L_{Ar} (dB)	BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)	DIFFERENCE, +/- (dB)
1 Brickhill Road	50	+5	55	44	**+11**
8 to 20B Brickhill Road	49	+5	54	44	**+10**
Heath & Reach Veterinary Surgery	37	+5	42	44	-2
Kingswood House	27	+5	32	34	-2
The Woods	28	+5	33	34	-1

The assessment has determined between 10 and 11 dB exceedance at the closest residential receptors. This is considered a significant adverse impact and, as such, mitigation measures are recommended.

For receptors to the north, rating levels fall below the absolute lowest measured background sound level and rating levels are considered very low, i.e. <35 dB. As such, no adverse impact is predicted.

Context is considered below.

4.2. CONTEXT AND UNCERTAINTY

In order to determine the final outcome of the assessment, the context must be considered, in accordance with BS 4142:2014+A1:2019, Section 11. The factors to be considered are discussed below:

4.2.1. BASELINE CONDITIONS

It is noted from the previous NIA that uncertainty in the assessment was controlled via the following precautions/procedures:

- Both the sound level meter and calibrator have a traceable laboratory calibration and the meter was field-calibrated both before and after the measurements.
- The measurement locations are considered representative of the existing noise climate outside the nearest residential dwellings to the proposed development.
- Background monitoring was undertaken during favourable weather conditions (e.g. dry and under 5m/s wind speed)

4.2.2. THE ABSOLUTE LEVEL OF THE SOUND

The worst case absolute noise level at the façade of the most affected receptor is 50 dB $L_{Aeq,1hr}$. Assuming 10 dB for attenuation provided by an open window, this would result in the internal noise level exceeding the daytime resting criterion of 35 dB, by up to 5 dB.

As such, this does not change the outcome of the assessments. Indeed, this reinforces the significant adverse effect due to existing operations and further supports the low impact due to the proposed permit operations.

4.2.3. THE CHARACTER AND LEVEL OF THE SOUND

The existing sound climate, whilst the site is not operational is road traffic and birdsong, along with local sources. As such, the operational sound sources would be noticeable over the existing sound climate.

Accordingly, the assessment and AFC applied are considered robust and accurate.

4.2.4. THE SENSITIVITY OF THE RECEPTOR AND EXISTING DESIGN MEASURES

The receptors are residential, permanent and are therefore considered to be highly sensitive. Given that details of the existing receptors are not known, it is assumed that no design measures are incorporated, i.e. open windows relied upon. Based on the absolute noise levels at the façade, the internal noise levels would exceed BS 8233:2014 criteria during the day and lead to significant impact.

Given the contextual factors discussed above in accordance with BS 4142:2014+A1:2019, it is concluded that the sound sources have the potential for significant adverse impact at the receptors.

5. MITIGATION

Due to the potential for industrial sound to result in up to +11 dB exceedance of the background sound level at existing receptors, mitigation measures are recommended.

5.1. NOISE BARRIERS

The main source of impact is the operation of the screener and crusher. In this area, E3P note that a bund is proposed as edge protection. This is not allowed for in the baseline noise assessment.

As such, it is recommended that a barrier of total height at 4 m from the ground level where the screener and crusher is proposed at the location of the current bund. Any barrier must be solid construction, be free from holes and sealed at the base.

Figure 4 details the resultant grid noise map with this barrier in place. Table 5.1 details the BS 4142 assessment with the barrier in place:

Table 5.1 Daytime BS 4142 Assessment with Mitigation

RECEPTOR	PREDICTED SPECIFIC SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	ACOUSTIC FEATURE CORRECTION (dB)	PREDICTED RATING LEVEL, L_{Ar} (dB)	BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)	DIFFERENCE, +/- (dB)
1 Brickhill Road	39	+5	44	44	0
8 to 20B Brickhill Road	38	+5	43	44	**-1**
Heath & Reach Veterinary Surgery	32	+5	37	44	-7
Kingswood House	27	+5	32	34	-2
The Woods	28	+5	33	34	-1

With the barrier in place, there is no exceedance of the background sound level at any receptor. Furthermore, specific sound levels are no more than 39 dB.

With windows open, internal noise levels are predicted to be 29 dB, 6 dB below the BS 8233 criterion.

As such, no adverse impact is predicted with mitigation measures in place.

END OF REPORT

Appendix I: Limitations

GENERAL

1. This report and any associated works (together comprising the "Services") were compiled and carried out by E3P for the client (as present in Section 1) under the E3P “Terms of Business” or with those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.

2. Unless explicitly agreed otherwise, in writing, this report has been prepared under E3P Standard Terms and Business as included within our proposal to the Client.

3. Project-specific appointment documents may be agreed upon at our discretion and a charge may be levied for both the time to review and finalise appointment documents and also for associated changes to the appointment terms. E3P reserves the right to amend the fee should any changes to the appointment terms create an increased risk to E3P.

4. The report needs to be considered in light of the proposal and associated limitations of scope. The report needs to be read in full and isolated sections cannot be used without full reference to other elements of the report and any previous works referenced within the report.

NOISE AND VIBRATION IMPACT ASSESSMENTS

5. Where a noise or vibration survey is required to inform an assessment, E3P will endeavour to ensure that all noise and vibration measurements taken are robust, representative and reliable in order to inform an accurate assessment.

6. Where mitigation measures are specified in this report, it should be noted that these measures are relative to a specific sound or vibration source, both in terms of the measured sound pressure and vibration level and the character of the sound source. Where either the sound pressure level or the character of the sound varies following completion of the sound survey, E3P cannot be held responsible for any subsequent variations in the proposed mitigation performance.

7. The works undertaken to prepare this report comprised a study of available and easily documented information from a variety of sources (including the Client), together with (where appropriate) a brief walkover inspection of the Site and correspondence with relevant authorities and other interested parties. Due to the short timescales associated with these projects responses may not have been received from all parties. E3P cannot be held responsible for any disclosures that are provided post-production of our report and will not automatically update our report.

8. The opinions given in this report have been dictated by the finite data on which they are based and are relevant only for the purpose for which the report was commissioned. The information reviewed should not be considered exhaustive and has been accepted in good faith as providing true and representative data pertaining to site conditions. Should additional information become available which may affect the opinions expressed in this report, E3P reserves the right to review such information and, if warranted, to modify the opinions accordingly.

9. E3P does not warrant work/data undertaken/provided by others.

Appendix II: Glossary

NOISE

Noise is defined as unwanted sound. Human ears are able to respond to sound in the frequency range 20 Hz (deep bass) to 20,000 Hz (high treble) and over the audible range of 0 dB (the threshold of perception) to 140 dB (the threshold of pain). The ear does not respond equally to different frequencies of the same magnitude but is more responsive to mid-frequencies than to lower or higher frequencies. To quantify noise in a manner that approximates the response of the human ear, a weighting mechanism is used. This reduces the importance of lower and higher frequencies, in a similar manner to the human ear.

Furthermore, the perception of noise may be determined by a number of other factors, which may not necessarily be acoustic. In general, the impact of noise depends upon its level, the margin by which it exceeds the background level, its character and its variation over a given period of time. In some cases, the time of day and other acoustic features such as tonality or impulsiveness may be important, as may the disposition of the affected individual. Any assessment of noise should give due consideration to all of these factors when assessing the significance of a noise source. The most widely used weighting mechanism that best corresponds to the response of the human ear is the “A”-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or LAeq, LA90 etc., according to the parameter being measured.

The decibel scale is logarithmic rather than linear, and hence a 3 dB increase in sound level represents a doubling of the sound energy present. Judgement of sound is subjective but, as a general guide, a 10 dB(A) increase can be taken to represent a doubling of loudness, whilst an increase in the order of 3 dB(A) is generally regarded as the minimum difference needed to perceive a change under normal listening conditions. An indication of the range of sound levels commonly found in the environment is given in the following table.

Table A Typical Sound Pressure Levels

SOUND PRESSURE LEVEL	LOCATIONS/EXAMPLE
0	Threshold of hearing
20-30	Quiet bedroom at night
30-40	Living room during the day
40-50	Typical office
50-60	Inside a car
60-70	Typical high street
70-90	Inside a factory
100-110	Burglar alarm at 1 m away
110-130	Jet aircraft on take off
140	Threshold of pain

ACOUSTIC TERMINOLOGY

Table B Terminology

DESCRIPTOR	EXPLANATION
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (2E-05 Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. “A” weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
LAeq, T	LAeq is defined as the notional steady sound level which, over a stated period of time (T), would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.
LAmax	LAmax is the maximum A-weighted sound pressure level recorded over the period stated. LAmax is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall Leq noise level but will still affect the noise environment. Unless described otherwise, it is measured using the “fast” sound level meter response.
L10 and L90	If a non-steady noise is to be described, it is necessary to know both its level and the degree of fluctuation. The Ln indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L10 is the level exceeded for 10% of the time and as such can be regarded as the “average maximum level”. Similarly, L90 is the “average minimum level” and is often used to describe the background noise. It is common practice to use the L10 index to describe traffic noise.
Free-field Level	A sound field determined at a point away from reflective surfaces other than the ground with no significant contributions due to sound from other reflective surfaces. Generally, as measured outside and away from buildings.
Fast	A time weighting used in the root-mean-square section of a sound level meter with a 125-millisecond time constant.
Slow	A time weighting used in the root-mean-square section of a sound level meter with a 1000-millisecond time constant.
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (2E-05 Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. “A” weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.

Appendix III: Measured Sound Pressure Levels

Table A.1 Hourly Measured Ambient and Background Sound Levels

MEASUREMENT START TIME	MEASURED AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	MEASURED BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
24/09/2025 15:00	63.9	57.1
24/09/2025 16:00	59.6	49.9
24/09/2025 17:00	53.6	46.9
24/09/2025 18:00	50.8	44.2
24/09/2025 19:00	48.4	42
24/09/2025 20:00	46.2	38.3
24/09/2025 21:00	45.2	36.7
24/09/2025 22:00	44.1	34.9
24/09/2025 23:00	54.5	32.6
25/09/2025 00:00	38.2	31.5
25/09/2025 01:00	35.9	28.5
25/09/2025 02:00	36.3	30.5
25/09/2025 03:00	36.9	30.7
25/09/2025 04:00	40.2	34
25/09/2025 05:00	44.8	38.6
25/09/2025 06:00	49.9	43.7
25/09/2025 07:00	60.3	49.8
25/09/2025 08:00	58.9	51.6
25/09/2025 09:00	58.6	51.7
25/09/2025 10:00	64.3	51.7
25/09/2025 11:00	63.7	58.0
25/09/2025 12:00	64.1	53.1
25/09/2025 13:00	64.3	55.2
25/09/2025 14:00	63.6	60.3
25/09/2025 15:00	62.9	58.9
25/09/2025 16:00	61.2	47.7
25/09/2025 17:00	49.7	46.1
25/09/2025 18:00	50.1	43.7
25/09/2025 19:00	48.0	42.1
25/09/2025 20:00	46.8	39.3
25/09/2025 21:00	45.8	39.6
25/09/2025 22:00	45.2	39.9
25/09/2025 23:00	42.9	34.9
26/09/2025 00:00	42.0	35.1

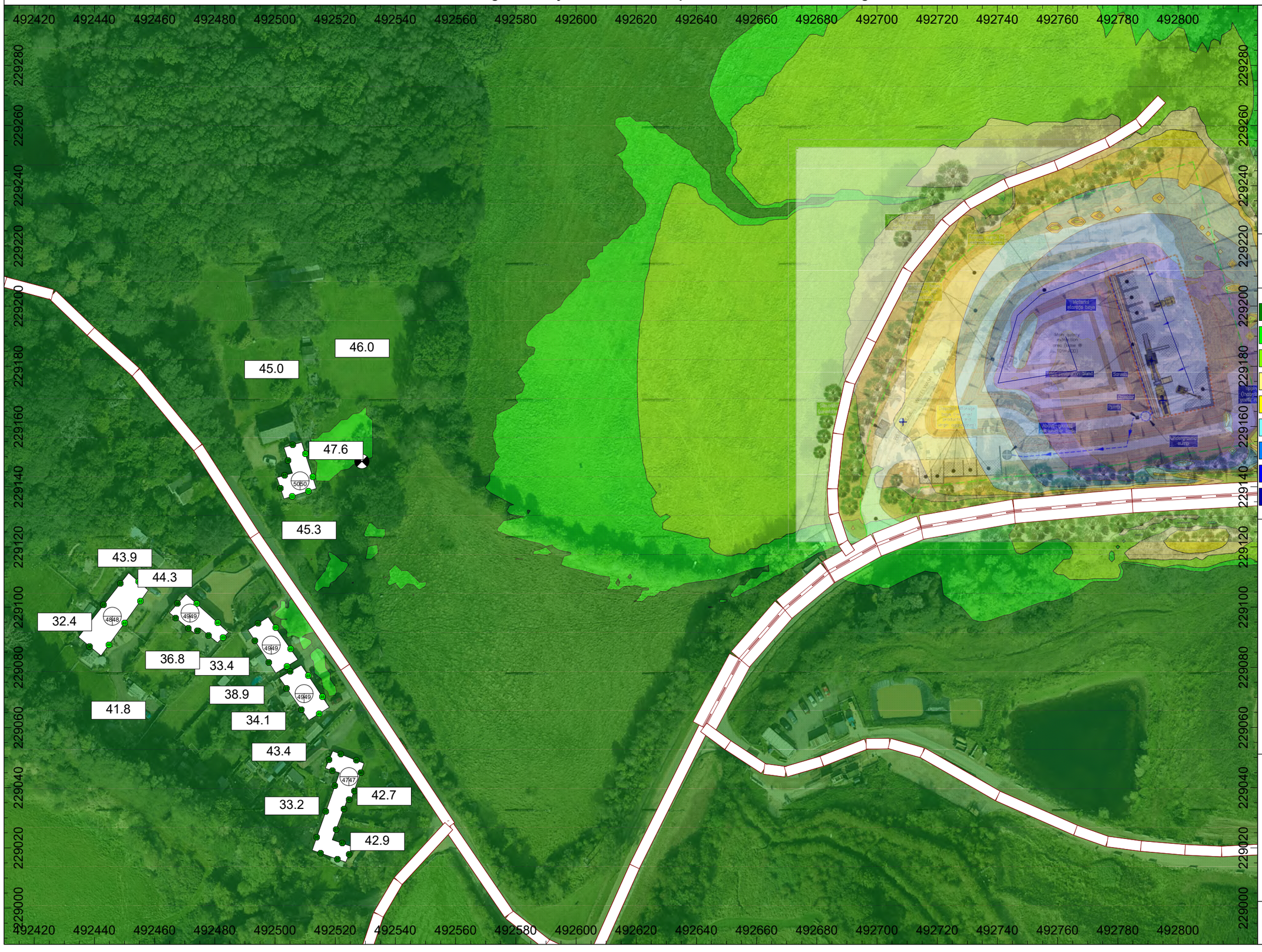
MEASUREMENT START TIME	MEASURED AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	MEASURED BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
26/09/2025 01:00	40.3	34.5
26/09/2025 02:00	40.8	35.5
26/09/2025 03:00	41.1	34.7
26/09/2025 04:00	42.5	34.8
26/09/2025 05:00	45.0	38.8
26/09/2025 06:00	49.8	43.1
26/09/2025 07:00	54.9	49.4
26/09/2025 08:00	61.6	51.5
26/09/2025 09:00	65.6	52.7
26/09/2025 10:00	62.8	49.8
26/09/2025 11:00	60.0	51.8
26/09/2025 12:00	58.6	53.5
26/09/2025 13:00	60.9	54.0
26/09/2025 14:00	60.2	52.8
26/09/2025 15:00	61.4	58.2
26/09/2025 16:00	55.3	46.5
26/09/2025 17:00	50.8	45.8
26/09/2025 18:00	58.0	44.3
26/09/2025 19:00	48.2	39.3
26/09/2025 20:00	46.9	35.3
26/09/2025 21:00	50.0	35.9
26/09/2025 22:00	45.3	34.4
26/09/2025 23:00	42.9	31.7
27/09/2025 00:00	42.9	28.2
27/09/2025 01:00	37.0	23.5
27/09/2025 02:00	37.7	23.2
27/09/2025 03:00	35.2	24.0
27/09/2025 04:00	35.1	25.5
27/09/2025 05:00	43.7	28.6
27/09/2025 06:00	45.3	34.4
27/09/2025 07:00	47.2	39.8
27/09/2025 08:00	50.6	42.8
27/09/2025 09:00	50.6	45.2
27/09/2025 10:00	50.3	45.0
27/09/2025 11:00	51.3	47.2

MEASUREMENT START TIME	MEASURED AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	MEASURED BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
27/09/2025 12:00	51.8	46.9
27/09/2025 13:00	51.6	47.5
27/09/2025 14:00	51.5	46.8
27/09/2025 15:00	51.2	46.5
27/09/2025 16:00	50.5	45.3
27/09/2025 17:00	50.3	45.0
27/09/2025 18:00	49.9	43.2
27/09/2025 19:00	48.5	40.6
27/09/2025 20:00	46.4	36.0
27/09/2025 21:00	45.7	35.8
27/09/2025 22:00	46.5	37.3
27/09/2025 23:00	45.3	34.5
28/09/2025 00:00	42.4	31.7
28/09/2025 01:00	39.2	27.8
28/09/2025 02:00	34.9	24.7
28/09/2025 03:00	34.5	25.5
28/09/2025 04:00	37.6	25.8
28/09/2025 05:00	38.8	27.8
28/09/2025 06:00	42.4	31.3
28/09/2025 07:00	44.9	36.0
28/09/2025 08:00	48.3	40.9
28/09/2025 09:00	49.3	42.4
28/09/2025 10:00	50.0	44.6
28/09/2025 11:00	51.3	44.7
28/09/2025 12:00	50.5	45.0
28/09/2025 13:00	49.9	44.2
28/09/2025 14:00	49.7	44.0
28/09/2025 15:00	49.9	42.5
28/09/2025 16:00	49.7	43.8
28/09/2025 17:00	49.5	42.3
28/09/2025 18:00	48.0	41.0
28/09/2025 19:00	47.3	37.5
28/09/2025 20:00	45.9	35.2
28/09/2025 21:00	44.7	30.7
28/09/2025 22:00	43.7	31.7

MEASUREMENT START TIME	MEASURED AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	MEASURED BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
28/09/2025 23:00	41.1	29.8
29/09/2025 00:00	39.6	24.6
29/09/2025 01:00	36.4	21.6
29/09/2025 02:00	32.8	21.4
29/09/2025 03:00	35.9	24.2
29/09/2025 04:00	47.2	29.1
29/09/2025 05:00	46.6	38.5
29/09/2025 06:00	50.5	44.1
29/09/2025 07:00	58.2	51.5
29/09/2025 08:00	57.3	50.5
29/09/2025 09:00	57.1	49.9
29/09/2025 10:00	59.2	55.3
29/09/2025 11:00	58.7	51.9
29/09/2025 12:00	60.2	49.7
29/09/2025 13:00	58.1	49.5
29/09/2025 14:00	60.1	54.1
29/09/2025 15:00	58.7	52.2
29/09/2025 16:00	60.9	47.2
29/09/2025 17:00	50.8	46.0
29/09/2025 18:00	49.2	43.7
29/09/2025 19:00	47.2	38.6
29/09/2025 20:00	47.3	35.8
29/09/2025 21:00	44.7	33.4
29/09/2025 22:00	43.3	31.0
29/09/2025 23:00	42.1	27.0
30/09/2025 00:00	37.8	23.9
30/09/2025 01:00	37.5	23.7
30/09/2025 02:00	35.7	24.1
30/09/2025 03:00	34.0	22.7
30/09/2025 04:00	38.9	26.2
30/09/2025 05:00	44.8	30.8
30/09/2025 06:00	51.0	42.9
30/09/2025 07:00	57.4	52.2
30/09/2025 08:00	60.2	53.3
30/09/2025 09:00	59.5	58.4

Appendix IV: Figures

Figure 3 - Daytime Grid Noise Map - Calculation at 1.5 m above ground level



Project:
Fox Corner Quarry

Project-No:
51-803

Client:
D B Standing & Son

Predicted Noise Level, LAeq,T (dB)

- ... <= 47
- 47 < ... <= 50
- 50 < ... <= 55
- 55 < ... <= 57
- 57 < ... <= 60
- 60 < ... <= 62
- 62 < ... <= 65
- 65 < ... <= 67
- 67 < ...

Noise Map Objects

- Point Source
- Line Source
- Road
- Building
- Barrier
- Receiver
- Building Evaluation
- Calculation Area

Project Engineer: L Faulkner
Date: 13/10/2025

Figure 4 - Daytime with Mitigation Grid Noise Map - Calculation at 1.5 m above ground level

Project:
Fox Corner Quarry

Project-No:
51-803

Client:
D B Standing & Son

Predicted Noise Level, LAeq,T (dB)

- ... <= 47
- 47 < ... <= 50
- 50 < ... <= 55
- 55 < ... <= 57
- 57 < ... <= 60
- 60 < ... <= 62
- 62 < ... <= 65
- 65 < ... <= 67
- 67 < ...

Noise Map Objects

- Point Source
- Line Source
- Road
- Building
- Barrier
- Receiver
- Building Evaluation
- Calculation Area

e3p

Project Engineer: L Faulkner
Date: 13/10/2025