



RAYMOND BROWN
QUARRY PRODUCTS

Sandland Extension to Brickworth Quarry, Whiteparish, Wiltshire

ENVIRONMENTAL STATEMENT

CHAPTER No.6

CHAPTER: Noise

September 2025

8 NOISE

Introduction

- 8.1 This chapter presents the results of the noise impact assessment of the proposed Sandlands extension at Brickworth quarry in Wiltshire. The assessment and chapter has been prepared by 24 Acoustics Ltd.
- 8.2 This chapter is intended as a brief summary of the full noise impact assessment, which is provided in Appendix 1 to this chapter.

Scope of the Assessment

Geographical Scope

- 8.3 The relevant receptors are considered to be the residential properties in the vicinity of the proposed quarry extension which are located close to the site boundaries and up to 700 m away. Figure 1 in the full noise impact assessment identifies the key receptor properties.

Technical Scope

- 8.4 The assessment has considered the noise impact from plant and machinery associated with the proposed soil stripping, sand and gravel extraction, backfilling and restoration of the proposed Sandlands extension.
- 8.5 Noise from all aspects of the proposed extension has been considered. This includes HGV movements together with the operation of the sand and gravel screening plant and mobile plant movements.

Temporal Scope

- 8.6 The assessment has considered the noise impact over all identified distinct phases of operation. These include soil stripping of the extension area and the restoration works. Consequently, it is considered that the noise impact assessment has considered the full proposed working life of the operation.

Assessment Methodology

Environmental Legislation, Standards & Guidelines

- 8.7 Section 3 of the full noise impact assessment in Appendix 1 provides full details of the environmental legislation, standards and guidelines used for the noise impact assessment.
- 8.8 Government guidance relating to planning applications for mineral extraction sites states that consideration should be given as to whether the noise from the proposals would:
- give rise to a significant adverse effect;
 - give rise to an adverse effect; and
 - enable a good standard of amenity to be achieved.

- 8.9 This would include identifying whether the overall effect of the noise exposure would be above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.
- 8.10 The guidance states that noise limits should be established along the following basis (for daytime operations between 07:00 and 19:00 hours):
- For 'normal operations' prevailing background noise level (dB $L_{A90, 1 \text{ hour}}$) + 10 dBA or an upper limit of 55 dB $L_{Aeq, 1 \text{ hour}}$ if the lower limit is not achievable without imposing unreasonable burdens on the mineral operator;
 - For activities such as site establishment, soil stripping etc. An upper limit of 70 dB $L_{Aeq, 1 \text{ hour}}$ for up to 8 weeks per year.

Approach to the Assessment

- 8.11 The assessment has been carried out using the following methodology:
- Ambient noise surveys have been undertaken at the nearest residential receptor to the extension site;
 - Visits have been made to Brickworth Quarry to observe the nature of the existing operations and to obtain source-term sound power levels of the plant that will be used within the proposed site;
 - The noise emission from the operations associated with the quarry have been calculated using the propagation guidance of ISO 9613 and this has established the noise level from the proposed operations at each receptor. The following anticipated operations have been considered for the purpose of the noise impact assessment:
 - o Soil stripping of the Sandlands extension area;
 - o Sand extraction and backfilling;
 - o Processing plant operations.

- 8.12 In addition the assessment has also taken account of the noise likely to be generated from the existing (consented) Phase 8 restoration works which are likely to coincide with some of the works at the proposed Sandlands extension.

Assessment Criteria

- 8.13 The assessment has been performed at each receptor for each phase of operation using the absolute and relative noise impact criteria defined in the Government's mineral planning guidance criteria (described above).

Significance Criteria

- 8.14 Based upon the review of the standards and guidance described above, the following operational noise impact magnitude scale has been derived.

Table 8.1: Operational Noise Impact Criteria, Normal Operations

Period	Impact Magnitude, Operational Noise Level, dB L _{Aeq}			
	Substantial	Moderate	Slight	Negligible
Daytime (07:00-23:00 hours)	> 55 dB L _{Aeq} or > 10 dB above average daytime L _{A90} background noise level (whichever is lower)	Between 1 and 9 dB above the average daytime L _{A90} background noise level	Between 0 and 9 dB below the average daytime L _{A90} background noise level	> 10 dB below average daytime L _{A90} background noise level

Baseline Conditions

8.15 There are a number of residential properties which are located relatively near to the proposed extension site. Ambient noise surveys have been undertaken at a single receptor location, as described below.

- Location 1: Site boundary, at the same distance from the A36 as 'Woodpeckers'. Considered acoustically representative of the background noise environment at Woodpeckers and Fine View.

8.16 Figure 1 of the technical report in Appendix 1 shows the noise survey location in graphical format.

8.17 The surveys were undertaken on a continuous basis between 15 and 23 February 2023 at location 1 and at all other locations between 2 and 10 February 2023.

8.18 The noise survey results are shown graphically in Appendix B of the full technical report in Appendix 1 of this chapter and are summarised in Table 8.2 below.

Table 8.2: Summary of Background Receptor Noise Survey Results

Receptor/ Survey Location	Representative Background Noise Level, dB L _{A90} , 1hour	
	Weekday, 07:00- 18:00 hrs	Saturday, 08:00- 12:30 hrs
Woodpeckers/ Fine View	49	47

Identification & Evaluation of Potential Impacts

Development Phases

- 8.18 The work at the Sandlands extension will comprise initial soil stripping and then simultaneous extraction and backfilling. The site working plan is shown in Figure 2 of the main noise impact assessment in Appendix 1. It is likely that the operations will coincide with the restoration of the neighbouring Phase 8 works (which is already consented).
- 8.19 Soil stripping will include the use of a 24 tonne digger and two dump trucks. Sand extraction will include 3x 24 tonne diggers and 3x dump trucks. A dozer and two dump trucks will be used for the restoration works. All excavated material will be transferred to the (existing) central processing area within the Hurst Farm site via a dump truck for screening and stockpiling prior to distribution offsite by HGV.
- 8.20 Source-term sound power level data for the plant to be used has been determined from measurements undertaken on site, from manufacturer's operational sound power data and from 24 Acoustics' database of similar plant. The sound power level data used in the assessment is shown in the technical report in Appendix 1 together with a description of the survey methodology for the sound power levels that were determined on site.
- 8.21 Operational noise levels at receptors have been calculated using the propagation methodology of ISO 9613. This takes account of geometric divergence, acoustic screening and ground and air absorption. The calculations indicate that noise levels at Woodpeckers will vary between 46 and 48 dB $L_{Aeq, 1 \text{ hr}}$ and will average 38 dB $L_{Aeq, 1 \text{ hr}}$ at Fine View.

Summary of Potential Impacts

- 8.21 Table 8.3 compares the predicted operational noise levels to the measured prevailing background noise levels.

Table 8.3: Operational Cumulative Noise Levels compared to Background Noise Levels

Period of Operation and Noise Level	Receptor and Operation			
	Woodpeckers		Fine View	
	Soil Stripping	Excavation	Soil Stripping	Excavation
<u>Weekdays</u>				
Background noise level, dB <i>L</i> _{A90, 1 hr}	49	49	49	49
Operational Noise Level, dB <i>L</i> _{Aeq, 1 hour}	46	48	38	38
Difference above b/g, dB	-3	-1	-11	-11
<u>Saturday mornings</u>				
Background noise level, dB <i>L</i> _{A90, 1 hr}	47	47	47	47
Operational Noise Level, dB <i>L</i> _{Aeq, 1 hour}	46	48	38	38
Difference above b / g, dB	-1	1	-9	-9

- 8.22 The assessment indicates that noise levels will be no greater than the government's mineral guidance noise limits at all times.

Monitoring and Audit of Proposed Mitigation Measures

- 8.23 The assessment has indicated that the works will not result in a significant noise impact.
- 8.24 Regardless of this, however, in order to minimise the noise impact, it should be noted that at all times during the works the operator will be expected to:
- Use best practicable means (as defined in Section 72 of the Control of Pollution Act, 1974) to reduce noise from the operations to a minimum, in agreement with the local planning authorities;
 - Maintain plant regularly, ensuring that any noise-reducing measures (such as silencers or enclosures) are properly fitted and used correctly;
 - Undertake to ensure that all drivers and operatives are provided with training to ensure that impulsive noise due to vehicle operations within the quarry site is kept to a minimum;
 - Work with the local neighbours to keep them informed of the proposed working schedule, including the times and duration of any abnormally noisy activity that may cause concern.
- 8.25 It is considered that the above should be drawn up in a detailed noise management plan which may be produced and agreed with the mineral planning authority as part of a planning condition.

Residual Impacts

Significance of Residual Impacts

- 8.26 Table 8.4 provides a summary of the residual effects. As can be seen from the table the residual effects throughout are considered to be slight: moderate. It is considered that there will be no significant (noise related) impacts to human health as a result of the proposals which are fundamentally short-term in nature.

Table 8.4: Residual Effects Table

Environmental Effect	Sensitivity	Magnitude	Nature	Duration	Mitigation	Residual Significance	Level of Certainty	Rationale
Impact at Woodpeckers	Local	Slight: Moderate	Adverse Direct Reversible	Short- medium term temporary	Produce approved noise management plan in conjunction with LPA and adhere at all times	Slight	High	Survey data and acoustic modelling of operation
Impact at Fine View	Local	Slight						
	Local							
	Local				Undertake regular routine receptor/ compliance monitoring			
	Local							

Conclusions

- 8.27 This chapter has assessed the potential impact from noise associated with the proposed Sandlands extension to Brickworth Quarry in Wiltshire.
- 8.28 The assessment has been based upon background noise surveys undertaken at the nearest residential receptors and detailed acoustic calculations of the operational phases.
- 8.29 The assessment has indicated that noise from the operations will comply with the noise limits suggested in the government's guidance relating to minimal extraction at all times.



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**PROPOSED SANDLAND EXTENSION,
BRICKWORTH QUARRY, WHITEPARISH, WILTSHIRE**

NOISE IMPACT ASSESSMENT

Technical Report: R11135-1 Rev 0

Date: 15th July 2025

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Project Title: Proposed Sandland Extension, Brickworth Quarry, Whiteparish, Wiltshire
Noise Impact Assessment

Report Ref: R11135-1 Rev 0

Date: 15th July 2025

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Document Status and Approval Schedule

Revision	Description	Prepared By	Approved By
0	Approved for Issue	Reuben Peckham	Steve Gosling

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EXECUTIVE SUMMARY

Acoustics Ltd has been retained by Raymond Brown Quarry Products Ltd to undertake an assessment of the potential noise impact associated with the proposed Sandlands extension at Brickworth Quarry in Wiltshire.

The assessment has been carried out following background noise surveys undertaken at a location representative of the closest residential properties to the site and following detailed acoustic modelling of the proposed operations.

The assessment has indicated that the level of noise impact for the proposed extended scheme at the nearest properties will be lower than the existing site planning noise limit and lower than the absolute noise targets set out in the government's minerals planning guidance.

The assessment also indicates that the noise impact associated with the operations will be low or negligible at all receptors at all times. In planning terms this will generate a noise impact which falls between NOEL and LOAEL as defined in the PPG.

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1.0 INTRODUCTION

- 1.1 24 Acoustics Ltd has been retained by Raymond Brown Quarry Products Ltd (Raymond Brown) to undertake an assessment of the potential noise impact associated with the proposed Sandlands extension at Brickworth Quarry, near Whiteparish in Wiltshire.
- 1.2 This report presents the results of the assessment and is based upon background noise survey data recorded at the site previously by 24 Acoustics Ltd.
- 1.3 All sound pressure levels quoted in this report are in dB relative to 20 μ Pa. All sound power levels are quoted in dB relative to 10^{-12} Watts. A glossary of the acoustic terminology used in this report is provided in Appendix A.

2.0 SITE DESCRIPTION AND PROPOSALS

- 2.1 Brickworth Quarry is located in countryside approximately 1 km south-west of Whiteparish. Planning permission for sand extraction was first granted in 1993, but the quarry did not open until April 2003 and has been worked since with significant areas now restored following infilling with inert waste.
- 2.2 The proposed Sandland quarry extension occupies land to the north of the existing quarry. It is proposed that the extension would be worked in a similar manner to the existing Brickworth Quarry, with extraction of sand followed by restoration to original ground level through the use of site-derived products and the importation and placement of inert materials.
- 2.3 The proposed hours of working will be as per the existing consent at Brickworth Quarry; 07.00 - 18.00 Monday to Friday and 08.00 - 12.30 on Saturday.
- 2.4 The nearest residential receptors to the site are as follows:
- Woodpeckers, approximately 100 m north-east of the proposed Sandland extension;
 - Fine view, approximately 700 m east of the proposed Sandland extension.
- 2.5 Figure 1 provides an aerial image of the site and surrounding area, showing the location of the nearest noise-sensitive receptors. Figure 2 provides a site plan showing the proposed work area.

- 2.6 The operations will involve soil stripping with the material either formed into perimeter environmental bunds or placed in storage to the south of the existing plant site. Following this sand will be excavated using a 360 excavator. This will be transported to the existing processing plant site via dumper truck along the existing access road where it will be screened before being stockpiled and loaded on to road-going lorry by a front-end loading shovel.
- 2.7 Due to the proposed continued use of the existing site infrastructure (internal haul road, processing plant site and soil storage area) permission will be sought alongside the new extension area, to extend the permitted timescale for restoration of these areas accordingly.

3.0 STANDARDS AND GUIDANCE

- 3.1 The National Planning Policy Framework (NPPF) [Reference 1] states that planning policies and decisions should aim to:
- mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
 - identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.
- 3.2 The NPPF refers to the Noise Policy Statement for England (NPSE) [Reference 2] which is intended to apply to all forms of noise, including environmental noise, neighbour noise and neighbourhood noise. The NPSE sets out the Government's long-term vision to 'promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development' which is supported by the following aims.
- Avoid significant adverse impacts on health and quality of life;
 - Mitigate and minimise adverse impacts on health and quality of life.

- 3.3 The NPSE defines the concept of a 'significant observed adverse effect level' (SOAEL) as 'the level above which significant adverse effects on health and quality of life occur'. The following guidance is provided within the NPSE:

"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations. Consequently, the SOAEL is likely to be different for different noise sources, for different receptors and at different times. It is acknowledged that further research is required to increase our understanding of what may constitute a significant adverse impact on health and quality of life from noise. However, not having specific SOAEL values in the NPSE provides the necessary policy flexibility until further evidence and suitable guidance is available."

- 3.4 The Planning Practice Guidance (PPG) was written to support the NPPF with more specific planning guidance. The PPG reflects the NPSE and states that noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. It also states that opportunities should be taken, where practicable, to achieve improvements to the acoustic environment. The PPG states that noise can over-ride other planning concerns but should not be considered in isolation from the other economic, social and environmental dimensions of the proposed development.
- 3.5 The PPG expands upon the concept of SOAEL (together with Lowest Observable Adverse Effect Level, LOAEL and No Observed Effect Level, NOEL) as introduced in the NPSE and provides a table of noise exposure hierarchy for use in noise impact assessments in the planning system. Table 1 is reproduced from the NPPG and summarises the noise exposure hierarchy, based on the likely average response.

Response	Examples of Outcomes	Increasing Effect Level	Action
Not present	No Effect	No Observed Effect	No specific measures required
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life	No Observed Adverse Effect	No specific measures required
Lowest Observable Adverse Effect Level (LOAEL)			
Present and intrusive	Noise can be heard and causes small changes in behaviour and/ or attitude, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level (SOAEL)			
Present and disruptive	The noise causes a material change in behaviour and/ or attitude, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extension and regular changes in behaviour and/ or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/ awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non auditory	Unacceptable Adverse Effect	Prevent

Table 1: PPG Noise Exposure Hierarchy

- 3.6 In general terms it is considered that a noise impact with an effects level which is lower than SOAEL is acceptable (providing the effect is mitigated to a minimum). There is currently, however, a major discontinuity between the above guidance and objective technical criteria for use in planning noise impact assessments.

- 3.7 Government guidance on the assessment of noise from mineral extraction [Reference 4] provides objective means of assessment. It states that mineral planning authorities should aim to establish a noise limit, through a planning condition, at the noise-sensitive receptors that does not exceed the $LA_{90,1 \text{ hour}}$ background noise level by more than 10 dBA during normal working hours. It states that were it will be difficult not to exceed the background level by more than 10 dBA without imposing unreasonable burdens on the mineral operator, the limit set should be as near that level as practicable and in any event should not exceed 55 dB $L_{Aeq, 1 \text{ hour}}$.
- 3.8 The guidance does also allow increased temporary daytime noise limits of up to 70 dB $L_{Aeq, 1 \text{ hour}}$ for periods of up to 8 weeks in a year in order to facilitate essential site preparation and restoration work and construction of baffle mounds where it is clear that this will bring long-term environmental benefit to the site or its environs.
- 3.9 It is understood that the site currently operates under two noise-related planning conditions which state the following:

Condition 9. *'During the permitted working hours the freefield equivalent continuous noise level ($L_{Aeq, 1 \text{ hour}}$) for the period due to mineral extraction and waste importation and depositing operations shall not exceed 55 dB as recorded at the boundary of the nearest inhabited property'.*

Condition 10. *'All vehicles, plant and machinery operated within the site shall be maintained in accordance with the manufacturer's specification at all times and shall be fitted with, and use, effective silencers. No reversing beepers or other means of warning of reversing vehicles shall be fixed to, or used on, any mobile site plant other than white noise alarms or beepers whose [SIC] noise levels adjust automatically to surrounding noise levels'.*

4.0 ASSESSMENT METHODOLOGY

4.1 The following assessment methodology has been used:

- i. A background noise survey has been undertaken to determine existing levels of background noise at the nearest residential properties to the site;
- ii. An acoustic model of the screening plant has been developed and has predicted the operational noise level at the nearest residential properties;
- iii. An assessment of the likely noise impact associated with the operations has been undertaken in accordance with the minerals guidance.

5.0 BACKGROUND NOISE SURVEYS

5.1 Background noise measurements were undertaken on site to determine the noise level at the nearest residential properties to proposed new working areas. Noise monitoring equipment was installed at a location acoustically equivalent of Woodpeckers which is located opposite the site haul road off the A36, as shown in Figure 1.

5.2 This location is considered representative of the background noise environment for the nearest residential properties surrounding the site. Measurements were undertaken in samples of 1 minutes in terms of the overall free-field A-weighted L_{eq} , L_{90} and $L_{max,f}$ noise levels. Measurements were undertaken between 28 May and 3rd June 2025.

5.3 The noise measurements were undertaken with the following instrumentation:

- 1 Rion NL32 Class 1 accuracy sound level meter;
- Bruel and Kjaer Type 4231 Class 1 accuracy acoustic calibrator.

- 5.4 The instrumentation was calibrated before and after the surveys in accordance with the manufacturer's instructions. No significant drift in calibration was recorded. The instrument microphone was fitted with an environmental weather shields during the measurements.
- 5.5 Weather conditions during the survey were generally fine and dry with wind speeds typically lower than 5 m/s. Noise measurements associated with this period have been removed from the analysis. The noise levels are therefore not considered to have been adversely affected by weather conditions.
- 5.6 The results of the background noise survey are shown graphically in Appendix B and summarised in Table 2 (analysed into hourly daytime assessment periods). The typical values are shown in the data are considered a representative typical background noise level for the site. 24 Acoustics considers the typical noise level to be the average noise level minus one standard deviation.

Day and Date	Hours and Typical Background Noise Level, dB LA90, 1 hr
	07:00 - 18:00
Wed 28 May	53
Thurs 29 May	50
Friday 30 May	49
Monday 2 June	49
Tues 3 June	52
Representative	49
	08:00- 12:30
Saturday 31 May	47
Representative	47

Table 2: Summary of Measured Background Noise Levels – Woodpeckers

6.0 ACOUSTIC MODEL AND NOISE IMPACT ASSESSMENT

Source Term Noise Survey and Acoustic Model

- 6.1 Operations on the site will include the simultaneous extraction and restoration at the Sandlands extension, the transfer of extracted material to the (existing) processing plant by dumper truck, the screening of material within the processing plant, prior to stockpiling/ transfer off site and potentially the final restoration of Phase 8 within the existing consented area of the site which is likely to coincide with some of the works at the Sandlands site.

- 6.2 The operations will utilise the existing plant which is currently in use on the (consented) part of the site. This is listed as follows.

Description	Phase	Plant
Sandlands extension	Soil stripping	20 tonne excavator 2 x 25 tonne dump truck
	Extraction & restoration	52 tonne excavator 2 x 40 tonne dump truck 1 x bulldozer
Processing plant	Material processing	Terex Commander 1400 Sand Screening Plant Volvo L150H wheeled loader HGVs
Phase 8	Restoration	20 tonne excavator 1 x bulldozer 2 x 25 tonne dump truck

Table 3: Stages of Operation and Plant to be Utilised

- 6.3 Source-term sound power level data for the plant has been determined from measurements undertaken previously on site, from the database contained within British Standard 5228 [Reference 5] and from 24 Acoustics' database of similar plant. The sound power level data used in the assessment is shown in Appendix C.
- 6.4 The source term noise data has been used to populate an acoustic model of the operations using IMMI 2024 noise mapping software. The software has used the calculation methodology of ISO 9613 to determine the noise level from each source at each receptor location, taking into account the effects of geometric divergence, ground and atmospheric absorption. The effects of acoustic screening have not been taken into account (representing a worst-case assessment).
- 6.6 The acoustic model for each of the identified phases of operation has calculated the noise level from each phase at each of the identified residential receptors. Table 5 below summarises the results of the calculations. The results are shown in full in the table in Appendix E and are presented as acoustic contours in Figure 3.

Receptor Property	Predicted Operational Noise Levels, dB L _{Aeq} , 1 hour
Woodpeckers	46- 48
Fine View	38

Table 5: Calculated Noise Levels – Noise from Site Operations

Noise Impact Assessment

- 6.7 The assessment and calculations indicate that the operational noise level at all receptors will be substantially lower than 55 dB $L_{Aeq, 1 \text{ hour}}$ and hence below the existing planning noise limit and the absolute limit stated in the minerals planning guidance.
- 6.8 A comparison of the range of predicted operational noise levels, relative to the prevailing typical background noise level at each receptor, has also been carried out in accordance with the minerals planning guidance. This is shown in full in Appendix E. The data indicates that noise from the operations will fall substantially below the background levels at Fine View (and associated neighbouring properties) and will be no greater than 1 dB above the background noise level at Woodpeckers.
- 6.9 On this basis the noise impact associated with the proposals will be fully compliant with the minerals planning guidance and will result in a low or negligible impact at all receptors at all times. In planning terms this will generate a noise impact which falls between NOEL and LOAEL as defined in the PPG.

7.0 CONCLUSIONS

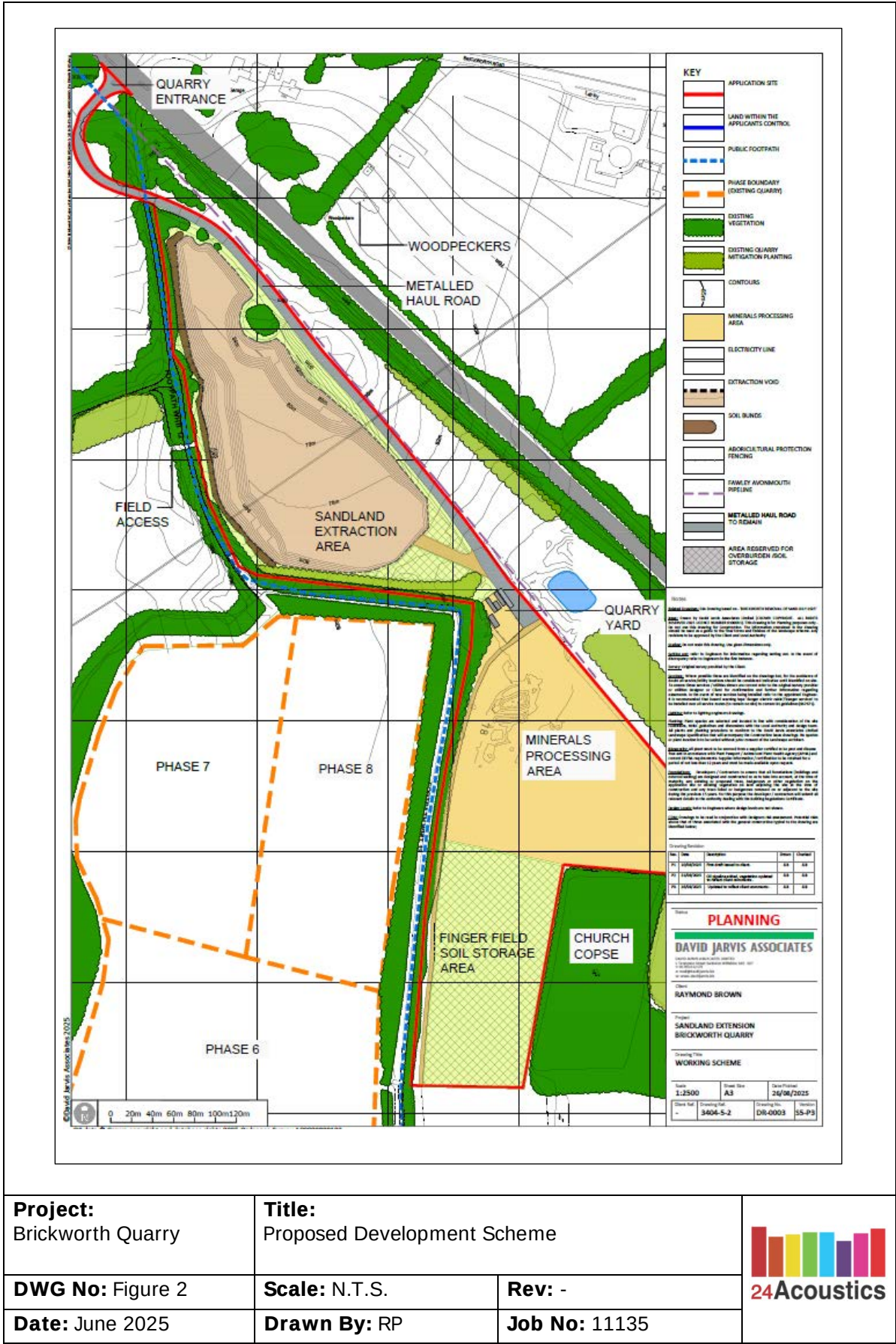
- 7.1 Acoustics Ltd has been retained by Raymond Brown Quarry Products Ltd to undertake an assessment of the potential noise impact associated with the proposed Sandlands extension at Brickworth Quarry in Wiltshire.
- 7.2 The assessment has been carried out following background noise surveys undertaken at a location representative of the closest residential properties to the site and following detailed acoustic modelling of the proposed operations.
- 7.3 The assessment has indicated that the level of noise impact for the proposed extended scheme at the nearest properties will be lower than the existing site planning noise limit and lower than the absolute noise targets set out in the minerals planning guidance.
- 7.4 The assessment also indicates that the noise impact associated with the operations will be low or negligible at all receptors at all times. In planning terms this will generate a noise impact which falls between NOEL and LOAEL as defined in the PPG.

REFERENCES

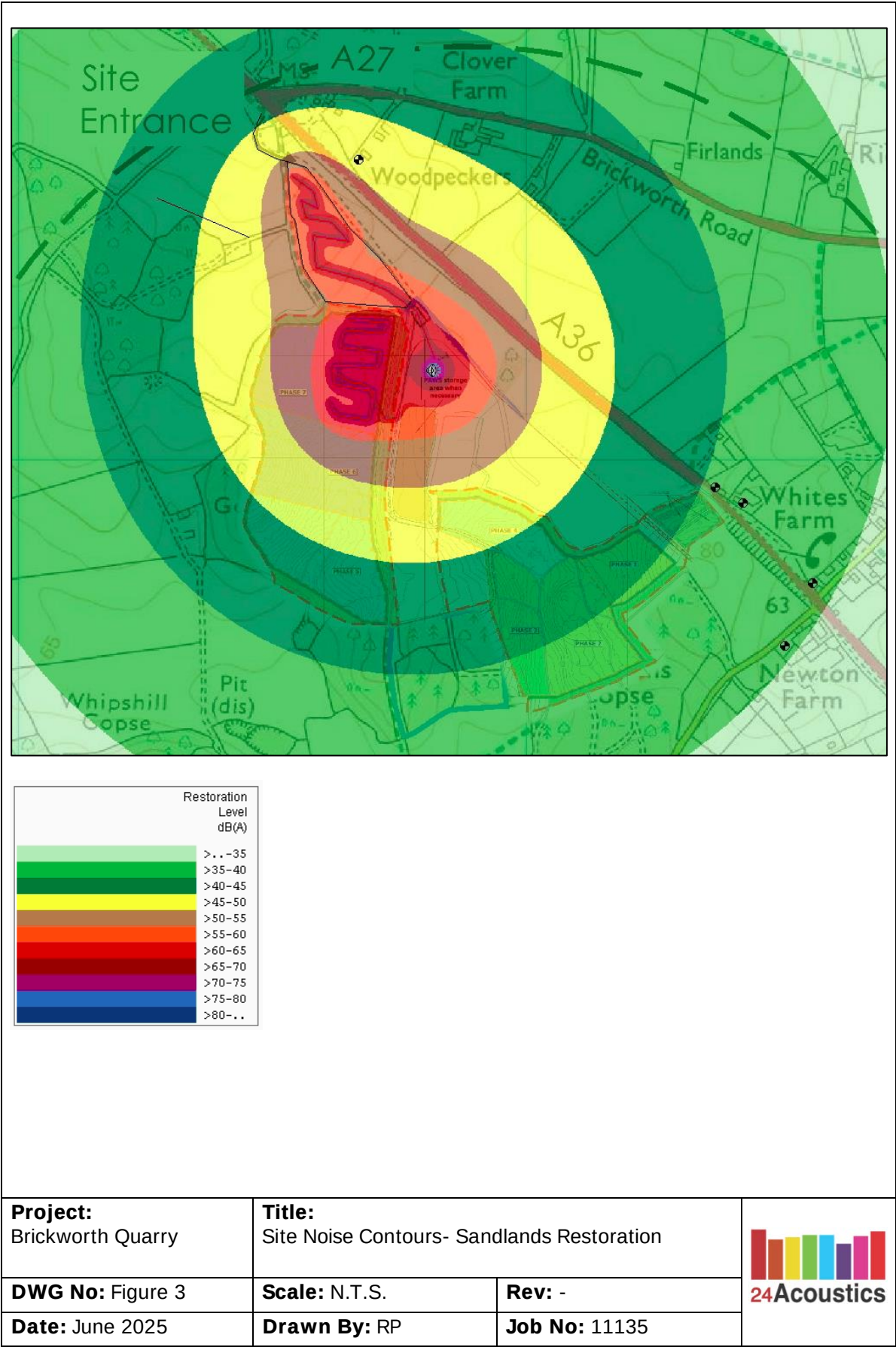
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Project: Brickworth Quarry	Title: Site, Receptor and Background Noise Survey Locations		
DWG No: Figure 1	Scale: N.T.S.	Rev: -	
Date: July 2025	Drawn By: RP	Job No: 11135	



Project: Brickworth Quarry		Title: Proposed Development Scheme	
DWG No: Figure 2	Scale: N.T.S.	Rev: -	
Date: June 2025	Drawn By: RP	Job No: 11135	



APPENDIX A: ACOUSTIC TERMINOLOGY

Noise is defined as unwanted sound. The range of audible sound is from 0 to 140 dB. The frequency response of the ear is usually taken to be around 18 Hz (number of oscillations per second) to 18000 Hz. The ear does not respond equally to different frequencies at the same level. It is more sensitive in the mid-frequency range than the lower and higher frequencies and because of this, the low and high frequency components of a sound are reduced in importance by applying a weighting (filtering) circuit to the noise measuring instrument. The weighting which is most widely used and which correlates best with subjective response to noise is the dBA weighting. This is an internationally accepted standard for noise measurements.

For variable sources, such as traffic, a difference of 3 dBA is just distinguishable. In addition, a doubling of traffic flow will increase the overall noise by 3 dBA. The 'loudness' of a noise is a purely subjective parameter, but it is generally accepted that an increase/ decrease of 10 dBA corresponds to a doubling/ halving in perceived loudness.

External noise levels are rarely steady, but rise and fall according to activities within an area. In attempt to produce a figure that relates this variable noise level to subjective response, a number of noise indices have been developed. These include:

- i) The L_{Amax} noise level

This is the maximum noise level recorded over the measurement period.

- ii) The L_{Aeq} noise level

This is "equivalent continuous A-weighted sound pressure level, in decibels" and is defined in British Standard BS 7445 [1] as the "value of the A-weighted sound pressure level of a continuous, steady sound that, within a specified time interval, T, has the same mean square sound pressure as a sound under consideration whose level varies with time".

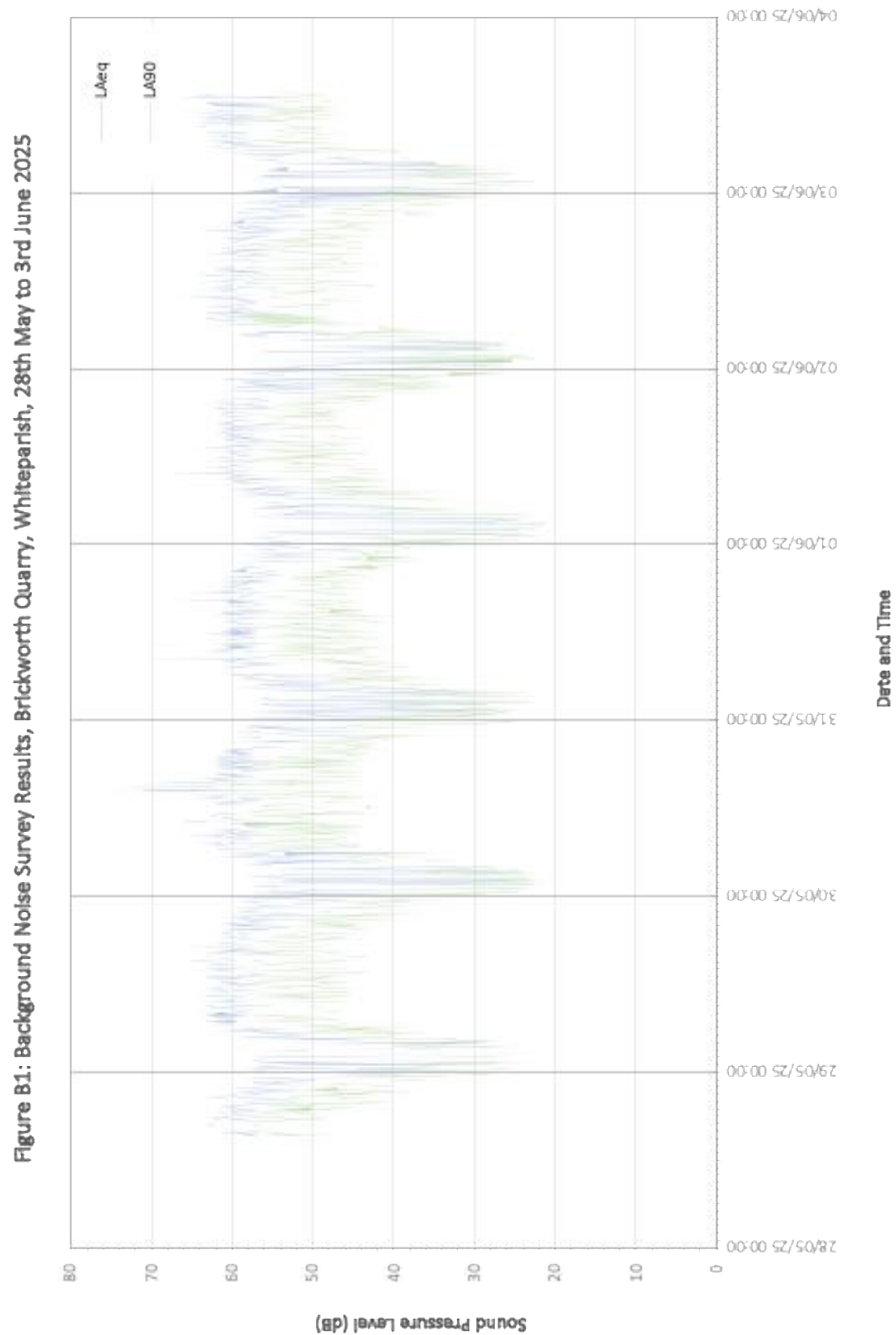
It is a unit commonly used to describe construction noise and noise from industrial premises and is the most suitable unit for the description of other forms of environmental noise. In more straightforward terms, it is a measure of energy within the varying noise.

iii) The L_{A10} noise level

This is the noise level that is exceeded for 10% of the measurement period and gives an indication of the noisier levels. It is a unit that has been used over many years for the measurement and assessment of road traffic noise.

iv) The L_{A90} noise level

This is the noise level that is exceeded for 90% of the measurement period and gives an indication of the noise level during the quieter periods. It is often referred to as the background noise level and is used in the assessment of disturbance from industrial noise.

APPENDIX B: BACKGROUND NOISE SURVEY RESULTS

APPENDIX C: PLANT SOURCE TERM NOISE DATA

	Overall	Octave Band Sound Power Level, dB							
	L _{Aw} , dB	63	125	250	500	1k	2k	4k	8k
Soil Stripping									
24 tonne Digger	103	102	108	103	101	97	94	88	79
2 dump trucks (haul road)	112	121	118	108	110	106	104	98	94
Sand Extraction									
24 tonne Digger	103	102	108	103	101	97	94	88	79
3 dump trucks (haul road)	114	123	120	110	112	108	106	100	96
Backfilling/ Restoration									
Bulldozer	107	109	110	105	104	102	100	94	90
2 hgvs (haul road)	101	107	107	96	96	95	95	88	82
Processing Plant									
Terex 1400 Screen & Volvo Wheeled Loader	110	120	116	109	105	104	102	98	91

Table C1: Source-term Plant Noise Levels

APPENDIX D: CALCULATED RECEPTOR NOISE LEVELS

	Fine View		Woodpeckers	
Phase 8- Restoration	30.4	30.4	38.9	38.9
Phase 9- Soil Stripping	22.4		41.4	
Phase 9- Excavation & Restoration		27.9		46.7
Processing	37.2	37.2	41.7	41.7
Total	38.1	38.4	45.6	48.4

Table D1: Calculated Receptor Noise Levels

APPENDIX E: SITE OPERATIONAL NOISE LEVELS RELATIVE TO BACKGROUND LEVELS

Period of Operation and Noise Level	Receptor and Operation			
	Woodpeckers		Fine View	
	Soil Stripping	Excavation	Soil Stripping	Excavation
Weekdays				
Background noise level, dB $L_{A90, 1 \text{ hr}}$	49	49	49	49
Operational Noise Level, dB $L_{Aeq, 1 \text{ hour}}$	46	48	38	38
Difference above b / g, dB	-3	-1	-11	-11
Saturday mornings				
Background noise level, dB $L_{A90, 1 \text{ hr}}$	47	47	47	47
Operational Noise Level, dB $L_{Aeq, 1 \text{ hour}}$	46	48	38	38
Difference above b / g, dB	-1	1	-9	-9

Table E1: Site Operational Noise Levels & Background Levels