Crimson Remote Services Ltd

BS4142 Assessment of Former Cae Glas Colliery, Fochriw, Rhymney CF81 8JN

June 12th 2026

Prepared by:

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1.0 Introduction

1.0.1 This report has been commissioned to determine the noise impact of the plant noise and internal machinery at the Former Cae Glas Colliery, Fochriw, Rhymney.

1.0.2 The assessment has been conducted in line with the BS4142:2014 in order to assess the industrial sources with the potential for noise impact on surrounding residential properties.

2.0 Site Details

2.0.1 The building contains processing units and delivery vehicles contained within the main structure. The assessment has been conducted to assess the impact of this proposed laudrette on the surrounding residential Noise Sensitive Receptors (NSRs).

2.0.2 The closest Noise Sensitive Receptors (NSRs) are located in the village of Fochriw to the East of the proceesing area. The remaining directions around the site are open fields and grasslands.

2.0.3 Background noise surveys were conducted at 2 locations to the East of the plant area. A further attended assessment was conducted within the main building with all sources active. This was to create the worst-case scenario for the noise impact on the surrounding area.

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2.1 Location of Monitors

2.1.1 The noise location was chosen based on the proximity to the closest NSR.

Figure 1 – Guest Street

Figure 2 – Brook Row

Figure 3 – Internal Measurement

2.1.2 Measurements were made in 15 minute periods, on 1 second averaging, to allow for the removal of anomalies and increased accuracy. The data was averaged into L_{Aeq1hr} daytime and $L_{Aeq15min}$ night-time with data also recorded for L_{A90} in both day and night periods for the BS4142:2014 assessment.

2.1.3 The monitoring was conducted using 3 x Type 1 Nti XL2 sound level meter with batteries and outdoor microphone protection.

2.1.4 All measurements were taken after a field calibration was undertaken to ensure accuracy and repeatability of measurements. Drift was also checked post-measurement to validate the data collected.

2.1.5 Further data such as wind speed, wind direction, rainfall intensity, temperature and cloud cover were all recorded at the beginning and end of the assessment at the monitoring location.

2.1.6 Any anomalies (such as noise by the engineer during setup and collection of the kit) were removed from the survey for a true reflection of the ambient levels in the vicinity. This was done by recording audio throughout the survey at each location and listening back through the files during the analysis process to confirm what was recorded manually during the survey.

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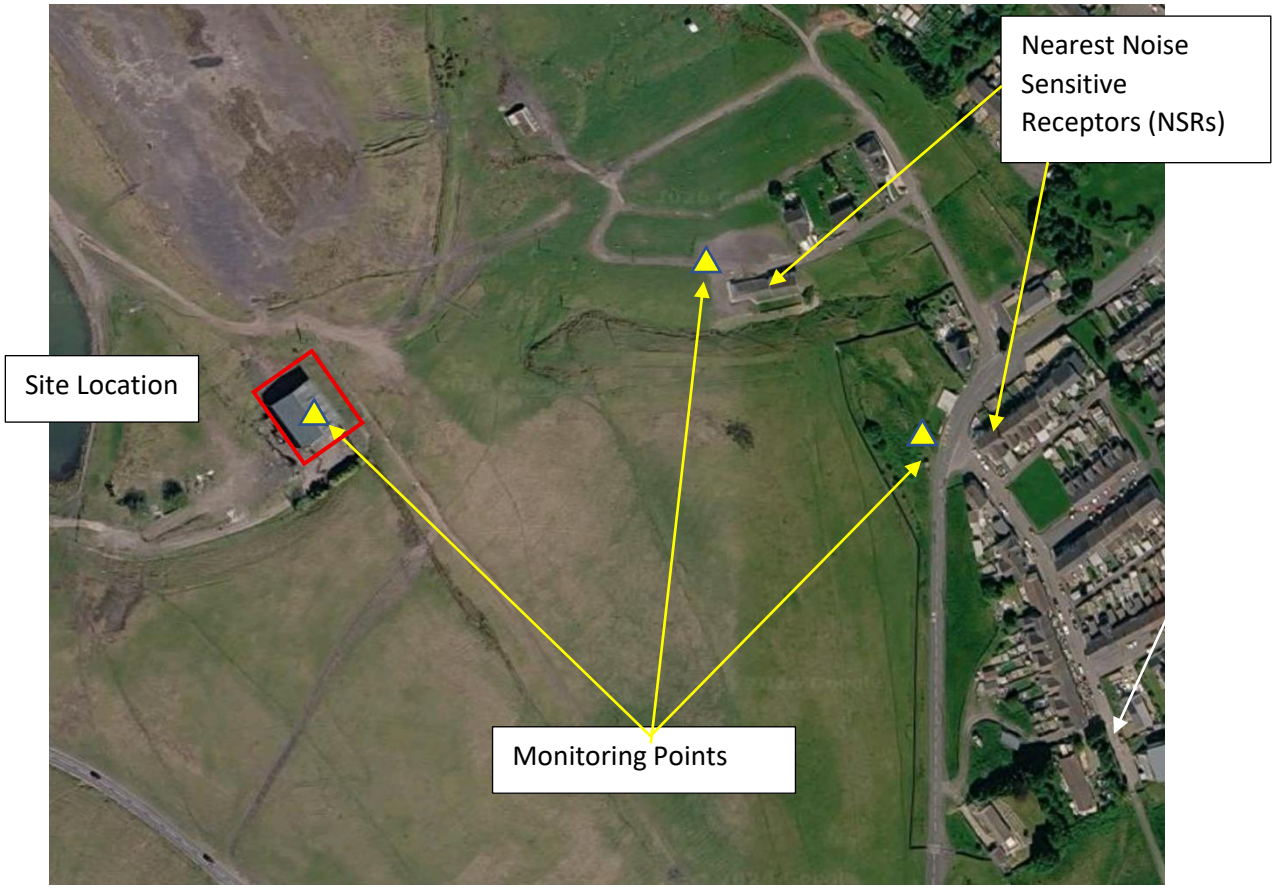
2.2 Plan Views of Site with Designated Work Areas

Figure 4



3.0 Legislation - National Planning Practice Framework

3.0.1 The Planning Policy Wales sets out the Government's economic, environmental and social planning policies. Section 3.22 states;

"*Planning authorities should develop and maintain places that support healthy, active lifestyles across all age and socio-economic groups, recognising that investment in walking and cycling infrastructure can be an effective preventative measure which reduces financial pressures on public services in the longer term. The way a development is laid out and arranged can influence people's behaviours and decisions and can provide effective mitigation against air and noise pollution.*"

3.0.2 The guidance also sees traffic consideration and management as key when it comes to noise impact assessments. Section 4.1.45 states

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"Local authorities must adopt an integrated approach to traffic management. They should consider how different measures can complement one another and contribute to the achievement of wider planning and transport objectives, implementing the Active Travel Act and reducing exposure to air and noise pollution, taking into account the needs of the disabled and less mobile sections of the community."

3.0.3 Section 6 of the document also tackles the likely social and well-being impacts of the preservation of 'distinctive and natural places'. Section 6.7.1 refers to the need to protect the soundscape of areas;

"Clean air and an appropriate soundscape, contribute to a positive experience of place as well as being necessary for public health, amenity and well-being. They are indicators of local environmental quality and integral qualities of place which should be protected through preventative or proactive action through the planning system. Conversely, air, noise and light pollution can have negative effects on people, biodiversity and the resilience of ecosystems and should be reduced as far as possible."

This is then continued in reference to noise in section 6.7.4;

"The planning system should maximise its contribution to achieving the well-being goals, and in particular a healthier Wales, by aiming to reduce average population exposure to air and noise pollution alongside action to tackle high pollution hotspots. In doing so, it should consider the long-term effects of current and predicted levels of air and noise pollution on individuals, society and the environment and identify and pursue any opportunities to reduce, or at least, minimise population exposure to air and noise pollution, and improve soundscapes, where it is practical and feasible to do so."

3.0.4. It is possible to apply objective standards to the assessment of noise and the effect produced by the introduction of a certain noise source may be determined by several methods, as follows:

- The effect may be determined by reference to guideline noise values. British Standard (BS) 8233:2014 and World Health Organisation (WHO) "Guidelines for Community Noise" contain such guidelines.

Another method is to compare the resultant noise level against the background noise level (L_{A90}) of the area. This is the method employed by BS 4142:2014 to determine the likelihood of complaint from noise of an industrial nature. It is best suited to the assessment of steady or pseudo-steady noise.

3.1 BS4142:2014 +A1 (2019)

3.1.1 Noise effects on residential properties have been assessed according to the guidance in BS 4142:2014. This standard primarily provides a numerical method by which to determine the significance of sound of an industrial nature (i.e. the 'specific sound' from the proposed development) at residential sensitive receptors.

3.1.2 The specific sound level may then be corrected for the character of the sound (e.g. perceptibility of tones and/or impulses), if appropriate, and it is then termed the 'rating level', whether or not a rating penalty is applied. The 'residual sound' is defined as the ambient sound remaining at the assessment location when the specific sound source is suppressed to such a degree that it does not contribute to the ambient sound.

3.1.3 According to BS 4142:2014, the background sound levels adopted for the assessment should be representative of the periods being assessed. The standard recommends that the background sound level should be collected from continuous measurements of normally not less than 15-minute intervals. However, the Standard states that there is no 'single' background sound level that can be derived from such measurements. It is particularly difficult to determine what is 'representative' of the night-time period because it can be subject to a wide variation in background sound levels between the shoulder night periods.

3.1.4 The method chosen for this section of the report is to use the data collected at the nearest NSR for the day and night periods to provide the ambient and background noise levels. The mode ($L_{Aeq\_1hr(Day)}$ and $L_{Aeq\_15min(Night)}$) value will then be used for each time period over the course of the measurement as the most appropriate way of creating a representative value.

3.1.5 The specific sound levels have been determined separately in terms of the L_{Aeq1hr} during the daytime $L_{Aeq15min}$ during the night-time. Daytime is typically between 07:00 and 23:00 hours and night-time is typically between 23:00 and 07:00 hours, so these periods have been adopted for this assessment.

3.1.6 At each of the most likely sensitive receptor locations, the rating level has been determined from the predicted specific sound level. Where it has considered it to be appropriate, a rating penalty has been applied for tonality, impulsivity and/or intermittent specific sounds as described in the commentary to paragraph 9.2 of BS4142:2014. This has been applied with consideration for the main sound sources from site that contribute to the level of specific sound at the receptor location.

3.1.7 As per the requirements of the standard, an initial estimate of the impact of the specific sound has been obtained by subtracting the measured background sound level from the rating level of the specific sound. Table 1 provides the initial evaluation of impact following this method.

Table 1

Magnitude	Difference Between rating Level and Background Level	Comments
High	**+10dB**	**Significant Adverse impact Likely**
Medium	**+5 to +10dB**	**Adverse impact Likely**
Low	**0 to +5 dB**	**Adverse impact unlikely**
Negligible	**Less than 0dB**	**Low chance of Adverse Impact**

3.1.8 Following the initial evaluation of impact, the context of the sound has also been considered, which is a key requirement of the Standard. In evaluation of the context, the following factors have been considered:

- the absolute level of the sound;
- the character and level of the residual sound compared to the character and level of the specific sound and
- the sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions.

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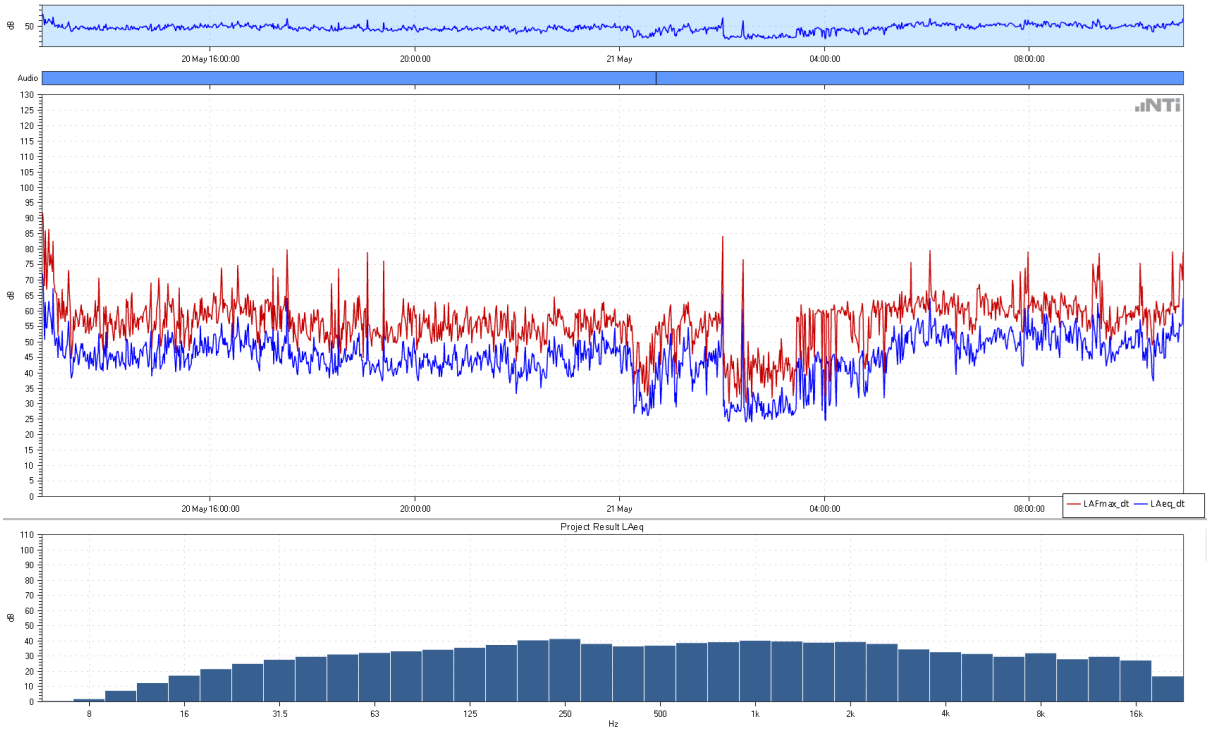
4.0 Results

4.1 – Guest Street (East) – 12.43pm 20/05/26 – 11.00am 21/05/26

Table 2

Time Period	L_{Amax} (Mode)	L_{Aeq1hr} (Mode)	$L_{Aeq15min}$ (Mode)	L_{A90} (Representative of when source is inactive)
Day (0700-2300)	85.2dBA	47.7dBA		39.9dBA
Night (2300-0700)	78.2dBA		44.5dBA	29.7dBA

Figure 5



Comments

Occasional traffic pass-by noise. Some birdsong

**based on Appendix C*

Time Period	Cloud Cover	Temperature (Celcius)	Prescence of fog/snow/ice	Wind Speed (m/s)	Wind Direction
Daytime	1	18	No	2.9	N
Collection	1	17	No	2.2	N

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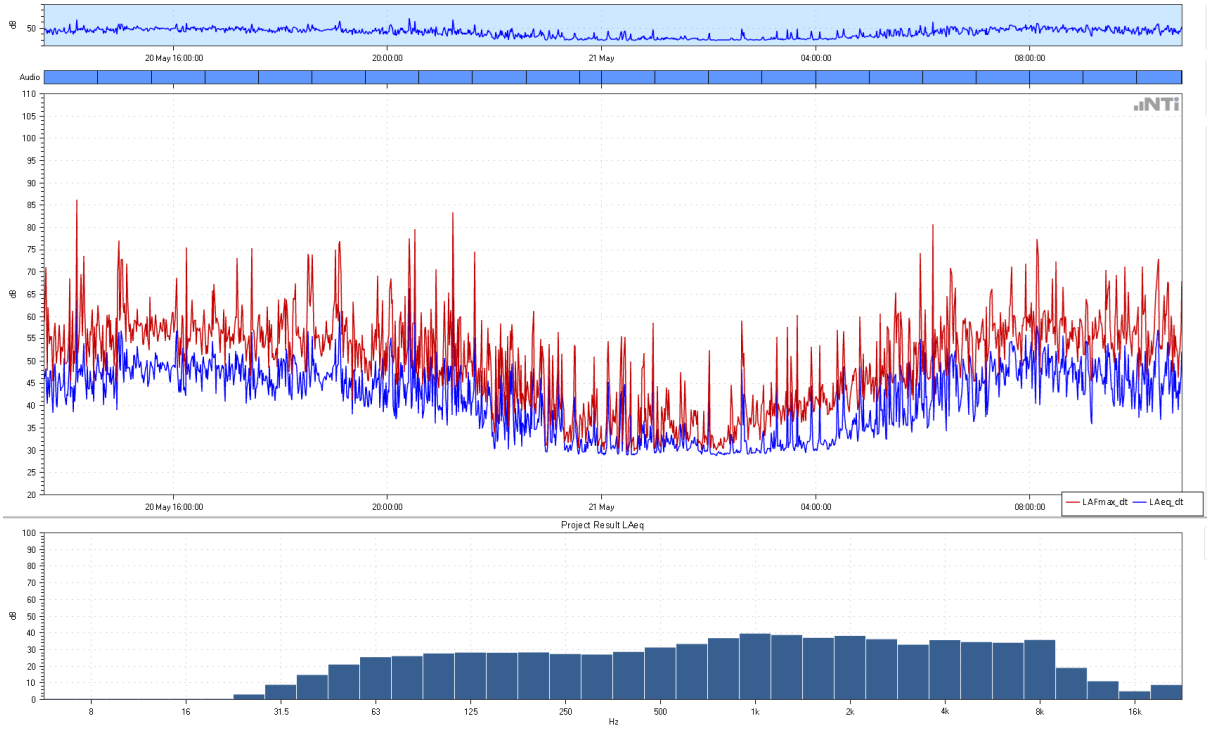
4.2 – Brook Row -13.35pm 20/05/26 – 10.45am 21/05/26

Table 3

Time Period	L_{Amax} (Mode)	L_{Aeq1hr} (Mode)	$L_{Aeq15min}$ (Mode)	L_{A90} (Representative)
Day (0700-2300)	68.4dBA	49.6dBA		35.2dBA
Night (2300-0700)	59.4dBA		32.1dBA	28.6dBA

Figure 6



Comments

Low-level background nosie from traffic and some bidsong near to the microphone causing exaggerated spikes.

**based on Appendix C*

Time Period	Cloud Cover	Temperature (Celcius)	Prescence of fog/snow/ice	Wind Speed (m/s)	Wind Direction
Installation	1	18	No	2.9	N
Collection	1	16	No	2.7	NE

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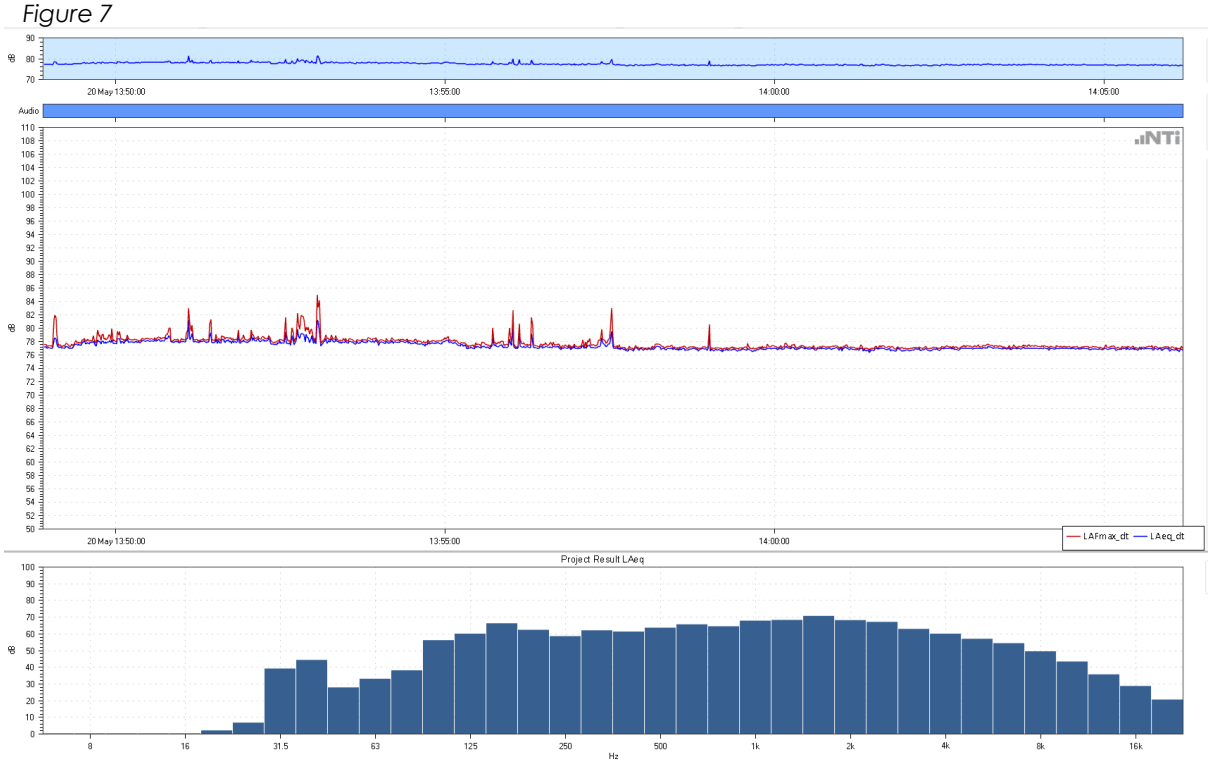
4.3 – Internal -13.48pm 20/05/26 – 14.06pm 20/05/26

Table 4

Time Period	L_{Amax} (Mode)	$L_{Aeq15min}$ (Mode)	L_{A90} (Representative)
Attended	77.2dBA	76.8dBA	76.4dBA

Figure 7



Comments

Constant noise source within building when fully operational. Possible tones at 31.5Hz & 40Hz

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5.0 Analysis of Results

5.1 Calculated Results

5.1.1 The specific noise level for the units in the plant area has been calculated using the measured data at the plant location and then propagating this over the land to the nearest NSR.

5.1.2 Background data was collected at two locations in the village of Fochriw. This was then used as the comparison to the predicted noise impact from the processing plant location.

5.1.3 As a first point of comparison a simple distance correction was used to assess the noise. This was based on the shutter doors of the building being open and a direct line-of-sight to the receiver lcoations. In reality the processing plant building is orientaed perpendicular to Gest Street and on approximately a 45 degree angle to the NSRs on Brook Row. Both of these factors would reduce the spefic noise level further.

5.1.4 The following calcs were used:

Guest Street

$$Lp1 = Lp2 + 20Log\left(\frac{R2}{R1}\right)$$

Where;

- L1 = Sound Pressure at Point 1
- L2 = Sound Pressure at Point 2 (77dBA)
- R1 = Distance from source to Point 1 (1m)
- R2 = Distance from source to Point 2 (195m)

Lp2 =**31dBA**

Brook Row

- L1 = Sound Pressure at Point 1
- L2 = Sound Pressure at Point 2 (77dBA)
- R1 = Distance from source to Point 1 (1m)
- R2 = Distance from source to Point 2 (300m)

Lp2 =**27dBA**

5.1.5 Theses figures can be used to compare to the BS4142:2014 assessment table as guide levels. With the addition of angle of incident, ground attenuation, terrain etc the resulting figure will be lower than is presented in table 5 & 6.

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Table 5 – BS4142:2014 Comparison table

Measurement Type	*Parameter*	*Result*	*Comment*
Guest Street Day			
Ambient sound	L_{Aeq}	**48dBA**	Measured - Source not present
Residual sound level	$L_{Aeq5min}$	**48dBA**	Measured - Source not present
Background sound level	L_{A901hr}	**40dBA**	Measured - Source not present
Specific Sound Level	L_{Aeq1hr}	**31dBA**	Calculated
Acoustic Feature Correction	**dBA**	**+2**	Potential tonal source
Rating Level	**dBA**	**33dBA**	
Difference of Background vs Rating level	**dBA**	**-7dB**	
Likelihood of complaints			No Adverse Impact
Night			
Ambient sound	L_{Aeq}	**45dBA**	Measured - Source not present
Residual sound level	L_{Aeq1hr}	**45dBA**	Measured - Source not present
Background sound level	L_{A901hr}	**30dBA**	Measured - Source not present
Specific Sound Level	L_{Aeq1hr}	**31dBA**	Calculated
Acoustic Feature Correction	**dBA**	**+2**	Potential tonal source
Rating Level	**dBA**	**33dBA**	
Difference of Background vs Rating level	**dBA**	**+3dB**	
Likelihood of complaints			Low Chance of Adverse Impact

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Table 6 – BS4142:2014 Comparison table

Measurement Type	*Parameter*	*Result*	*Comment*
Guest Street Day			
Ambient sound	L_{Aeq}	**50dBA**	Measured - Source not present
Residual sound level	$L_{Aeq5min}$	**50dBA**	Measured - Source not present
Background sound level	L_{A901hr}	**35dBA**	Measured - Source not present
Specific Sound Level	L_{Aeq1hr}	**27dBA**	Calculated
Acoustic Feature Correction	**dBA**	**+2**	Potential tonal source
Rating Level	**dBA**	**29dBA**	
Difference of Background vs Rating level	**dBA**	**-6dB**	
Likelihood of complaints			No Adverse Impact
Night			
Ambient sound	L_{Aeq}	**32dBA**	Measured - Source not present
Residual sound level	L_{Aeq1hr}	**32dBA**	Measured - Source not present
Background sound level	L_{A901hr}	**29dBA**	Measured - Source not present
Specific Sound Level	L_{Aeq1hr}	**27dBA**	Calculated
Acoustic Feature Correction	**dBA**	**+2**	Potential tonal source
Rating Level	**dBA**	**29dBA**	
Difference of Background vs Rating level	**dBA**	**-0dB**	
Likelihood of complaints			Low Chance of Adverse Impact

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6.0 Conclusion and Further Comments

6.1 Discussion of Levels

6.1.1 The specific noise level of the processing plant units are below the values, in accordance with BS4142:2014+A1:2019, for there to be any adverse impact expected on the surrounding residential noise sensitive receptors. This is both during the daytime and night-time period.

6.1.2 The calculations above are basic level to show that all of the other considerations such as line-of-sight, attenuation of the building, ground absorption etc are not required to demonstrate the compliance with BS4142:2014. The calculationsa above are based on an open free-field source rather than the contained building with a possible break-out noise area to the front if the shutters remain up during operations. All of these factors would reduce the specific noise level further and mean a further lessened impact on the surrounding NSRs.

6.2 Mitigation Measures

6.2.1 No additional mitigation measures are required for the site.

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7.0 Credentials

Name	Title	Credentials
James Flitton BSc AMIOA	**Acoustic Consultant**	**IOA Diploma in Acoustics & Noise Control**
		Associate Member Institute of Acoustics
		Affiliate Member of IDE
		CSCS Professionally Qualified person
Signed		

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Appendix A – Acoustic Terminology

Parameter	Description
Ambient Noise Level	The totally encompassing sound in a given situation at a given time, usually composed of a sound from many sources both distant and near ($L_{Aeq,T}$).
Decibel (dB)	A scale for comparing the ratios of two quantities, including sound pressure and sound power. The difference in level between two sounds s1 and s2 is given by 20 log10 (s1/s2). The decibel can also be used to measure absolute quantities by specifying a reference value that fixes one point on the scale. For sound pressure, the reference value is 20μPa. The threshold of normal hearing is in the region of 0 dB and 140 dB is the threshold of pain. A change of 1 dB is only perceptible under controlled conditions.
dB(A), L_{Ax}	Decibels measured on a sound level meter incorporating a frequency weighting (A weighting) which differentiates between sounds of different frequency (pitch) in a similar way to the human ear. Measurements in dB(A) broadly agree with people's assessment of loudness. A change of 3 dB(A) is the minimum perceptible under normal conditions, and a change of 10 dB(A) corresponds roughly to halving or doubling the loudness of a sound. The background noise in a living room may be about 30 dB(A); normal conversation about 60 dB(A) at 1 metre; heavy road traffic about 80 dB(A) at 10 metres; the level near a pneumatic drill about 100 dB(A).
Fast Time Weighting	Setting on sound level meter, denoted by a subscript F, that determines the speed at which the instrument responds to changes in the amplitude of any measured signal. The fast time weighting can lead to higher values than the slow time weighting when rapidly changing signals are measured. The average time constant for the fast response setting is 0.125 (1/8) seconds.
Free-field	Sound pressure level measured outside, far away from reflecting surfaces (except the ground), usually taken to mean at least 3.5 metres
Façade	Sound pressure level measured at a distance of 1 metre in front of a large sound reflecting object such as a building façade.
$L_{Aeq,T}$	A noise level index called the equivalent continuous noise level over the time period T. This is the level of a notional steady sound that would contain the same amount of sound energy as the actual, possibly fluctuating, sound that was recorded.
$L_{max,T}$	A noise level index defined as the maximum noise level recorded during a noise event with a period T. L_{max} is sometimes used for the assessment of occasional loud noises, 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.
$L_{10,T}$	A noise level index. The noise level exceeded for 10% of the time over the period T. L_{10} can be considered to be the "average maximum" noise level. Generally used to describe road traffic noise. $L_{A10,18h}$ is the A –weighted arithmetic average of the 18 hourly $L_{A10,1h}$ values from 06:00-24:00.
$L_{90,T}$	A noise level index. The noise level exceeded for 90% of the time over the period T. Generally used to describe background noise level.

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Appendix B – Survey Instrumentation

Type	Manufacturer	Model	Serial Number	Last Cal	Cal Due
SLM	NTi	XL2-TA	A2A-18475-E0	12/11/2024	12/11/2026
Pre-amp	NTi	MA220	9378	12/11/2024	12/11/2026
Microphone	NTi	MC230A	A19093	12/11/2024	12/11/2026
Calibrator	NTi	CAL200	10393	14/01/2026	14/01/2028
SLM	NTi	XL3-TA	A3A-1773-FO	09/07/2025	09/07/2027
Pre-amp	NTi	MA220	15205	09/07/2025	09/07/2027
Microphone	NTi	MC230A	A31329	09/07/2025	09/07/2027
SLM	NTi	XL2-TA	A2A-27232-E1	16/04/2026	15/04/2028
Pre-amp	NTi	MA220	16043	16/04/2026	15/04/2028
Microphone	NTi	MC230A	A33542	16/04/2026	15/04/2028

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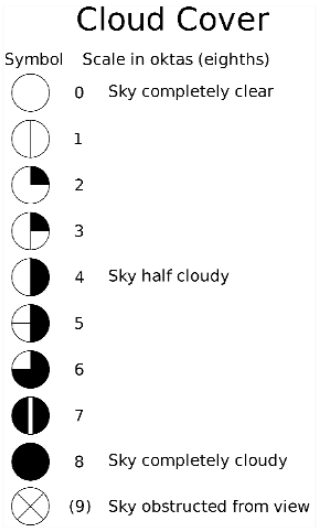
Appendix C – Weather Conditions Chart Used

Weather Conditions				
Measurement Location	**Date/Time**	**Description**	**Beginning of Survey**	**End of Survey**
		Temperature:		
		Precipitation:		
		Cloud cover (oktas - see guide)		
		Presence of fog/snow/ice		
		Presence of damp roads/wet ground		
		Wind Speed (m/s)		
		Wind Direction		
		Conditions that may cause temperature inversion (i.e. calm nights with no cloud)		

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