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RIVERDALE DEVELOPMENTS LIMITED

PONDTAIL FARM, HORSHAM

NOISE AND VIBRATION ASSESSMENT

DECEMBER 2024

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1. INTRODUCTION

1.1.1 Southdowns Environmental Consultants Ltd was commissioned in July 2020 by Riverdale Developments Limited to undertake a noise and vibration assessment of a proposed residential development at Pondtail Farm in Horsham, West Sussex.

1.1.2 The assessment has been prepared to accompany a planning application for the proposed development comprising of 300 residential dwellings and 50 car parking spaces.

1.1.3 Noise levels measured on the site have been used to assess the potential impacts of environmental noise on the proposed development using noise criteria detailed in British Standard (BS) 8233:2014 [1], BS 4142:2014+A1:2019 [2] and other noise guidelines including Professional Practice Guidance on Planning & Noise (ProPG) [3] and the World Health Organisation (WHO) Guidelines for community noise [4].

1.1.4 Generic noise mitigation measures have been identified with the aim of achieving desirable internal noise levels in habitable rooms following the guidance given in the Sussex Planning Noise Advice Document [5].

1.1.5 Vibration magnitudes measured on site have been used to assess human exposure to vibration following the principles of the assessment methodology described in BS 6472-1:2008 [6].

1.1.6 The noise and vibration levels, guidance and assessment criteria are summarised in Section 2 of this report. The existing site and the development proposals are described in Section 3. A noise and vibration survey undertaken on site is described in Section 4, and the survey results are presented in Section 5. Details of the noise modelling of the proposed development are described in Section 6 and the noise assessment is presented in Section 7. A vibration assessment is presented in Section 8. Noise mitigation options are discussed in Section 9 and the findings of the assessment are summarised in Section 10. Figures and tables referred to in the report are presented in Appendices A and B, respectively. Finally, equipment details including calibration certificates are provided in Appendix C.

2. NOISE LEVELS, VIBRATION UNITS AND CRITERIA

2.1 Noise Levels

2.1.1 Noise and sound are measured on a logarithmic scale in decibels (dB) because of the ears' sensitivity to a wide range of pressure changes. The sound pressure level (SPL) of a signal is denoted by the symbol L_p and defined by the equation $L_p = 10 \log (p/p_o)^2$ where p is the root mean square pressure of the signal and p_o is the reference sound pressure (2×10^{-5} Pa).

2.1.2 The human auditory system is capable of detecting sounds over a frequency range of 20 Hz to 20 kHz. Because the ear is most sensitive to sounds with frequencies between 1 and 5 kHz, an A-weighting network is used to reflect the differential sensitivity of human hearing to sounds of different frequency. The A-weighting sound pressure level, L_{pA}, is measured on a scale defined by the dB(A).

2.1.3 Community response to environmental noise sources is dependent on both acoustic and non-acoustic factors. The acoustic factors include absolute sound level, changes or exceedances of background or ambient levels as well as the characteristics, time, duration, and frequency of noise. National and local planning guidelines for noise assessment are set out below.

2.1.4 The dB(A) level is commonly used for the measurement and assessment of environmental noise due to the relationship between the subjective impression of the auditory strength of a sound, otherwise known as loudness, and the A-weighted sound pressure level of that sound. A change in 3 dB is the minimum perceptible change in event noise levels under normal everyday listening conditions, whilst a 10 dB increase or decrease in the sound pressure level of a steady sound generally corresponds to a perceived doubling or halving of loudness.

2.1.5 An indication of the range of sound pressure levels commonly found in the environment is given below:

Location	L_p dB(A)
Normal threshold of hearing	-10 to 20
Music halls and theatres	20 to 30
Living rooms and offices	30 to 50
Inside motor vehicles	50 to 70
Industrial premises	70 to 100
Burglar alarms at 1 m	100 to 110
Jet aircraft on take-off	110 to 130
Threshold of pain	130 to 140

2.1.6 The $L_{A90,T}$ *background* sound level is defined by the A-weighted sound pressure level of the ambient sound exceeded for 90% of a given time interval, T. This provides a measure of the lower levels of a fluctuating sound and is normally defined separately for day and night-time periods. Other percentiles are also sometimes used to describe the levels of ambient sound exceeded for different periods of time. The $L_{A50,T}$ and $L_{A10,T}$ sound levels denote the level of ambient sound exceeded for 50 and 10% of the time T, respectively whilst the $L_{Amax,F}$ sound level denotes the maximum instantaneous sound level in any given period of time obtained using the FAST time weighting.

2.1.7 The equivalent continuous sound pressure level is denoted by the symbol $L_{Aeq,T}$ and is defined as the notional steady sound which, at a given position over a defined period of time, T, has the same A-weighted acoustic energy as the actual fluctuating sound. This average sound level is used in the UK for the measurement of noise from most sources including industry,

construction, railways and aircraft and is widely used for the measurement of ambient sound, which comprises sound from all sources in the environment.

2.2 Vibration Units

2.2.1 Vibration is the oscillation of particles in an object or surface about a mean stationary position. The number of times a particle oscillates back and forth from its mean position per second defines the frequency of the vibration in Hertz (Hz). The distance a particle moves from its mean position is described as displacement, and is usually measured in m or mm. Vibrations can occur in one or more of three axes with respect to the direction of vibration propagation or the orientation of the receiver: radial, perpendicular and/or vertical, which are referred to as x, y and z respectively.

2.2.2 Depending on the type of vibration excitation, vibrations in an object can occur at a single frequency or at a number of different frequencies and can be categorised as periodic, random or transient.

2.2.3 Vibration is described as periodic if the vibration motion repeats after a time period. This type of vibration is also known as being deterministic, as the vibration induced in the object can be predicted. Frequencies contained in periodic vibrations usually consist of a fundamental frequency and frequencies appearing at multiples of the fundamental frequency, known as harmonics. Periodic vibration can typically be found in machinery or plant with rotating parts that operate at a certain forcing frequency.

2.2.4 Random vibrations, in contrast to periodic vibrations, are particle oscillations that are not repetitive and are therefore difficult to predict. Random vibration typically contains a broad spectrum of frequencies and is described in statistical terms. This type of vibration is also described as non-deterministic.

2.2.5 Transient vibration consists of a short burst of vibration energy, which then decays away after excitation. The decay of the vibration energy will depend on the vibration frequency and damping characteristics of the vibrating object or surface. The hammer blow of a piling rig is a typical source of transient vibration.

2.2.6 As well as displacement, vibration can also be described and measured in terms of velocity and acceleration.

2.2.7 Velocity is a measure of the rate at which the displacement changes with time (mm/s), and can be specified in terms of either Peak Particle Velocity (PPV), or as a root mean square (rms) value. PPVs can be expressed in terms of component or resultant. A component PPV is the highest PPV occurring in the x-, y- or z-axis. PPV is widely used for the assessment of vibration on structures, utilities and other sensitive equipment (including computers and laboratory equipment).

2.2.8 Acceleration defines the rate at which velocity changes with time (m/s^2), and is commonly expressed as an rms value (a_{rms}). In the UK, frequency weighted a_{rms} values are used for the evaluation of human exposure to vibration with regards to annoyance and comfort of occupants inside buildings.

2.3 Human Vibration Response

2.3.1 The human body has a complicated frequency response and has different resonances associated with the whole body and individual body parts. This makes different areas of the body more sensitive to different vibration frequencies. The threshold of perceptible vibration of

humans is generally very low and is typically around 0.14 to 0.3 mms^{-1} at frequencies between 8 Hz and 80 Hz.

2.3.2 Generally, the main transfer of building vibration into a human is either via a person standing on a vibrating floor or via vibrations transferred from the floor into a seat or bed and then into a person's body.

2.3.3 Perceptible vibration inside buildings can give rise to discomfort, disturbance and/or activity interference, as well as giving rise to concerns about building damage. The degree of annoyance someone may experience from the vibration can depend on a number of factors such as: the characteristics of vibration i.e. frequency (typically between 1 Hz and 80 Hz), duration, magnitude, continuous/transient/intermittent; time of day; audible noise that may accompany the vibration; and, the activity someone may be undertaking.

2.3.4 A method to assess human exposure to vibration in buildings is set out in BS 6472-1:2008, Guide to evaluation of human exposure to vibration in buildings, part 1: vibration sources other than blasting. This Standard provides a basis for the evaluation of vibration measurements or calculations in terms of the possibility of adverse comment from building occupants, based on upon the criteria presented in Table 2.1.

Place and time	Low probability of adverse comment	Adverse comment possible	Adverse comment probable
Residential buildings 16 h day	0.2 to 0.4 *(0.4 to 0.8)*[2]	0.4 to 0.8 *(0.8 to 1.6)*[2]	0.8 to 1.6 *(1.6 to 3.2)*[2]
Residential buildings 8 h night	0.1 to 0.2	0.2 to 0.4	0.4 to 0.8

TABLE 2.1: VIBRATION DOSE VALUES ($M/S^{1.75}$) ABOVE WHICH VARIOUS DEGREES OF ADVERSE COMMENT MAY BE EXPECTED IN RESIDENTIAL BUILDINGS

Note: 1) Below these ranges adverse comment is not expected
2) Numbers in parenthesis indicates vibration dose ranges for offices.

2.3.5 The standard goes on to indicate that value ranges are less stringent for offices and workshops and suggests applying multipliers of 2 and 4, respectively, to the above vibration dose ranges for a 16 hr day, i.e. daytime only on the basis that offices and workshops will not be occupied/in use at night.

2.3.6 The Standard defines a procedure for the calculation of a Vibration Dose Value (VDV), which is used to estimate the probability of adverse comment that might be expected from occupants experiencing vibration inside a building. The VDV is defined by the equation:

$$VDV = \left(\int_0^T a^4(t)dt\right)^{\frac{1}{4}}$$

where:

a(t) = the weighted acceleration at time t in m/s^2 and the integration time, T, is the total day or night-time period of interest in seconds.

2.3.7 VDV is described as the fourth root of the integral of the fourth power of vibration value with respect to time. Evaluation of vibration using a VDV places more emphasis on the amplitude

of the vibration event, as opposed to the duration. This means that a doubling of amplitude of a vibration event is equivalent to a 16-fold increase in the duration of the event.

2.4 National Noise Policy and Planning Policy Framework

Noise Policy Statement for England (NPSE)

2.4.1 The Noise Policy Statement for England (March 2010) [7], sets out the long-term vision of Government noise policy.

2.4.2 The vision of the NPSE is to 'Promote good health and a good quality of life through the effective management and control of noise within the context of Government policy on sustainable development'. This vision is supported by three key aims:

- avoid significant adverse impacts on health and quality of life;
- mitigate and reduce to a minimum other adverse impacts on health and quality of life; and
- where possible, contribute to the improvement of health and quality of life.

2.4.3 The NPSE applies to most forms of noise, including environmental noise, neighbour noise and neighbourhood noise, but not occupational noise in the workplace.

2.4.4 The NPSE has adopted the following concepts to help consider whether noise is likely to have 'significant adverse' or 'adverse' effects on health and quality of life:

NOEL – No Observed Effect Level

This is the level below which no effect can be detected. In simple terms, below this level, there is no detectable effect on health and quality of life due to noise.

LOAEL – Lowest Observed Adverse Effect Level

This is the level above which adverse effects on health and quality of life can be detected.

SOAEL – Significant Observed Adverse Effect Level

This is the level above which significant adverse effects on health and quality of life occur.

2.4.5 The NPSE goes on to state that:

"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."

National Planning Policy Framework

2.4.6 The Government's National Planning Policy Framework (NPPF) came into force in March 2012 and was most recently updated in July 2021 [8]. It sets out the Government's planning policy for England and how it should be applied. The NPPF replaced a number of planning policy guidance documents, including the now archived Planning Policy Guidance 24: Planning and Noise.

2.4.7 The NPPF defines the Government's planning policy for England and sets out the framework within which local authorities should prepare their local and neighbourhood plans, reflecting the needs and priorities of their communities.

2.4.8 The main references to noise in the NPPF are found in paragraphs 174 and 185, where it states that:

" 174. Planning policies and decisions should contribute to and enhance the natural and local environment by: …

- *preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability;…*

"185. Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- *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"*

2.4.9 In the preparation of local plans, the NPPF specifies that local planning authorities should:

"set out criteria or requirements to ensure that permitted and proposed operations do not have unacceptable adverse impacts on the natural and historic environment or human health, taking into account the cumulative effects of multiple impacts from individual sites and/or a number of sites in a locality."

2.4.10 For proposed development near to an existing source(s) of noise, paragraphs 187 and 188 (reproduced below) in NPPF indicate that a developer should consider if there could be a significant adverse effect on future occupiers. Where a potential significant adverse effect is identified, developers may be required to factor into their planning application suitable mitigation measures to avoid any significant adverse impacts on health and the quality of life for future occupiers.

"187. Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

"188. The focus of planning policies and decisions should be on whether proposed development is an acceptable use of land, rather than the control of processes or emissions (where these are subject to separate pollution control regimes). Planning

decisions should assume that these regimes will operate effectively. Equally, where a planning decision has been made on a particular development, the planning issues should not be revisited through the permitting regimes operated by pollution control authorities."

Planning Practice Guidance - Noise

2.4.11 Planning Practice Guidance (PPG) on noise [9] was issued in March 2014 and was last updated in July 2019. This web-based guidance advises local planning authorities to take into account the acoustic environment, and in doing so consider the following:

- whether or not a significant adverse effect is occurring or likely to occur;
- whether or not an adverse effect is occurring or likely to occur; and
- whether or not a good standard of amenity can be achieved.

2.4.12 The PPG includes examples of how to recognise when noise could be a concern and provides example outcomes to which the Observed Effect Levels can apply. The PPG noise exposure hierarchy is presented in Table 2.22, based on the likely average response, along with example outcomes.

2.4.13 While it is acknowledged that planning and nuisance regimes are separate entities, the hierarchy table does provide useful information regarding how the concept of SOAELs and LOAELs, introduced through the NPSE, could be applied and does allow for subjective observations to be considered in the context of potential effect levels. The presence of an "Effect Level" does not infer whether a nuisance is or is not present.

Response	Examples of Outcomes	Increasing Effect Level	Action
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, 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 small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other psychological response, 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	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory	Unacceptable Adverse Effect	Prevent

TABLE 2.2: PLANNING PRACTICE GUIDANCE NOISE EXPOSURE HIERARCHY

2.4.14 The PPG guidance states that "*where external amenity spaces are an intrinsic part of the overall design, the acoustic environment of those spaces should be considered so that they can be enjoyed as intended*."

2.5 BS 8233:2014

2.5.1 Guidance in BS 8233:2014 on sound insulation and noise reduction for buildings gives recommendations for the control of noise in and around buildings. The Standard suggests appropriate criteria and limits for different situations to guide the design of new or refurbished buildings undergoing a change of use.

2.5.2 Desirable ambient internal noise level design ranges are specified in the Standard and are reproduced below in Table 2.3.

Activity	Room	Ambient Indoor Noise Level 07:00 to 23:00 hrs, dB $L_{Aeq,16\ hr}$	Ambient Indoor Noise Level 23:00 to 07:00 hrs, dB $L_{Aeq,8\ hr}$
Resting	Living Room	35	-
Dining	Dining room/ area	40	-
Sleeping (daytime resting)	Bedroom	35	30

TABLE 2.3: BS 8233 INDOOR AMBIENT NOISE LEVELS FOR DWELLINGS

Notes:

- Table provides recommended levels for overall noise in the design of a building. These are the sum total of structure-borne and airborne noise sources. Groundborne noise is assessed separately and is not included as part of these targets, as human response to groundborne noise varies with many factors such as level, character, timing, occupant expectation and sensitivity.
- The levels shown are based on the existing guidelines issued by the WHO and assume normal diurnal fluctuations in external noise. In cases where local conditions do not follow a typical diurnal pattern, for example on a road serving a port with high levels of traffic at certain times of the night, an appropriate alternative period, e.g. 1 hour, may be used, but the level should be selected to ensure consistency with the levels recommended.
- These levels are based on annual average data and do not have to be achieved in all circumstances. For example, it is normal to exclude occasional events, such as fireworks night or New Year's Eve.
- Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or $L_{Amax,F}$, depending on the character and number of events per night. Sporadic noise events could require separate values.
- If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the façade insulation or the resulting noise level.
  If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.
- Attention is drawn to the Building Regulations.
- Where development is considered necessary or desirable, despite external noise levels above WHO guidelines, the internal target levels may be relaxed by up to 5 dB and reasonable internal conditions still achieved.

2.5.3 Note 4 of the above table refers to regular individual noise events, such as aircraft, and indicates a guideline night-time level in terms of Sound Exposure (L_{AE}) or $L_{Amax,F}$ may be set depending on the character and number of noise events per night.

2.5.4 In external amenity spaces, such as private gardens and patios, BS 8233 indicates that it is desirable that the external noise level in these areas does not exceed 50 dB $L_{Aeq,T}$ with an upper guideline value of 55 dB $L_{Aeq,T}$ in noisier environments.

2.5.5 The Standard does recognise that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as in city centres or urban areas adjoining a strategic transport network a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces but should not be prohibited.

2.6 Professional Practice Guidance on Planning & Noise (ProPG)

2.6.1 ProPG is a guidance document prepared by the Association of Noise Consultants et al to complement Government planning and noise policy by advocating full consideration of the acoustic environment from the earliest possible stage of the development control process; encouraging the process of good acoustic design in and around new residential developments; outlining what should be taken into account in deciding planning applications for new noise-sensitive developments; improving the understanding of how to determine the extent of potential noise impact and effect; and, assisting with the delivery of sustainable development by promoting good health and wellbeing through the effective management of noise.

2.6.2 ProPG promotes a 2-stage approach to a noise assessment. Stage 1 involves an initial noise risk assessment of the proposed development site. Stage 2 includes a systematic consideration of the following elements: demonstrating a “Good Acoustic Design Process”; observing internal “Noise Level Guidelines”; undertaking an “External Amenity Area Noise Assessment”; and consideration of “Other Relevant Issues”.

2.6.3 This two-stage approach is underpinned by the preparation of an “Acoustic Design Statement” (ADS).

2.6.4 The general principles of ‘Good Acoustic Design’ referred to in ProPG are described as maximising the spatial separation of noise source(s) and receptor(s); investigating the necessity and feasibility of reducing existing noise levels and relocating existing noise sources; using existing topography and existing structures (that are likely to last the expected life of the noise-sensitive scheme) to screen the proposed development site from significant sources of noise; incorporating noise barriers as part of the scheme to screen the proposed development site from significant sources of noise; using the layout of the scheme to reduce noise propagation across the site; using the orientation of buildings to reduce the noise exposure of noise sensitive rooms; and using the building envelope to mitigate noise to acceptable levels.

2.6.5 ProPG includes two supplementary documents. Supplementary Document 1 provides an overview of key aspects of the Government’s current planning policy framework. Supplementary Document 2 contains guidance on good acoustic design, which includes reference to BS 8233:2014, BRE Report ‘Sound Control for Homes’ and the Building Regulations.

2.6.6 ProPG contains guidance on noise maxima in relation to sleep disturbance, stating that individual noise events should not normally exceed 45 dB $L_{Amax,F}$ in bedrooms more than 10 times per night.

2.7 World Health Organization Guidelines

2.7.1 Guideline values for community noise in specific environments are presented in the World Health Organization (WHO) document and are summarised in Table 2.4 below.

Specific Environment	Critical Health Effect(s)	dB $L_{Aeq,T}$	Time Base hours	dB $L_{Amax,F}$
Outdoor living area	Serious annoyance, daytime and evening	55	16	-
	Moderate annoyance, daytime and evening	50	16	-
Dwelling indoors	Speech intelligibility and moderate annoyance, daytime and evening	35	16	-
Inside bedrooms	Sleep disturbance, night-time	30	8	45

TABLE 2.4: WHO GUIDELINE NOISE VALUES

Night Noise Guidelines for Europe

2.7.2 The Night Noise Guideline (NNG) for Europe [10] is described as an extension of the WHO Guidelines for Community Noise publication. The threshold levels of noise exposure presented in the document are described as milestones in the process of evaluating the health consequences of environmental exposure. The health-based guideline values for the

assessment and control of night noise exposure were derived from a review of available scientific evidence on the health effects of night noise.

2.7.3 For the purposes of this assessment the criteria presented in Table 2.4 above will be adopted.

2.8 British Standard BS 4142:2014+A1:2019

2.8.1 Guidance on the rating and assessing of sound of an industrial and/or commercial nature is contained in British Standard BS 4142: 2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'

2.8.2 The standard states that:

"This standard is applicable to the determination of the following levels at outdoor locations:

a) rating levels for sources of sound of an industrial and/or commercial nature; and

b) ambient, background and residual sound levels

for the purposes of:

1) investigating complaints;

2) assessing sound from proposed, new, modified or additional source(s) of sound of an industrial nature and/or commercial nature; and

3) assessing sound at proposed new dwellings or premises used for residential purposes."

2.8.3 This standard, however, is not applicable to the passage of vehicles on public roads and railway systems.

2.8.4 The determination of noise amounting to a nuisance is beyond the scope of this British Standard.

2.8.5 The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs.

2.8.6 Typically, the greater the difference between rating level and background noise level, the greater the magnitude of the 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 context; and
- the lower the rating level is relative to the measured background sound level, the less likely it is that the specific source will have an adverse impact or a significant 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, depending on the context.

2.8.7 Certain acoustic features can increase the significance of the impact over that expected from a basic comparison between specific sound level and the background sound level. These features include tonality and impulsivity, as well as additional characteristics and intermittency of the sound.

2.8.8 Where appropriate, a rating penalty for sound based on a subjective assessment of its characteristics should be established. In other circumstances an objective appraisal of tonal and/or impulsive characteristics may be appropriate.

2.8.9 Although BS 4142:2014+A1:2019 was derived from previous editions of the standard, many aspects have been introduced, or developed, due to research undertaken since the previous edition. As such, differences may exist in the results obtained through the application of this standard compared to its predecessors. These differences may be attributable, in part, to changes in the assessment of acoustical features, differences in establishing representative background sound levels, and/or the application of context to the results.

2.9 Local Authority Noise Criteria

2.9.1 The site of the proposed residential development is located within the administrative area of Horsham District Council (HDC).

2.9.2 The 'Planning Noise Advice Document: Sussex' [5] is applicable for developers and their consultants when making a planning application and provides advice on noise assessments for developments within the district of HDC.

2.9.3 In relation to residential developments, the Planning Noise Advice Document: Sussex refers to the World Health Organization Guidelines for Community Noise (2009) (WHO), ProPG (2017) and British Standard 8233:2014 Guidance on Sound Insulation and Noise Reduction for Buildings to guide planning application assessments. Reference to the rating of commercial noise sources, in line with British Standard 4142:2014 Methods for Rating and Assessing Industrial and Commercial Sound is also provided.

2.9.4 According to the Planning Noise Advice Document for Sussex, the indoor ambient noise levels in Tables 4 and 6 of BS 8233 should be applied to residential development that requires planning permission.

2.9.5 The Planning Noise Advice Document for Sussex states that for noise generated by a site of an industrial or commercial nature then:

"1) The rating level of the plant should, where practicable, be no greater than the existing background levels, when measured in accordance with BS 4142.

2) Where background levels are very low, discussion should be had with the LPA on the objectives to be agreed.

3) Apply the indoor ambient noise levels in Tables 4 and 6 of BS 8233.

4) Apply the WHO 2009 Community Noise guidelines for outdoor amenity areas"

2.9.6 For new noise sensitive development near to existing industrial/commercial noise sources, the guidance document states that:

"6.6.1. Careful consideration will need to be given to proposals that are likely to site new noise sensitive developments near to existing industrial, commercial, entertainment premises, airfields air ports and sea ports.

6.6.2. The 'agent of change' principle, the principle by which a person or business introducing a new land use is responsible for managing the impact of that change, will apply. The National Planning Policy Framework 2019 Para 182 states: "Planning policies and decisions should ensure that new development can be integrated effectively with existing businesses and community facilities."

6.6.3. There is no protection offered in law to existing premises from nuisance complaints made by new residents. This may result in formal action being taken against these premises if a statutory nuisance is established or civil action at common law for nuisance.

6.6.4. Where it is apparent to the LPA that existing noise from an existing industrial, commercial, entertainment premises, places of worship, sports clubs, airfields, airports and sea ports is likely to cause unreasonable or adverse effects to new residents, the development is unlikely to be supported unless the applicant (or 'agent of change') provides clear evidence that adequate noise attenuation to the existing noise sources can and will be provided. The applicant (or 'agent of change') will be required to provide a detailed noise mitigation plan with their acoustic assessment.

6.6.5. In some circumstances, legal agreements can be entered into, whereby the developers provide the necessary measures to attenuate the existing noise through appropriate techniques including re-engineering the source to reduce emissions, adequate acoustic enclosure / sound proofing or re-locating the noise source."

2.9.7 Advise is also included in the Sussex guidance document that indicates a vibration survey should be carried out and that predicted Vibration Dose Values (VDV) should confirm the 'low probability of adverse comment' thresholds of BS 6472-1:2008 'Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting' [6].

3. SITE DESCRIPTION AND DEVELOPMENT PROPOSAL

3.1 Existing Site

3.1.1 An outline of the existing site is shown on Figure A1 of Appendix A.

3.1.2 The area to be developed is currently open fields and wooded areas.

3.1.3 To the south of the site is the A264, which runs in an east to west direction.

3.1.4 Langhurst Wood Road bounds the site directly to the east.

3.1.5 The Sutton & Mole Valley railway line lies to the west of the site, with Warnham Station located near to the northwest corner of the proposed development site.

3.1.6 Next to the railway station are various commercial premises which include: Greens of Horsham a car repair/MOT test centre; Ryan James Benson Commercials Ltd (RJB): a car and commercial vehicle repairs operation; and, Panel 2 Paint: a car body paint specialist.

3.1.7 An industrial estate is situated to the north of the site, which includes Wienerberger a building materials supplier and Britaniacrest Recycling.

3.1.8 Both Wienerberger and RJB have operations that take place during evening and night-time periods.

3.1.9 Mercer Road divides the development site into northern and southern parcels of land.

3.2 Proposed Development

3.2.1 The proposed site layout is presented in Figure A2 of Appendix A.

3.2.2 The development comprises 300 residential dwellings and 50 public car parking spaces.

3.2.3 The residential dwellings are a mix of semi-detached, small terraced and detached dwellings with 2 to 5 bedrooms and front and rear gardens.

3.2.4 There are various grass covered outdoor amenity spaces located within the development site.

3.3 Subjective Observations

3.3.1 The main source of noise across site was reasonably steady and continuous road traffic on the A264.

3.3.2 Intermittent noise from trains passing on the Sutton & Mole valley railway line was also present.

3.3.3 Secondary sources of noise included local traffic movements on Langhurst Road and Mercer Road.

4. NOISE AND VIBRATION SURVEY

4.1 Noise and Vibration Monitoring

4.1.1 Unattended noise and vibration monitoring was undertaken at the locations displayed on Figure A3 of Appendix A.

4.1.2 Continuous unattended noise monitoring was undertaken at three locations (LT1, LT2 and LT3), over 14 days to measure the diurnal variation in noise levels over weekday and weekend periods.

4.1.3 LT1 was located in the south-east area of the site near to the A264.

4.1.4 LT2 was located near to the western site boundary to monitor noise levels generated by the rail traffic.

4.1.5 LT3 was located in the northern parcel of land in the vicinity of the commercial premises and industrial estate located to the north-west and north of the development site.

4.1.6 Continuous unattended vibration monitoring was undertaken at the location labelled as VB1 on Figure A3 over a period of 7 days to measure vibration magnitudes during day and night time periods near to the railway line.

4.2 Unattended Noise Monitoring

4.2.1 Unattended noise measurements were obtained at LT1 between 17:45 hrs on Wednesday 29th July and 21:00 hrs on Tuesday 4th August 2020.

4.2.2 LT1 was located within the site boundary of the proposed development, approximately 40m north of the A264. The microphone was positioned in free-field conditions 1.5m above local ground.

4.2.3 Unattended noise measurements were obtained at LT2 between 19:15 hrs on Wednesday 29th July and 09:15 hrs on Tuesday 11th August 2020.

4.2.4 LT2 was located near to the site's western boundary approximately 25m to the east of the Sutton and Mole Valley railway. The microphone was positioned in free-field conditions 1.5 m above local ground.

4.2.5 Unattended noise measurements were obtained at LT3 between 17:45 hrs on Wednesday 29th July and 21:00 hrs on Tuesday 4th August 2020.

4.2.6 LT3 was located along the northern boundary within the site boundary of the proposed development, approximately 70m south of Weinberger material suppliers and 75m east of Panel 2 Paint car body shop. The microphone was positioned in free-field conditions 1.5 m above local ground.

4.2.7 The noise measurements at LT1, LT2 and LT3 were made using Class 1 precision integrating sound level meters. The microphones were fitted with weatherproof windshields. The sound level meters were powered by gel cell batteries and stored inside weatherproof security boxes. Field calibration checks were performed before and after the survey using a Rion NC-74 Class 1 Acoustic Calibration to generate a level of 94.0 dB at 1 kHz.

4.2.8 Consecutive 15-minute measurements of noise indices which included $L_{Amax,F}$, $L_{Aeq,15min}$, $L_{A10,15min}$ and $L_{A90,15min}$ noise levels were measured over the unattended monitoring period.

4.3 Attended Noise Monitoring

Daytime Attended Noise Monitoring

4.3.1 Sample attended noise measurements were obtained on Wednesday 29th July 2020 between 13:50 hrs and 17:15 hrs at 3 no. monitoring locations labelled as ST1 to ST3 on Figure A3 of Appendix A.

4.3.2 The attended noise measurements were obtained using a Rion NA-28 sound level meter fitted with a windshield. The microphone was positioned approximately 1.5m above ground level.

4.3.3 The NA-28 sound level meter was configured to measure broadband A-weighted levels which included $L_{Amax,F}$, $L_{Aeq,5min}$, $L_{A10,5min}$ and $L_{A90,5min}$ levels over consecutive 5-minute intervals.

4.3.4 The clock on the attended sound level meter was synchronised with the clocks of the unattended sound level meters.

4.3.5 The sound level meter was calibrated before and after the survey using a Rion NC-74 Class 1 Acoustic Calibrator to generate a calibration level of 94.0 dB at 1 kHz.

Source-Term Noise Measurements

4.3.6 Attended noise measurements of industrial and commercial noise sources surrounding the proposed development were obtained between 08:20 and 15:40 on Tuesday 11th August 2020.

4.3.7 Onsite measurements were taken with the permission of the business owners. Where permission was not available, measurements were taken at off-site locations near the noise sources.

4.3.8 Measurements of $L_{Amax,F}$, $L_{Aeq,5s}$ were obtained in 5s intervals using a Rion NL-28 sound level meter.

4.3.9 Details of the monitoring equipment used for both unattended and attended surveys including equipment serial numbers and laboratory calibration certificates are provided in Appendix C.

4.4 Weather Conditions

4.4.1 The weather during the daytime attended monitoring on Wednesday 29th July 2020 was dry and sunny with scattered clouds. Average wind speeds remained below 3 ms^{-1}. The air temperature was around 21^{O}C, with approximately 49 % relative humidity.

4.4.2 The weather during the daytime time attended monitoring on Tuesday 11th August 2020 was dry and with patch cloud. Average wind speeds remained below 1.0 ms^{-1}. The air temperature was around 27 ^{O}C, with approximately 51 % relative humidity.

4.4.3 A log of the weather during the unattended monitoring period has been obtained from the Wunderground website (https://www.wunderground.com/) and is summarised in Table B1 of Appendix B.

4.4.4 The weather log indicates that the weather during the unattended monitoring period was dry, with daily average wind speeds less than 3 ms^{-1}.

4.5 Continuous Unattended Vibration Monitoring

4.5.1 Unattended measurements of Vibration Dose Values (VDV) were obtained on the Pondtail development site between 19:35 hrs on Wednesday 29th July 2020 and 20:45 hrs on Wednesday 5th August 2020.

4.5.2 VB1 was located on the development site approximately 25 m to the east of the Sutton & Mole Valley Railway.

4.5.3 The vibration measurements were obtained using a Rion PV-83 CW triaxial accelerometer connected to a Rion VM-54 Vibration Meter. The vibration transducer was mounted to a metal baseplate fitted with a ground spike.

4.5.4 Measurements of VDV were logged in 5-minute intervals. The W_d weighting was applied to measurements obtained in the horizontal axes, X and Y, whilst the W_b weighting was applied to the vertical axis.

4.5.5 The vibration monitoring location is labelled as VB1 on Figure A3 in Appendix A.

5. NOISE AND VIBRATION SURVEY RESULTS

5.1 Continuous Noise Survey Results

5.1.1 The results of the unattended noise monitoring are presented graphically on Figure A4 to A6 in Appendix A and tabulated in Tables B2 to B4 in Appendix B.

5.1.2 The unattended noise monitoring results at LT1 are summarised below in Table 5.1. Daytime $L_{Aeq,16hr}$ and night-time $L_{Aeq,8hr}$ ambient noise levels presented in the table have been calculated using logarithmic averaging, whilst mean $L_{Amax,F}$ and $L_{A90,T}$ noise levels have been calculated using arithmetic averaging.

Day of Meas.	Date	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.					
		Daytime (07:00 - 23:00 hrs)			Night-Time (23:00 - 07:00 hrs)		
		$L_{Amax,F}$	$L_{Aeq,16hrs}$	$L_{A90,16hrs}$	$L_{Amax,F}$	$L_{Aeq,8hrs}$	$L_{A90,8hrs}$
Wednesday[1]	29-Jul-20	67 (63-88)	59 (53-63)	52 (43-59)	64 (59-71)	54 (45-61)	39 (30-57)
Thursday	30-Jul-20	68 (64-76)	60 (55-62)	55 (45-59)	64 (60-72)	54 (47-61)	38 (28-57)
Friday	31-Jul-20	68 (64-76)	60 (55-62)	56 (45-59)	63 (58-72)	52 (45-56)	37 (29-49)
Saturday	01-Aug-20	67 (63-76)	60 (54-62)	55 (46-59)	64 (59-76)	51 (46-56)	36 (31-46)
Sunday	02-Aug-20	69 (63-83)	59 (51-62)	53 (34-59)	62 (60-66)	53 (44-60)	38 (29-56)
Monday	03-Aug-20	67 (62-79)	59 (53-62)	54 (39-58)	64 (59-80)	54 (45-61)	40 (30-57)
Tuesday[2]	04-Aug-20	68 (65-76)	61 (56-63)	57 (49-60)	-	-	-
Mean Values		68 (67-69)	60 (59-61)	55 (52-57)	64 (62-64)	53 (51-54)	38 (36-40)

TABLE 5.1: SUMMARY OF UNATTENDED CONTINUOUS NOISE MONITORING RESULTS AT LT1

Notes:
[1] incomplete daytime period due to equipment set-up / retrieval; and
[2] incomplete daytime period due full memory on monitor

5.1.3 The results of the LT1 unattended noise monitoring show that during the daytime periods ambient noise levels ranged between 59 and 61 dB $L_{Aeq,16hr}$, with a mean level of 60 dB $L_{Aeq,16hr}$.

5.1.4 During the night-time periods ambient noise levels ranged between 51 and 54 dB $L_{Aeq,8hr}$ with an overall mean value of 53 dB $L_{Aeq,8hr}$.

5.1.5 The unattended noise monitoring results at LT2 are summarised below in Table 5.2.

Day of Meas.	Date	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.					
		Daytime (07:00 - 23:00 hrs)			Night-Time (23:00 - 07:00 hrs)		
		$L_{Amax,F}$	$L_{Aeq,16hrs}$	$L_{A90,16hrs}$	$L_{Amax,F}$	$L_{Aeq,8hrs}$	$L_{A90,8hrs}$
Wednesday[1]	29-Jul-20	69 (54-82)	53 (47-57)	45 (41-48)	60 (49-80)	50 (41-58)	41 (35-52)
Thursday	30-Jul-20	68 (56-77)	54 (48-58)	48 (42-52)	62 (49-82)	51 (41-60)	40 (34-54)
Friday	31-Jul-20	68 (54-76)	56 (46-59)	50 (40-54)	57 (46-80)	47 (36-58)	35 (31-43)
Saturday	01-Aug-20	65 (50-77)	51 (42-56)	45 (39-50)	58 (47-88)	47 (37-57)	36 (33-44)
Sunday	02-Aug-20	59 (49-70)	48 (41-52)	43 (35-48)	54 (45-73)	43 (36-52)	37 (32-45)
Monday	03-Aug-20	65 (48-80)	52 (41-58)	42 (38-46)	58 (50-80)	51 (41-58)	41 (36-53)
Tuesday	04-Aug-20	67 (55-79)	54 (48-58)	48 (40-53)	60 (52-81)	49 (39-59)	37 (30-51)
Wednesday	05-Aug-20	68 (57-79)	55 (45-59)	50 (39-54)	57 (47-82)	49 (37-60)	36 (30-51)
Thursday	06-Aug-20	68 (53-92)	54 (45-60)	48 (41-52)	60 (53-80)	51 (42-58)	42 (36-54)
Friday	07-Aug-20	68 (53-78)	54 (47-58)	49 (43-54)	59 (49-82)	49 (41-60)	40 (34-47)
Saturday	08-Aug-20	67 (50-82)	52 (44-57)	45 (42-51)	54 (44-82)	46 (38-57)	38 (35-42)
Sunday	09-Aug-20	58 (53-70)	49 (45-52)	45 (41-49)	55 (49-73)	45 (38-54)	37 (30-49)
Monday	10-Aug-20	66 (51-78)	53 (45-58)	47 (42-52)	58 (49-79)	50 (40-58)	40 (34-53)
Tuesday[1]	11-Aug-20	69 (59-76)	55 (47-59)	48 (44-55)	-	-	-
Mean Values		66 (58-69)	53 (48-56)	47 (42-50)	58 (54-62)	48 (43-51)	38 (35-42)

TABLE 5.2: SUMMARY OF UNATTENDED CONTINUOUS NOISE MONITORING RESULTS AT LT2

Notes:
[1] incomplete daytime period due to equipment set-up / retrieval; and

5.1.6 The results of the unattended noise monitoring at LT2 show that during the daytime periods ambient noise levels ranged between 48 and 56 dB $L_{Aeq,16hrs}$, with a mean level of 53 dB $L_{Aeq,16hr}$.

5.1.7 During the night-time periods ambient noise levels ranged between 43 and 51 dB $L_{Aeq,8hrs}$ with an overall mean value of 48 dB $L_{Aeq,8hrs}$.

5.1.8 The unattended noise monitoring results obtained at LT3 are summarised below in Table 5.3.

Day of Meas.	Date	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.					
		Daytime (07:00 - 23:00 hrs)			Night-Time (23:00 - 07:00 hrs)		
		$L_{Amax,F}$	$L_{Aeq,16hrs}$	$L_{A90,16hrs}$	$L_{Amax,F}$	$L_{Aeq,8hrs}$	$L_{A90,8hrs}$
Wednesday[1]	29-Jul-20	64 (56-78)	51 (49-53)	48 (46-51)	57 (51-69)	50 (45-55)	46 (44-54)
Thursday	30-Jul-20	61 (54-79)	52 (47-55)	50 (45-53)	55 (50-65)	48 (44-55)	45 (43-54)
Friday	31-Jul-20	62 (53-74)	53 (47-56)	51 (45-54)	55 (48-68)	46 (44-49)	44 (43-46)
Saturday	01-Aug-20	62 (51-73)	51 (46-53)	48 (45-51)	54 (47-67)	46 (44-49)	44 (43-46)
Sunday	02-Aug-20	60 (52-71)	50 (46-53)	47 (44-50)	53 (46-68)	45 (44-48)	44 (43-46)
Monday	03-Aug-20	59 (46-79)	47 (44-57)	45 (43-47)	56 (49-69)	49 (44-55)	46 (43-53)
Tuesday	04-Aug-20	63 (57-101)	54 (49-66)	51 (46-53)	59 (53-70)	49 (45-55)	46 (43-52)
Wednesday	05-Aug-20	63 (55-71)	54 (47-57)	51 (45-54)	56 (52-69)	48 (45-54)	45 (43-52)
Thursday	06-Aug-20	64 (52-84)	53 (48-56)	51 (45-53)	57 (50-68)	49 (45-54)	46 (44-53)
Friday	07-Aug-20	61 (54-76)	52 (48-61)	49 (46-53)	55 (48-67)	47 (44-52)	45 (43-47)
Saturday	08-Aug-20	60 (50-76)	49 (45-55)	45 (43-50)	52 (46-65)	44 (43-48)	43 (42-44)
Sunday	09-Aug-20	59 (48-79)	47 (44-55)	45 (43-47)	53 (46-66)	45 (43-50)	43 (42-48)
Monday	10-Aug-20	61 (52-76)	51 (47-56)	48 (45-52)	56 (51-65)	48 (44-54)	45 (42-52)
Tuesday[1]	11-Aug-20	63 (57-72)	52 (47-54)	49 (45-52)	-	-	-
Mean Values		62 (59-64)	51 (47-54)	48 (45-51)	55 (52-59)	47 (44-50)	45 (43-46)

TABLE 5.3: SUMMARY OF UNATTENDED CONTINUOUS NOISE MONITORING RESULTS AT LT3 (FREE-FIELD)

Notes:
[1] incomplete daytime period due to equipment set-up / retrieval; and

5.1.9 The results of the LT3 unattended noise monitoring show that during the daytime periods ambient noise levels ranged between 47 and 54 dB $L_{Aeq,16hr}$, with a mean level of 51 dB $L_{Aeq,16hr}$.

5.1.10 During the night-time periods ambient noise levels ranged between 44 and 50 dB $L_{Aeq,8hr}$ with an overall mean value of 47 dB $L_{Aeq,8hr}$.

5.2 Attended Noise Survey Results

5.2.1 The results of the attended noise monitoring undertaken during the daytime on 29th July 2020 are presented in Table B5 of Appendix B and summarised below in Table 5.2.

Monitoring Location	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,T}$	$L_{Aeq,T}$	$L_{A90,T}$
ST1	13:50	15	61.0	54.1	52.7	49.9
ST2	14:10	15	62.5	53.9	52.2	49.2
ST3	14:45	15	66.5	54.8	52.7	49.7
ST1	15:10	15	73.8	58.5	57.5	53.9
ST2	15:30	15	64.6	56.1	54.4	51.3
ST3	15:50	15	62.7	55.9	54.0	51.4
ST1	16:15	15	67.1	58.8	56.9	54.2
ST2	16:35	15	73.2	56.8	55.5	52.3
ST3	17:00	15	59.5	55.6	53.7	51.2

TABLE 5.4: ATTENDED DAYTIME NOISE SURVEY RESULTS, WEDNESDAY 29TH JULY 2020

5.2.2 Observations made during the attended survey indicate that the ambient $L_{Aeq,T}$ noise levels at ST1, ST2 and ST3 were affected by road traffic on the A264, rail traffic passing on the adjacent railway line and local vehicle movements on Mercer Road.

5.2.3 Trains on the railway line were more prominent at ST2.

5.3 Source Term Survey Results

5.3.1 The results of source-term attended noise measurements of the commercial and industrial activity located to the north of the development site are presented in Table B6 of Appendix B and summarised below in Table 5.5.

Company	Source	Distance (m)	Duration (mm:ss)	$L_{Aeq,T}$[1]
Britaniacrest Recycling	Breakout from industrial building	10	02:15	63.2
	HGV on weighbridge	15	02:00	65.1
	Truck Pass-by	20	00:25	67.7
	Dumper truck	25	01:30	61.0
	Luton Van	25	00:25	61.8
	JCB Grabber	25	02:50	65.5
Wienerberger	Breakout from building (north)	20	01:05	64.8
	Forklift trucks (north Yard)	20	01:00	68.1
	Dumper Truck	20	04:00	62.2
	Exhaust/Extract Flue	30	13:20	54.5
	Condenser Unit	5	02:05	55.1
	Breakout from building South #1	8	07:05	50.3
	Breakout from building South #2	5	05:00	56.2
	Breakout from building South #3	5	05:05	52.1
Panel 2 Paint	Breakout from East façade during angle grinding	2.5	02:00	54.5
RJB Commercials	Large Van	5	01:50	59.7
	Wheel Gun	3	01:40	86.9
	Van	5	01:25	62.5
	Breakout from workshop	10	02:15	62.1
	Truck	10	03:35	64.4
Greens of Horsham	Breakout at east façade	10	15:25	48.3

TABLE 5.5: SOURCE-TERM NOISE SURVEY RESULTS, TUESDAY 11TH AUGUST 2020

Note: [1] $L_{Aeq,T}$ noise levels corrected for the influence of underlying residual ambient sound environment

5.4 Vibration Survey Results

5.4.1 The results of the unattended vibration measurements at VB1 are presented graphically in Figure A7 in Appendix A and summarised below in Table 5.6.

Day of Meas.	Date	Daytime (07:00 - 23:00) Vibration Dose Value, $ms^{-1.75}$			Night-time (23:00 - 07:00) Vibration Dose Value, $ms^{-1.75}$		
		X-Axis	Y-Axis	Z-Axis	X-Axis	Y-Axis	Z-Axis
Weds	29-Jul-20	0.01[1]	0.01[1]	0.02[1]	0.01	0.01	0.01
Thurs	30-Jul-20	0.02	0.01	0.02	0.01	0.01	0.02
Fri	31-Jul-20	0.02	0.02	0.03	0.01	0.01	0.01
Sat	01-Aug-20	0.02	0.01	0.02	0.01	0.01	0.01
Sun	02- Aug -20	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Mon	03- Aug -20	0.02	0.02	0.03	0.01	0.01	0.01
Tues	04- Aug -20	0.02	0.02	0.03	0.01	0.01	0.01
Weds	05- Aug -20	0.02[1]	0.02[1]	0.02[1]	-	-	-

TABLE 5.6: SUMMARY OF VIBRATION DOSE VALUES MEASURED AT VB1, 29TH JULY – 5TH AUGUST 2020

Notes:
[1] Incomplete daytime period due to set up and retrieval of equipment.

5.4.3 The VDV results of the unattended vibration monitoring undertaken are presented graphically on Figure A7 of Appendix A.

6. NOISE MODELLING

6.1 Sound Model Calculations

6.1.1 A sound model has been developed and calibrated using the measured noise data to calculate sound levels at a sample of façade positions located across the proposed development.

6.1.2 The sound modelling has been undertaken using CadnaA a commercially available software package designed to predict environmental noise levels.

6.2 Model Assumptions

6.2.1 Principal features of the area surrounding the proposed development such as existing buildings and other intervening structures have been based on Ordnance Survey mapping, site plans and supplemented with on-site observations.

6.2.2 Ground contours have been based on Lidar survey results supplied by Defra (Department for Environmental, Food & Rural Affairs) which an accuracy of 2m.

6.2.3 The dimensions of the proposed residential building have been based on the proposed plans. Proposed dwellings have been modelled at a height of 7.5 m with two floors and a gable roof. Where identified on proposed plans, garages and other outbuildings have been modelled at a height of 5m to assume with a single floor and a gable roof.

6.2.4 An existing noise barrier runs along part of the A264 at the south of the proposed development. This has been modelled at a height of 1.8m on the northern boundary of the road.

6.2.5 No extra fencing or other noise protection has been modelled as part of the proposed plans.

6.2.6 Properties have been allocated ID numbers. These are presented in Figures A8 to A10 of Appendix A.

6.3 Calculated Source Noise Levels

6.3.1 The daytime and night-time noise levels ($L_{Aeq,T}$) of vehicle traffic on the A264 were determined by analysis of the unattended noise data at LT1. Levels were obtained by logarithmic averaging of the measured daytime $L_{Aeq,16hr}$ and night-time $L_{Aeq,8hr}$ levels across the noise survey at the LT1 monitoring position. The sound levels are summarised in Table 6.1.

Primary Source	Calibration Receiver Location	Daytime Noise Level (dB $L_{Aeq,16hr}$)	Night-time Noise Level (dB $L_{Aeq,8hr}$)
A264	LT1	60	53

TABLE 6.1 DAYTIME AND NIGHT-TIME NOISE LEVELS OF A264

6.3.2 The typical daytime and night-time noise levels of trains on the Sutton & Mole Valley line were determined using attended noise data obtained at LT2 alongside train timetables. Sound measurements ($L_{Aeq,5min}$) obtained during the daytime attended survey that contained a train pass from which a typical Single Event Level (SEL) was derived. Train timetables were used to determine the approximate number of trains during the daytime and night-time periods in either direction and the following formula was applied to determine the overall daytime $L_{Aeq,16hr}$ and night-time L_{Aeq8hr} levels:

$$L_{Aeq,T} = SEL + 10Log\left(\frac{N}{T}\right)$$

where:

$L_{Aeq,T}$ = The equivalent-continuous sound pressure level (dB) over the period of interest (T);
SEL = The Single Event Level of the noise event;
N = The number of noise events over the time period of interest (T); and
T = Time in seconds.

6.3.3 The calculated daytime and night-time noise levels of Sutton & Mole Valley trains at LT2 are shown in Table 6.2 below.

Location	Average Single Event Level of Train (dB L_{AE})	Daytime (07:00 – 23:00)		Night-time (23:00 – 07:00)	
		No. Trains	Noise Level (dB $L_{Aeq,16hr}$)	No. Trains	Noise Level (dB $L_{Aeq,8hr}$)
LT2	82.6	35	51.4	5	46.0

TABLE 6.2 CALCULATED NOISE LEVELS OF SUTTON & MOLE VALLEY RAILWAY

6.3.4 Point sources have been placed into the model to represent items of plant from surrounding industrial and commercial premises. A vertical area source has been placed into the model for noise breaking out from facades of buildings.

6.3.5 No on-time correction has been created for a worse-case assessment.

6.3.6 During daytime periods, all plant items have been modelled as operational.

6.3.7 During night-time periods, the Weinberger extract flue has been modelled as operational as it is understood that this plant operates 24/7. A van associated with RJB commercials has also been modelled during the night-time assessment period.

6.3.8 The % on-time corrections for each noise source is present in Table B8 of Appendix B.

6.4 Model Calibration

6.4.1 Receiver positions corresponding to the long-term measurement positions at LT1, LT2 and LT3 were input into the acoustic model and used for calibrating the noise model.

6.4.2 The A264 was modelled and configured using the parameters of the CRTN calculation method with the geometry of the road and side barriers determined using on-site observations and aerial photo imagery. The noise emission of the road was input manually and calibrated to return the noise levels shown in Table 6.1 at the receiver position LT1.

6.4.3 The Sutton & Mole Valley railway was acoustically modelled and calibrated to return the calculated noise levels shown in Table 6.2.

6.4.4 Noise levels at LT3 were affected by several sources including the A264 and the Sutton & Mole valley railway line. Following calibration of the road and rail traffic noise sources using the noise data at LT1, LT2 and ST3, sound levels were calculated at the LT3 calibration receiver and compared against the measured levels at this position.

6.4.5 Each commercial and industrial noise source has been calibrated to levels presented in Table 5.5 at receiver locations presented in Figure A11 of Appendix A.

7. NOISE ASSESSMENT

7.1 BS 8233 Assessment

External Noise Levels

7.1.1 BS 8233 guidance on suitable outdoor noise levels states that a desirable level for steady continuous noise should not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ in noisier environments. Similar outdoor guideline levels are also presented in WHO noise guidelines for the identification of 'moderate' and 'serious' annoyance critical health effects.

7.1.2 It is recognised in BS 8233 that these guideline values are not achievable in all circumstances where development might be desirable for other reasons than noise. In higher noise areas, such as city centres or urban areas adjoining the strategic network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations, or making efficient use of land resources to ensure development needs can be met, might be warranted.

7.1.3 Noise contour plots has been calculated from the CadnaA noise propagation model of the proposed site in order to provide an indication of the spatial variation in road and rail noise levels in external areas across the development site. A noise contour plot of predicted daytime levels at a relative ground height of 1.5 m is presented in Figure A15 of Appendix A. A noise contour plot of predicted night-time levels at a relative ground height of 4.0 m is presented in Figure A16 of Appendix A.

7.1.4 Analysis of the daytime noise contour plot shows that the predicted noise levels in most rear garden spaces, are below 55 dB $L_{Aeq,16hr}$.

7.1.5 The rear gardens of dwellings within the areas of G and H, external amenity noise levels are calculated to fall below 50 dB $L_{Aeq,16hr}$ and therefore achieve the desirable guideline value.

7.1.6 The rear gardens of dwellings within the areas of D, E, and F, external amenity noise levels are calculated to exceed 50 dB $L_{Aeq,16hr}$ but fall below 55 dB $L_{Aeq,16hr}$ and therefore achieve the upper guideline value.

7.1.7 The rear gardens of dwellings within the areas of A and B are predicted to exceed 55 dB $L_{Aeq,16hr}$. There are also areas within each of these gardens where noise levels are expected to be below this value.

7.1.8 Whilst the predicted levels for these dwellings are above the upper 55 dB $L_{Aeq,T}$ guideline level recommended in BS 8233:2014, the standard does acknowledge that the proposed limits are guidelines only and are not practical to achieve in all circumstances:

"However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted."

7.1.9 The development is situated in an area with easy access to National Rail services to and from London via the South London line. The A264 is a major artery road linking A23 and A24, both of which have direct access to London with the M25 and the wider strategic motorway network. The elevated noise levels in the external amenity areas, which are attributable primarily to the

major transport sources, could therefore be offset by the benefits that these transportation links provide.

7.1.10 The analysis of each dwelling facade is presented in Figure A17 of Appendix A.

7.1.11 It should be noted that barriers such as garden fences have not been modelled.

Internal Noise Levels

7.1.12 BS 8233:2014 recommends desirable daytime guideline levels of 40 dB $L_{Aeq,16hr}$ in dining areas, 35 dB $L_{aeq,16hr}$ for resting inside bedrooms and living rooms, and 30 dB $L_{Aeq,8hr}$ for sleeping inside bedrooms at night.

7.1.13 Annex G of BS 8233 indicates that a typical road traffic noise reduction for a dwelling with insulating (6-12-6) glass unit windows set in a brick/block wall is 33 dB(A). For a façade with a partially open window, BS 8233 indicates that the sound façade reduction is approximately 15 dB(A).

7.1.14 Using these indicated façade reductions, internal noise levels have been estimated at locations across the development site and are summarised with the worst affected receptors in each area in Table 7.1. The full list of receptors is presented in Table B7 of Appendix B.

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
A01	GND	57	42	<25	50	35	<25
A01	1st	59	44	26	52	37	<25
B02	GND	59	44	26	53	38	<25
B02	1st	61	46	28	54	39	<25
C01	GND	56	41	<25	49	34	<25
C01	1st	57	42	<25	50	35	<25
D01	GND	54	39	<25	47	32	<25
D01	1st	54	39	<25	47	32	<25
E01	GND	53	38	<25	46	31	<25
E01	1st	54	39	<25	47	32	<25
F01	GND	55	40	<25	49	34	<25
F01	1st	55	40	<25	49	34	<25
G01	GND	49	34	<25	42	27	<25
G01	1st	52	37	<25	45	30	<25
H01	GND	50	35	<25	43	28	<25
H01	1st	52	37	<25	45	30	<25

TABLE 7.1: SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

7.1.15 Based on the assumed typical façade reductions, the simple calculations indicate that internal noise levels at the façade areas, all properties of the proposed development are calculated to meet the BS 8233 desirable daytime criteria of 35 dB $L_{Aeq,16hour}$, for living rooms and bedrooms, 40 dB $L_{Aeq,16hour}$, for dining areas and the night-time criterion level of 30 dB $L_{Aeq,8hour}$ for bedrooms with closed insulating windows, assuming a typical façade sound reduction of 33 dB R_w.

7.1.16 With windows partially open, assuming a typical façade reduction of 15 dB R_w, all properties are predicted to exceed the BS 8233 desirable daytime criteria of 35 dB $L_{Aeq,16hour}$, for living rooms and bedrooms, 40 dB $L_{Aeq,16hour}$, for dining areas on ground and first floors with the exception of properties D03, D16-D17, D19-D20, D22-27, D31, E06-E11, E18-E20,E22,F09, F11-F18, G05-F07, G09, G12, G22-G25, H05-H08, H10 and H12

7.1.17 With windows partially open, assuming a typical façade reduction of 15 dB R_w, all properties are predicted to meet the BS 8233 desirable daytime criteria of night-time criterion level of 30 dB $L_{Aeq,8hr}$ for bedrooms on ground and first floors with the exception of properties in areas A, B except for B17 and properties C01-C07, C10-C14, C18-C20, D01-D02, D05-D09, D34, E01-E05, E12-E16, F01-F03, F06-F07 and F10.

7.1.18 BS 8233 indicates that the single value R_w values adopted for the estimation of internal noise levels suffice for initial calculations. However, this method can underestimate internal noise levels by up to 5 dB. As the calculated noise levels are within 5 dB of the target noise levels, a further detailed study is recommended at the detailed design stage of the project. Such a study should incorporate a frequency-dependent calculation of the internal noise levels and

demonstrate that the proposed façade elements are adequate in controlling noise to within the target criteria.

7.1.19 The analysis of predicted internal noise levels with windows partially open at each façade for daytime and night-time periods at ground floor height is presented in A18 and A19 of Appendix A, respectively.

7.1.20 The analysis of predicted internal noise levels with windows partially open at each façade for daytime and night-time periods at 1st floor height is presented in A20 and A21 of Appendix A, respectively.

7.2 Maximum ($L_{Amax,F}$) Noise Levels

7.2.1 ProPG defines a night-time maximum internal noise level of 45 dB $L_{Amax,F}$. In order to avoid sleep disturbance, the guidance suggests that design measures are put in place to ensure "*…individual noise events do not normally exceed 45 dB $L_{Amax,F}$ more than 10 times a night.*"

7.2.2 Table 7.2 shows the maximum free-field night-time levels across the unattended survey and the number of exceedances of the 45 dB $L_{Amax,F}$ of internal noise levels assuming a minimum sound reduction of 33 dB R_w at locations LT1, LT2 and LT3.

Date	Monitoring Location					
	LT1		LT2		LT3	
	Measured Maximum $L_{Amax,F}$	Calculated # of Exceedances of 45 dB $L_{Amax,F}$[1]	Measured Maximum $L_{Amax,F}$	Calculated # of Exceedances of 45 dB $L_{Amax,F}$[1]	Measured Maximum $L_{Amax,F}$	Calculated # of Exceedances of 45 dB $L_{Amax,F}$[1]
29/07/2020	71	0	80	2	69	0
30/07/2020	72	0	82	2	65	0
31/07/2020	72	0	80	1	68	0
01/08/2020	76	0	88	2	67	0
02/08/2020	66	0	73	0	68	0
03/08/2020	80	1	80	1	69	0
04/08/2020	-	-	81	1	70	0
05/08/2020	-	-	82	1	69	0
06/08/2020	-	-	80	1	68	0
07/08/2020	-	-	82	1	67	0
08/08/2020	-	-	82	1	65	0
09/08/2020	-	-	73	0	66	0
10/08/2020	-	-	79	1	65	0

TABLE 7.2: SUMMARY OF MAXIMUM NOISE LEVELS AND EXCEEDANCES OF INTERNAL CRITERIA

Notes: [1] Internal noise levels, assuming a minimum sound reduction of 33 dB Rw.

7.2.3 Table 7.2 shows that with a minimum sound reduction of 33 dB *Rw*, windows closed, the ProPG criteria of no more than 10 exceedances of 45 dB $L_{Amax,F}$ will be achieved for dwellings surrounding positions LT1, LT2 and LT3.

7.2.4 LT1, LT2 and LT3 are closer to noise sources than any of the proposed dwellings so it is assumed that $L_{Amax,F}$ noise levels at dwellings are likely to be marginally lower than measured at these positions.

7.3 BS 4142

7.3.1 Following the principles of BS 4142, the method for predicting the significance of sound of an industrial and/or commercial nature is based on a comparison of the rating level, defined as the specific sound level plus any adjustment for the characteristic features of the sound such as tonality/intermittency, with the background sound level, $L_{A90,T}$.

Background Sound Level ($L_{A90,T}$)

7.3.2 The $L_{A90,T}$ background sound level is the sound level exceeded for 90 % of the time in the absence of any sound from the specific source of interest. Consideration of statistical analysis of background sound levels and the attended measurements indicates that the measurements obtained at LT1, LT2, LT3, ST1, ST2 and ST3 are representative of the background sound environment at receptors close to each of these measurement positions.

7.3.3 A statistical analysis of the 15-min $L_{A90,T}$ background sound levels measured at LT1, LT2 and LT3 are presented in Figure A12, Figure A13 and Figure A14 of Appendix A, respectively.

7.3.4 This analysis indicates that the most commonly occurring daytime background noise levels at these monitoring locations are 49 dB, 46 dB and 49 $L_{A90,1hr}$ respectively.

7.3.5 The most commonly occurring night-time background noise levels measured at LT1 to LT3 are 32 dB, 37 dB and 43 $L_{A90,15min}$ respectively.

7.3.6 The background $L_{A90,15min}$ sound levels measured at LT3 during the night-time periods did not drop below 42 to 43 dB(A). It is understood that there is an extract fan that emits sound continuously during night-time periods when extracting pollutants from a kiln that fires bricks in Wienerberger's warehouse. The lower $L_{A90,15min}$ levels measured at LT3 therefore appear to have been governed by the operation of this extract fan.

7.3.7 The $L_{A90,15min}$ sound levels of 42 to 43 dB measured at LT3 are assumed to provide a measure of the sound levels generated by Wienerberger's night-time operations in the proposed residential areas labelled as G and H.

7.3.8 A background sound levels measured at LT1, which do not appear to have been influenced by the night-time commercial activity in the area, have therefore been used as a basis for deriving background sound levels for assessing Wienerberger's operations at night for all receptors.

7.3.9 The background sound levels derived to assess the commercial activity sound levels are presented in Table 7.3.

Measurement location	Representative Property Areas	Daytime background Noise Level $L_{A90,1hr}$	Night-Time background Noise Level $L_{A90,15min}$
LT1	A	49	32
LT2	B	46	32*
LT3	G	49	32*
ST1	C, D	44	32*
ST2	E, F	48	32*
ST3	H	48	32*

TABLE 7.3: BACKGROUND SOUND LEVEL, L_{A90}, AT MEASUREMENT POINTS

*Note: * - Based on LT1 measurements due to potential influence from plant operational during night-time periods*

Determination of the Specific Sound Level

7.3.10 The specific sound level is the equivalent continuous A-weighted sound pressure level produced by the specific sound source at the assessment location over a given time.

7.3.11 The specific sound levels have been determined by calculation via acoustic modelling, as detailed in Section 6.

Acoustic Feature Correction and Rating Levels

7.3.12 BS 4142 advises that a rating penalty should be established, based on the assessment of a sound's characteristics, and added to the specific sound level where appropriate.

7.3.13 Subjectively there were no notable acoustic features (i.e. tonality, intermittency, or impulsivity) audible at a location considered to be representative of the nearest proposed residential receptor during the attended survey. However, BS4142 states that "*Where the specific sound features characteristics that are neither tonal nor impulsive, nor intermittent, though otherwise are readily distinctive against the residual acoustic environment, a penalty of 3 dB can be applied.*". A +3 dB has been applied as cautious allowance for sound feature characteristics that may be readily distinctive at each receptor.

7.3.14 The daytime rating levels for the modelled worse-case scenario for property areas F and G are presented in Table 7.4. Daytime rating levels for the other property areas are presented in Tables B9 to B14 of Appendix B.

Receptor	Floor	Specific Sound Level, dB ($L_{Aeq,1hr}$)	Feature Correction	Rating Sound Level, dB ($L_{Ar,1hr}$)	Background Sound Level dB ($L_{A90,T}$)	Excess of rating over background sound level, dB
F01	Ground	38	3	41	48	-8
F02		34	3	37		-11
F03		33	3	36		-12
F04		33	3	36		-12
F05		34	3	37		-11
F06		34	3	37		-11
F07		44	3	47		-1
F08		41	3	44		-4
F09		39	3	42		-6
F10		31	3	34		-14
F11		34	3	37		-11
F12		31	3	34		-14
F13		31	3	34		-14
F14		36	3	39		-9
F15		29	3	32		-16
F16		37	3	40		-9
F17		39	3	42		-6
F18		40	3	43		-5
G01	Ground	41	3	44	48	-4
G02		41	3	44		-4
G03		37	3	40		-8
G04		37	3	40		-8
G05		41	3	44		-4
G06		42	3	45		-3
G07		41	3	44		-4
G08		38	3	41		-7
G09		36	3	39		-9
G10		32	3	35		-13
G11		32	3	35		-13
G12		39	3	42		-6
G13		39	3	42		-6
G14		39	3	42		-6
G15		38	3	41		-7
G16		39	3	42		-6
G17		39	3	42		-6
G18		39	3	42		-6
G19		31	3	34		-14
G20		32	3	35		-13
G21		30	3	33		-15
G22		30	3	33		-15
G23		37	3	40		-9
G24		38	3	41		-8
G25		39	3	42		-6

TABLE 7.4: CALCULATED SPECIFIC AND RESULTANT RATING LEVELS- DAYTIME – PROPERTY AREAS F & G

7.3.15 According to BS 4142:2014+A1:2019, the greater the difference, the greater the magnitude of the impact. A level difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context, while a level difference of around +5 dB

or more is likely to be an indication of an adverse impact, again depending on the context. Where a rating Level falls below the background noise level, then this provides an indication of the specific sound source as having a low impact, depending on the context.

7.3.16 Results for all properties show calculated daytime rating levels to fall below the background noise level by at least 1 dB. According to BS 4142, this is an indication of a low impact, depending on the context.

7.3.17 The night-time rating levels calculated in the property areas labelled G and H are presented in Table 7.5. Night-time rating levels for the other property areas are presented in Tables B15 to B20 of Appendix B.

Receptor	Floor	Specific Sound Level, dB ($L_{Aeq,15min}$)	Feature Correction	Rating Sound Level, dB ($L_{Ar,15min}$)	Background Sound Level dB ($L_{A90,T}$)	Excess of rating over background sound level, dB
F01	1st	48	3	51	32	+19
F02		48	3	51		+19
F03		46	3	49		+17
F04		42	3	45		+13
F05		45	3	48		+16
F06		41	3	44		+12
F07		54	3	57		+25
F08		51	3	54		+22
F09		51	3	54		+22
F10		46	3	49		+17
F11		44	3	47		+15
F12		41	3	44		+12
F13		40	3	43		+11
F14		47	3	50		+18
F15		40	3	43		+11
F16		44	3	47		+15
F17		45	3	48		+16
F18		46	3	49		+17
G01	1st	47	3	50	32	+18
G02		41	3	44		+12
G03		37	3	40		+8
G04		38	3	41		+9
G05		45	3	48		+16
G06		51	3	54		+22
G07		46	3	49		+17
G08		47	3	50		+18
G09		37	3	40		+8
G10		38	3	41		+9
G11		37	3	40		+8
G12		44	3	47		+15
G13		43	3	46		+14
G14		42	3	45		+13
G15		42	3	45		+13
G16		41	3	44		+12
G17		40	3	43		+11
G18		40	3	43		+11
G19		36	3	39		+7
G20		35	3	38		+6
G21		34	3	37		+5
G22		34	3	37		+5
G23		34	3	37		+5
G24		39	3	42		+10
G25		39	3	42		+10

TABLE 7.5: CALCULATED SPECIFIC AND RESULTANT RATING LEVELS – NIGHT-TIME – PROPERTY AREAS F & G

7.3.18 The night-time rating levels presented above in Table 7.5 are calculated to exceed the night-time background sound level by up to 25 dB at receptors with dwellings in area F worst affected. According to BS 4142, this is an indication of a significant adverse impact.

7.4 Context

7.4.1 When considering the significance of an impact BS 4142 advises that the context of the impact should be taken into account. The context of the impact should consider factors such as: the absolute level of sound; the character and level of the residual sound compared to the character and level of the specific sound; 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.

7.4.2 The 'specific' $L_{Aeq,15min}$ sound levels calculated from the operation of the extract fan in the northern area of the site range between 40 to 54 dB $L_{Aeq,15min}$ at receptor area F, between 34 to 51 dB $L_{Aeq,15min}$ at receptor area G.

7.4.3 The operation of Wienerberger's extract fan at night appears to have governed the lower range of ambient $L_{Aeq,T}$ and background $L_{A90,T}$ sound levels measured at LT3 during the night-time periods of the noise survey .

7.4.4 The fan sound levels are likely to be masked to a degree when trains are passing the development site, however, in the absence of the train noise, then the extract fan sound is likely to be clearly distinguishable from the residual sound environment given the potential absence of any other significant sources of sound in the northern area of the development site at night.

Uncertainty

7.4.5 Uncertainty in the measurements and calculations needs to be considered when assessing the outcome of an assessment. Possible sources of uncertainty are listed below:

- location of equipment – the positioning of equipment in the model is based on observations, figures and satellite imagery and as such is deemed to be representative;
- equipment use – no time correction has been applied to the measured noise sources for a worse-case scenario to provide a worst-case assessment;
- the sound sources and environment, including barriers, have been modelled based on satellite imagery and on-site observations;
- the lower range of ambient and background sound levels measured at LT3 at night-time have been assumed to be governed by the extract fan associated with Wienerberger's night-time operations; and
- the modal $L_{A90,15min}$ value of 32 dB measured during the night-time periods at LT1 has been assumed to provide a representative measure of the residual background sound level across the development site in the absence of the commercial sound generated by Wienerberger's night-time operations.

7.4.6 The outdoor propagation calculations are based on ISO 9613-2 1996. This states that calculations are made with attention restricted to downwind conditions of propagation. Other limitations include other meteorological and non-material limitations such as winds speeds being limited between 1-5 ms^{-1}. It is also noted in ISO 9613-2 1996 that the estimated errors for octave-band sound pressure levels, calculated under the same conditions as the broadband

calculation, may be somewhat larger than the errors for A-weighted broadband sources. Between 0-100 m and 100-1000 m the estimated accuracy is displayed in Table 7.6.

Height	Distance	
	0 < d < 100 m	100m < d < 1000 m
0 < h < 5 m	+/-3 dB	+/-3 dB
5m < h < 30 m	+/-1 dB	+/-3 dB

TABLE 7.6: ESTIMATIONS OF UNCERTAINTY IN ISO 9613-2

Notes: h – mean height of source and receiver;
d – distance between source and receiver; and
estimates made from situations where there are no effects due to reflection or attenuation due to screening

7.4.7 Rounding has been used in the derivation of the background sound levels and calculations, to avoid an impression of precision to decimal places. Rounding has been to integer values with 0.5 being rounded up on completion of the statistical analysis.

7.4.8 The calculations used in this assessment have been conducted using the CadnaA model with pre and post-processing of the data in Excel. Error checking in the calculations is conducted at all stages as part of Southdowns' quality control procedures.

7.5 Cumulative Impacts

Britannia Energy Recovery Facility

7.5.1 A new Recycling, Recovery and Renewable Energy Facility is proposed to be constructed to the north of the Pondtail development site, beyond Wienberger's premises.

7.5.2 An operational noise and vibration assessment of the potential impacts generated by this incoming facility is presented in the Development's Environmental Statement (ES) [11]. The residential receptor in the ES considered to be approximately representative of the nearest residential receptors located within the Pondtail development site is No.11 Station Road. The operational assessment of the Energy Facility reports BS 4142 level differences (rating vs background noise levels) at this receptor of 6 dB below the background noise level during a daytime (07:00 to 19:00 hrs) period, 8 dB below the background noise level during an evening (19:00 hrs to 23:00 hrs) period and 0 dB below the background noise level during a night-time period.

7.5.3 According to BS 4142:2019, where the rating level does not exceed the background sound level this is an indication of the specific sound source having a low impact, depending on the context.

7.5.4 Specific ambient $L_{Aeq,1hr}$ noise levels calculated at No.11 station Street are reported to be 37 dB $L_{Aeq,1hr}$ during the day and night-time periods and 35 dB $L_{Aeq,1hr}$ during an evening period.

7.5.5 The assessment of these specific noise levels in the ES indicates that based on a sound attenuation of 15 dB for a partially open window, the specific sound levels generated by the new Energy Facility (not accounting for other existing sources of sound) fall below the internal ambient guideline noise levels for habitable rooms presented in BS 8233:2014. The specific sound levels are also reported to be below the guidance levels for outdoor amenity spaces.

7.5.6 The operational assessment concludes that at the closest noise sensitive receptors to the incoming development there could be a small change to baseline conditions during the daytime and night-time periods and a negligible change during the evening period.

7.5.7 The impact of noise from activities on site is forecast to be low, with the sensitivity of the residential receptors in the assessment categorised as 'medium'. The assessment therefore concludes that there could be a direct, permanent minor adverse effect due to noise from the operation of the facility.

7.5.8 The ES's conclusions go on to indicate that in the event that noise from the site is audible, it is unlikely to cause any changes in behaviour or attitude or a perceived change in quality of life. As such, noise from the operations on site are forecast to be at or below LOAEL (Lowest Observable Adverse Effect Level).

7.5.9 Cumulative operational noise effects with other consented developments are assessed to be of negligible to minor adverse significance, and cumulative effects from a change in noise levels due to road traffic on the local road network are reported to be minor adverse.

Biffa Brookhurst Wood Landfill

7.5.10 A Soil Heat Treatment Facility (SHTF) and Soil Washing Facility (SWF) have been approved for development on land at Brookhurst Wood on Langhurstwood Road.

7.5.11 This incoming development is located to the north of the proposed Pondtail development site and to the north of the Britannia Energy Recovery Facility.

7.5.12 The permitted hours of operation of the development are understood to be 07:30-18:00 hours Monday to Friday and 07:00-13:00 hours on Saturdays.

7.5.13 The nearest noise sensitive receptor to the Pondtail development site assessed in the Environmental Statement (ES) [12] that accompanied the planning application for the development was labelled R3 – Bramblehurst.

7.5.14 The highest daytime noise rating level calculated at R3 from the combined operation of the SHTF and SWF was 43 dB $L_{Ar,T}$. This rating level was reported to fall below a daytime background noise assessment level of 55 dB $L_{A90,T}$ by 12 dB.

7.5.15 The noise assessment concludes that the operational noise levels assessed are below the Lowest Observable Adverse Effect Level (LOAEL) and sufficiently below existing background levels (which includes operations from the adjacent landfill), and as such that there is a low likelihood of any increase to the local noise environment.

8. VIBRATION ASSESSMENT

8.1 BS 6472-1:2008 Assessment

8.1.1 VDV magnitudes were found to be highest in the vertical Z-axis. The highest measured Z-axis daytime $VDV_{,16hr}$ and night-time $VDV_{,8hr}$ magnitudes are presented in Table 8.1.

8.1.2 Transfer functions from the ground surface to the floors of buildings can be dependent on the construction of the foundation and the floor type, span and depth. Shown additionally in Table 8.1 are the daytime $VDV_{,16hr}$ and night-time $VDV_{,8hr}$ magnitudes transfer functions of VDV x 1.0 and VDV x 2 which is taken as the worse-case scenario corresponding to ground and 1st floor respectively. VDV magnitudes are presented with the probability of adverse comment according to BS6472-1:2008.

Transfer Function	Representative Floor	Daytime 16hr (07:00 - 23:00) Vibration Dose Value, $ms^{-1.75}$	Night-time 8hr (23:00 - 07:00) Vibration Dose Value, $ms^{-1.75}$	BS 6472-1 Probability of Adverse Comment
X 1.0	Ground	0.03	0.02	Adverse comment not expected
X 2.0	1st	0.06	0.04	Adverse comment not expected

TABLE 8.1: ASSESSMENT OF VDV MAGNITUDES AT PONDTAIL FARM

8.1.3 The results of the vibration assessment indicate that VDV magnitudes would fall within the 'Adverse comment not expected' range of the BS 6472-1:2008 assessment criteria. Based on this assessment, no mitigation against human exposure to vibration has been deemed necessary for the proposed development on Pondtail Farm.

9. NOISE MITIGATION OPTIONS

9.1.1 The results of the noise assessment indicate that internal noise levels are likely to achieve the BS 8233 internal $L_{Aeq,T}$ noise criteria within habitable rooms with windows closed, provided that a suitable specification of façade sound insulation is used. It is recommended that the construction of the roof and any external façade walls are considered to ensure that these elements do not present a weakness in the sound insulation of the façade.

9.1.2 Optimisation of the development design and layout to incorporate methods that reduce the impact of road traffic and rail noise would allow more of the dwellings to achieve satisfactory internal levels with windows partially open, which would minimise the need for alternative means of ventilation. Orienting the glazed facades of habitable rooms (i.e. bedrooms and living rooms) away from the A264 and the railway line would provide a natural benefit from the acoustic screening provided by the building itself, with non-habitable rooms such as bathrooms, kitchens and circulation areas acting as buffers between the noise source and habitable rooms.

9.1.3 In dwellings where it is not possible to orientate habitable rooms away from noise sources in order to mitigate the effects of noise on occupants of the proposed development, windows will need to be kept closed. Whilst it is highly likely that desirable internal noise levels will be achievable when windows are closed, with the windows open, calculated noise levels exceed BS 8233 criteria. It will therefore be necessary to install alternative air flow/ventilation systems.

9.1.4 The ventilation strategy for living rooms and bedrooms is likely to be influenced by non-acoustical factors such as overheating or air quality constraints but may include options such as:

- trickle vents installed in the window units;
- acoustics air bricks installed in the façade; and/or
- passive or mechanical silenced ventilation (whole house or individual).

9.1.5 Calculations show that the ProPG requirements of no more than 10 events over 45 dB $L_{Amax,F}$ in a single night should be achieved with windows closed, subject to detailed frequency-dependent calculations during the detailed design stage.

9.1.6 An existing noise barrier runs along the majority of the A264 at the south of the proposed site. As this is already in place, an additional noise barrier at the south of the proposed site has not been investigated.

9.1.7 The railway to the west of the site sites upon a raised embankment, approximately 2.4m above the local ground of the proposed site. A noise barrier along this noise source has not been investigated as it would need to exceed the height of the railway track before providing any significant sound reduction benefit.

9.2 Existing Fixed Plant Noise Sources

9.2.1 The assessment of the commercial noise indicates a potential exceedance by a significant margin of residual background sound levels measured onsite during night-time periods. This sound impact has been attributed to the extract fan associated with Wienerberger's night-time operations.

9.2.2 Following the guidance given in NPPF and the Sussex Noise Planning Guidance document, the developer may therefore be required to factor into their planning application suitable

mitigation measures to avoid potential significant adverse impacts on health and the quality of life for potential future occupiers of the development.

9.2.3 Generic noise control options to help mitigate the sound impact calculated at the residential receptors include:

- maximising the spatial separation between Wienerberger's premises and the nearest residential properties;
- the use of single aspect dwellings, with the orientation of glazed facades of habitable rooms facing away from Wienerberger's premises;
- the positioning of sleeping areas and other habitable areas on the side of the residential buildings furthest from the significant sources of noise affecting the development site;
- the positioning of rooms which are less sensitive (kitchens, bathrooms, storage rooms, corridors, stairwells, etc.) on the noisier side of a property;
- the installation of sound insulating window glazing units to the external facades of habitable rooms that face towards or have a line-of-sight to Wienerberger's premises;
- the provision of mechanical ventilation inside the habitable rooms of dwellings;
- minimising the number of doors and windows on the noisier side of dwellings;
- the installation of a noise barrier along the northern boundary of the development site to block, where possible, the line-of-sight between the residential dwellings and Wienerberger's premises;
- use of the proposed commercial units as a form of acoustical screening and buffer zone between Wienerberger's premises and the residential properties; and
- reducing Wienerberger's plant sound emission at source.

9.2.4 A combination of the above noise mitigation measures is likely to be required to reduce the potential noise impact on the proposed residential development.

9.2.5 It is understood that the project design team has evaluated the above mitigation measures and proposes to incorporate enhanced sound insulating window glazing units, mechanical ventilation and the installation of a bespoke noise barrier into the scheme to help mitigate the potential sound impact of Wienerberger's extract fan on the proposed residential development.

10. SUMMARY OF FINDINGS

10.1.1 A noise and vibration assessment has been undertaken to accompany a planning application for the proposed residential development at Pondtail Farm in Horsham, West Sussex.

10.1.2 Ambient ($L_{Aeq,T}$) and maximum ($L_{Amax,F}$) noise levels estimated inside habitable rooms of the proposed development and external noise levels in outdoor amenity areas have been considered as part of the assessment based on the indicative layouts presented in this report.

10.1.3 The main sources of transportation noise governing the noise environment across the development site are road traffic on the A264, rail traffic on the Sutton & Mole Valley line, whilst vehicle movements on Langhurst Road and Mercer Road are lower secondary sources of noise in the area.

10.1.4 Sources of commercial noise affecting the development site include plant associated with Wienerberger's (a brick manufacturer) day and night-time commercial operations and various car maintenance businesses located to the north of the development site.

10.1.5 The results of the internal noise assessment indicate that for the receptor locations considered across the development site, the daytime and night-time criteria of 35 dB $L_{Aeq,16hr}$ and 30 dB $L_{Aeq,8hr}$ set out in British Standard BS 8233 should be achieved inside habitable rooms with closed sound insulating windows.

10.1.6 The BS 8233 simplified calculation method can underestimate internal noise levels by up to 5 dB, therefore, whilst the calculated noise levels documented in this report indicate that desirable internal noise levels should be achieved in principle, it is recommended that further and more detailed façade calculations are carried out during the detailed design stage of the project. Such calculations should take into account the frequency dependent sound reductions of the finalised façade elements, including the glazing, external walls and roof constructions.

10.1.7 Following the guidance given in ProPG, individual noise events exceeding 45 dB $L_{Amax,F}$ should not exceed 10 occurrences per night with windows closed using generic façade sound insulation values, based on the baseline survey results and the estimated $L_{Amax,F}$ levels at the facades of the properties in the development.

10.1.8 The internal noise criteria presented in BS 8233:2014 are unlikely to be achieved inside rooms with windows partially open for natural air ventilation purposes at multiple properties across the development. As indicated in BS 8233, an alternative ventilation system to opening a window should therefore be incorporated into the building design that does not compromise the façade insulation or the resulting noise level when relying on closed windows to meet the guideline values.

10.1.9 External areas within dwelling areas labelled as G and H are calculated to fall below the lower guideline limit of 50 dB $L_{Aeq,16hr}$ contained in BS 8233. External areas within dwelling areas D and E are calculated to fall below the upper guideline limit of 55 dB $L_{Aeq,16hr}$ contained in BS 8233. External areas in residential areas labelled as A, B, C and F are calculated to exceed the 55 dB upper limit, however there are some external garden areas associated with these dwellings which fall below the upper limit.

10.1.10 An assessment has been undertaken of the commercial sources of noise affecting the development site using the principles of BS 4142:2014+A1:2019.

10.1.11 The assessment indicates that daytime rating levels are calculated to fall 1 dB or more below the daytime background sound assessment level, which is an indication of a low noise impact, depending on the context.

10.1.12 Night-time rating levels however are calculated to exceed the night-time background sound level by up to 25 dB in the residential areas located in the northern area of the development site. This sound impact has been attributed primarily to the operation of an extract fan that serves Wienerberger's commercial operations at night. Mitigation measures to reduce this potential sound impact are discussed in Section 9.

10.1.13 Human exposure to vibration at the site has been assessed using measured Vibration Dose Values obtained near to the railway line that passes the development site. The results of the assessment indicate that vibration magnitudes fall below the 'low probability of adverse comment' range of BS 6472-1:2008. No mitigation against human exposure to vibration has therefore been deemed necessary at the site.

10.1.14 The potential noise impacts on the proposed Pondtail development from the permitted incoming Britannia Energy Recovery Facility and Biffa Brookhurst Wood Landfill are considered in Section 7.5.

11. REFERENCES

1. British Standards Institution. BS 8233: 2014 ‘Guidance on Sound Insulation and Noise Reduction for Buildings’. 2014.

2. British Standards Institution. BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound'. 2019.

3. Association of Noise Consultants (ANC), Institute of Acoustics (IOA), Chartered Institute of Environmental Health (CIEH), ProPG: Planning & Noise, 2017.

4. World Health Organization. Guidelines for Community Noise. 2000.

5. Sussex Local Authorities. Planning Noise Advice Document: Sussex. March 2021.

6. British Standards Institution. BS 6472-1:2008: Guide to evaluation of human exposure to vibration in buildings. Vibration sources other than blasting.

7. Department for Environment, Food and Rural Affairs (DEFRA). 2010. Noise Policy Statement for England (NPSE). March 2010.

8. Ministry of Housing, Communities & Local Government. National Planning Policy Framework. July 2021.

9. Department for Communities and Local Government. Planning Practice Guidance – Noise. Revised July 2019.

10. World Health Organization. Night noise guidelines for Europe. 2009.

11. Wealden Recycling, Recovery and Renewable Energy Facility: Environmental Statement. Volume 1: Text. March 2018. RPS on behalf of Britaniacrest Recycling Ltd. RPS Reference: OXF9198.

12. Biffa Waste Services. Planning Application for a Soil Heat Treatment Facility. Land at Brookhurst Wood, Langhurstwood Road, Horsham. Environmental Statement. July 2019.

APPENDIX A: FIGURES

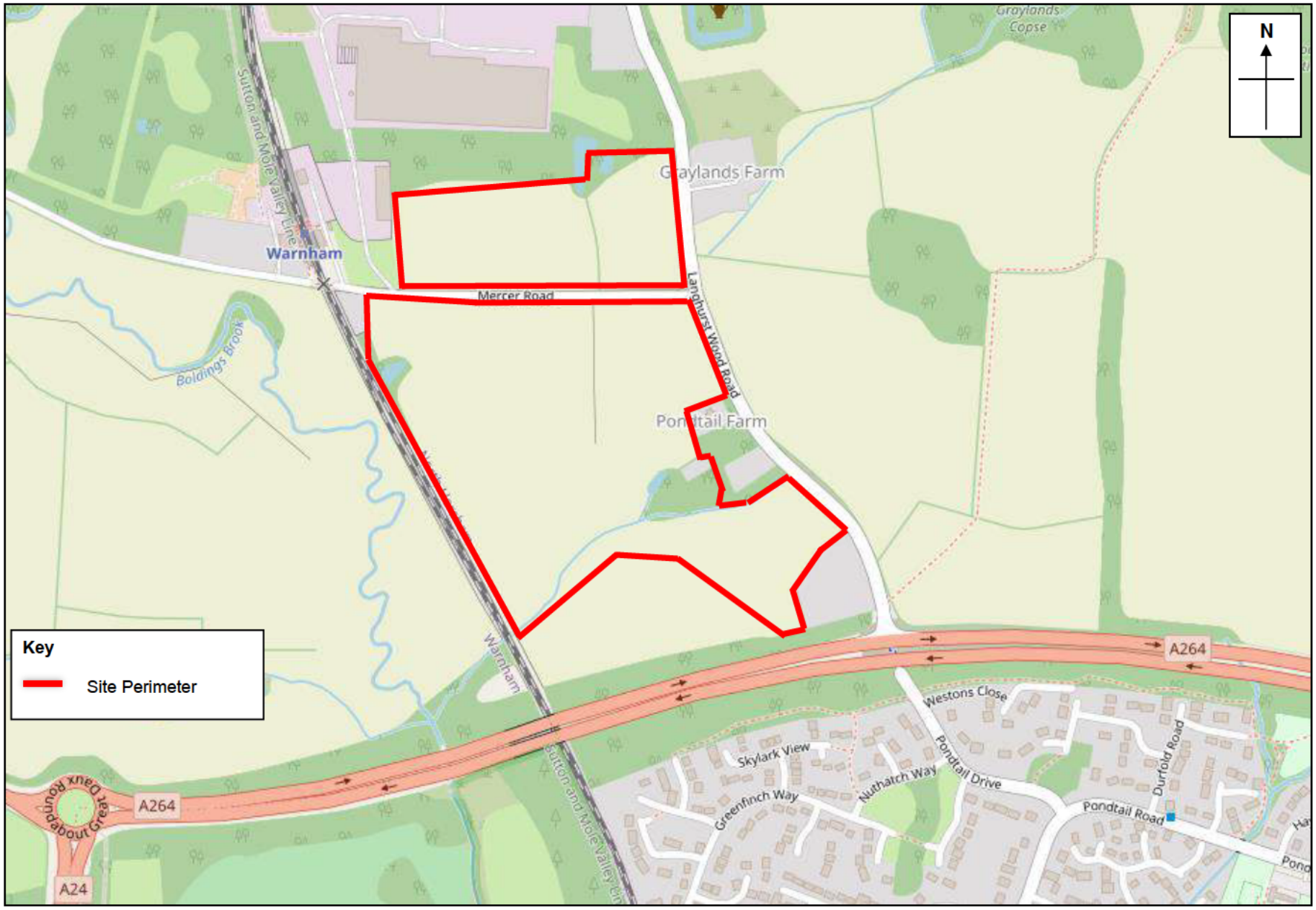

FIGURE A1: PROPOSED SITE LOCATION PLAN

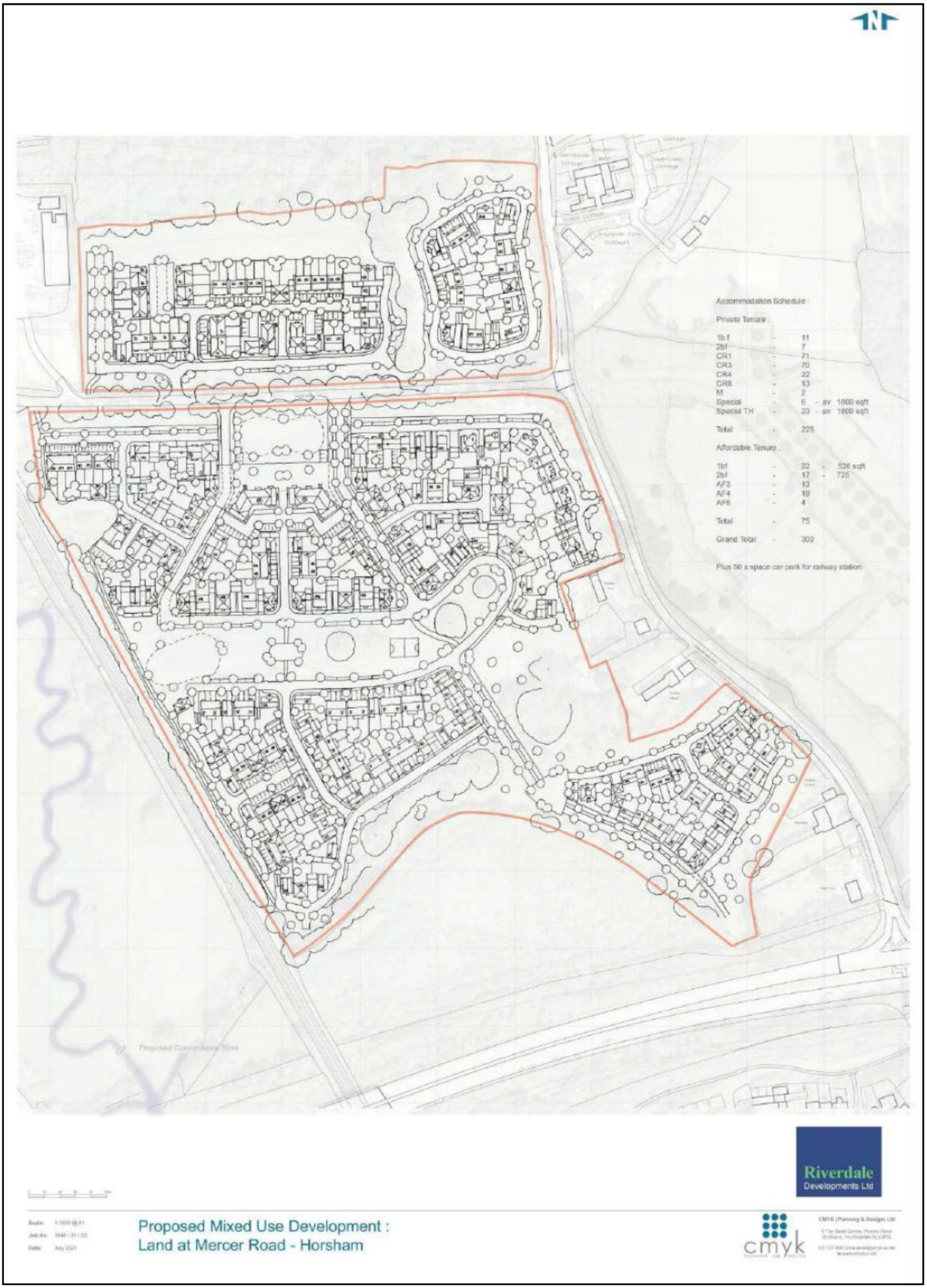

FIGURE A2: PLAN OF PROPOSED DEVELOPMENT AT PONDTAIL FARM

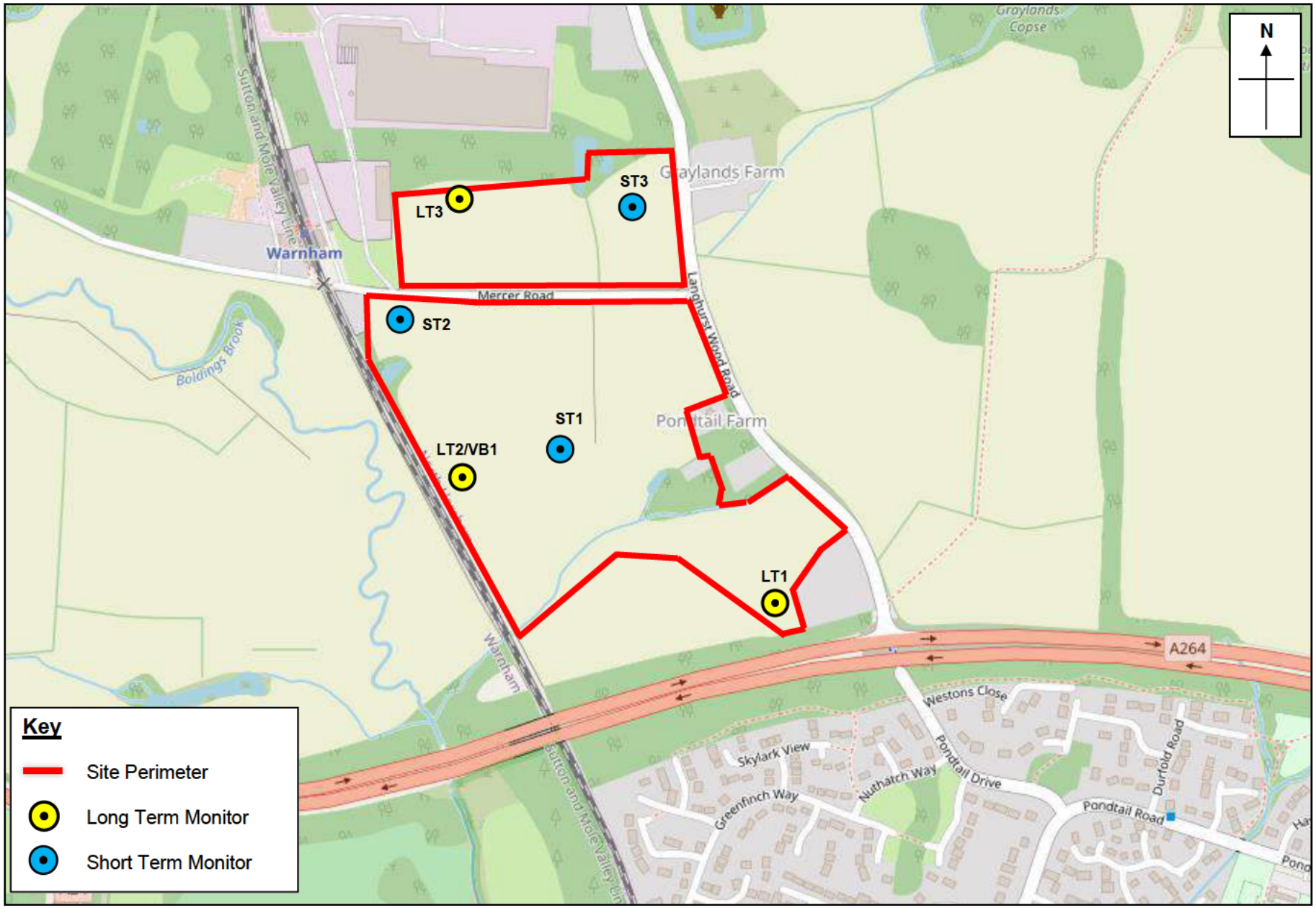

FIGURE A3: ATTENDED AND UNATTENDED NOISE AND VIBRATION MONITORING LOCATIONS

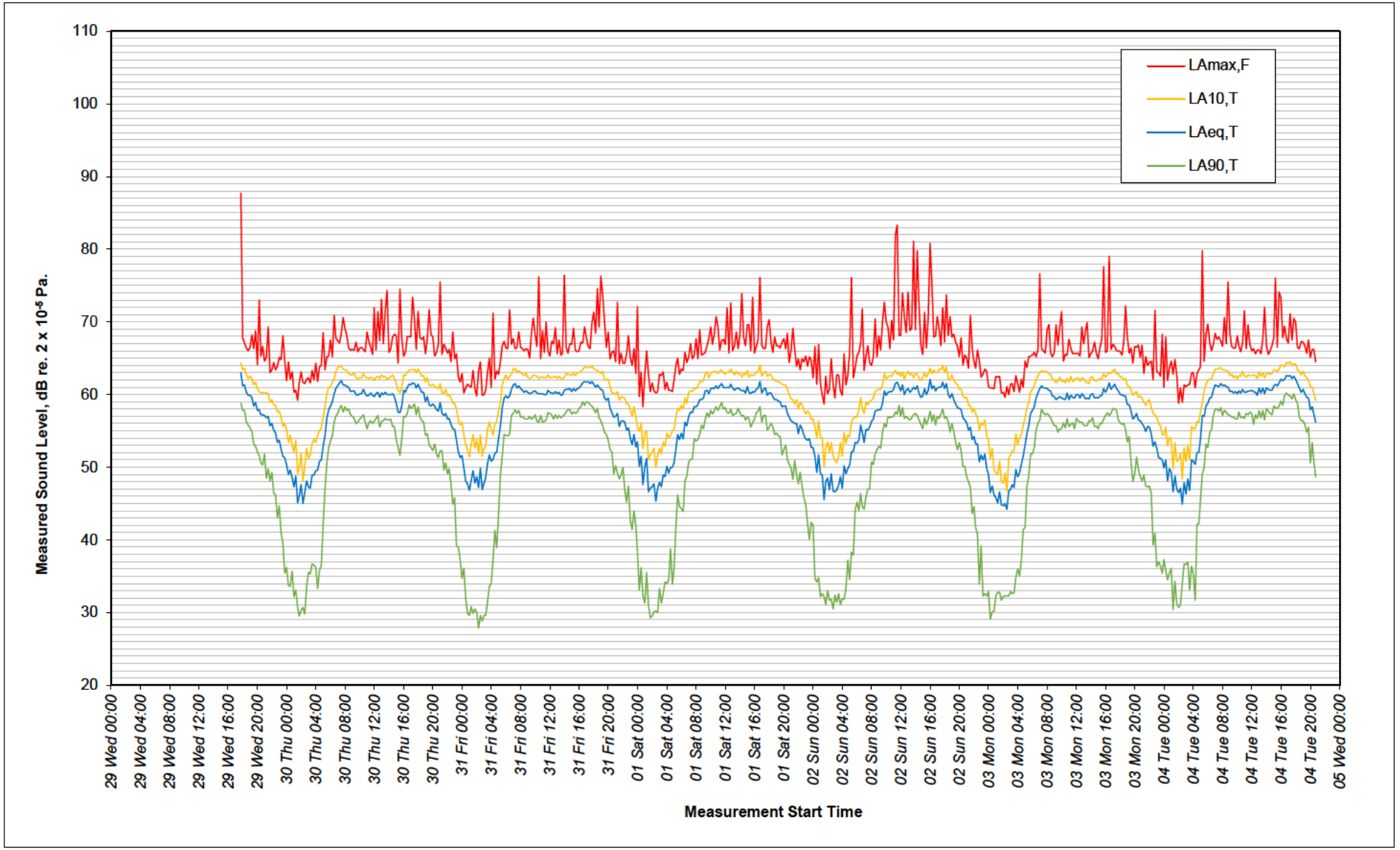

FIGURE A4: LT1 UNATTENDED CONTINUOUS NOISE MONITORING RESULTS, WEDNESDAY 29TH JULY – TUESDAY 4TH AUGUST 2020

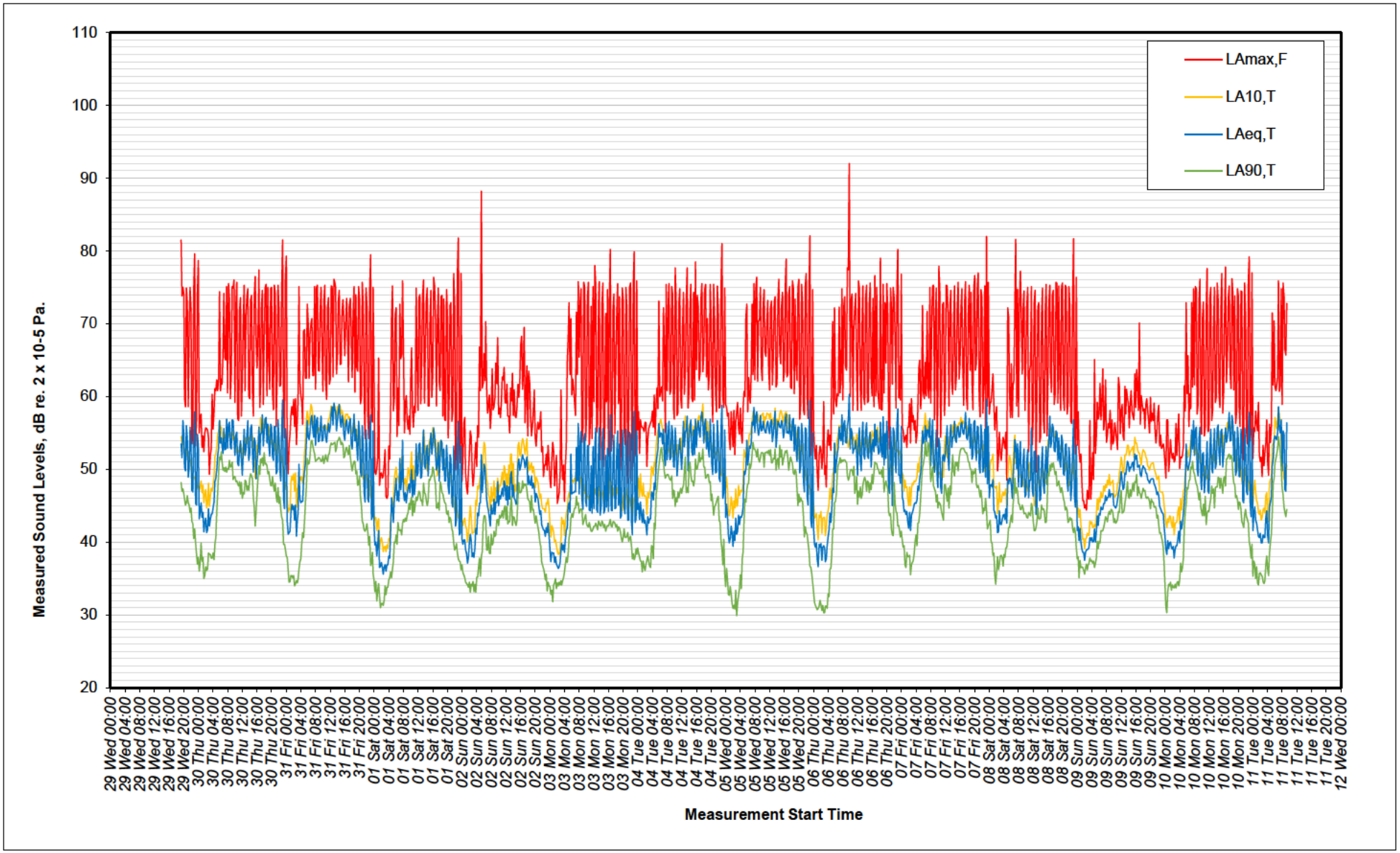

FIGURE A5: LT2 UNATTENDED CONTINUOUS NOISE MONITORING RESULTS, WEDNESDAY 29TH JULY – TUESDAY 11TH AUGUST 2020

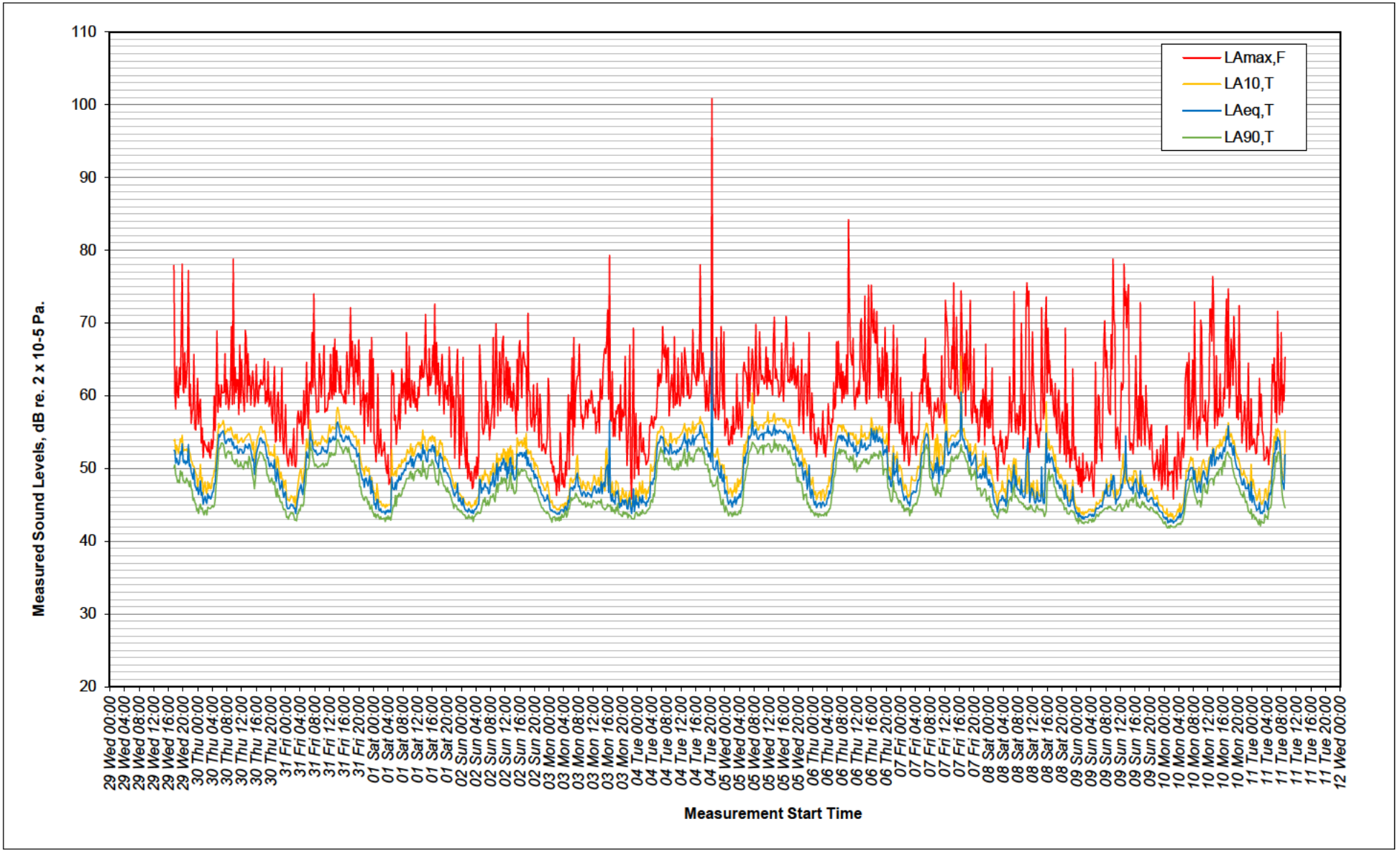

FIGURE A6: LT3 UNATTENDED CONTINUOUS NOISE MONITORING RESULTS, WEDNESDAY 29TH JULY – TUESDAY 11TH AUGUST 2020

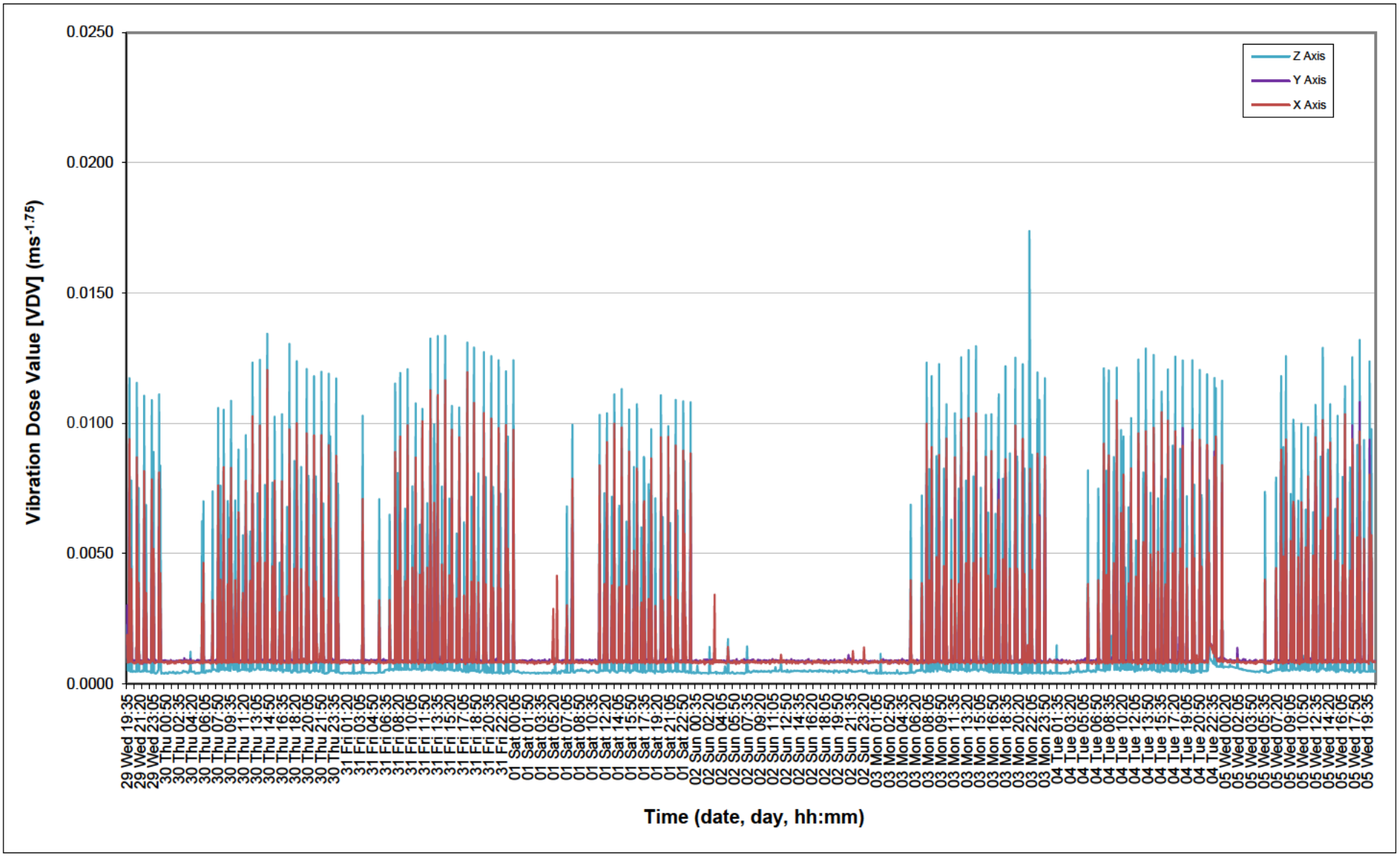

FIGURE A7: UNATTENDED VIBRATION SURVEY RESULTS AT PONDTAIL FARM, WEDNESDAY 29TH JULY – WEDNESDAY 5TH AUGUST 2020

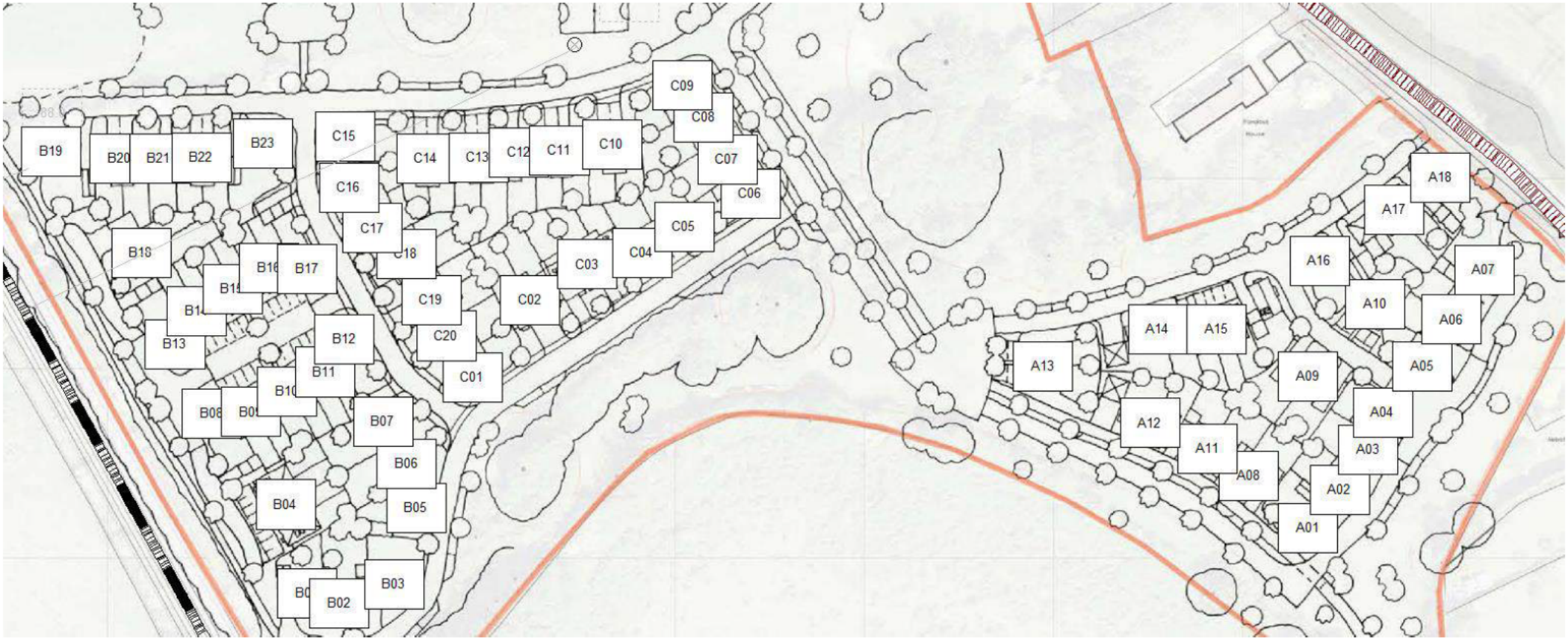

FIGURE A8: PLAN OF PROPOSED DEVELOPMENT AT PONDTAIL FARM – ASSESSMENT AREAS A, B & C

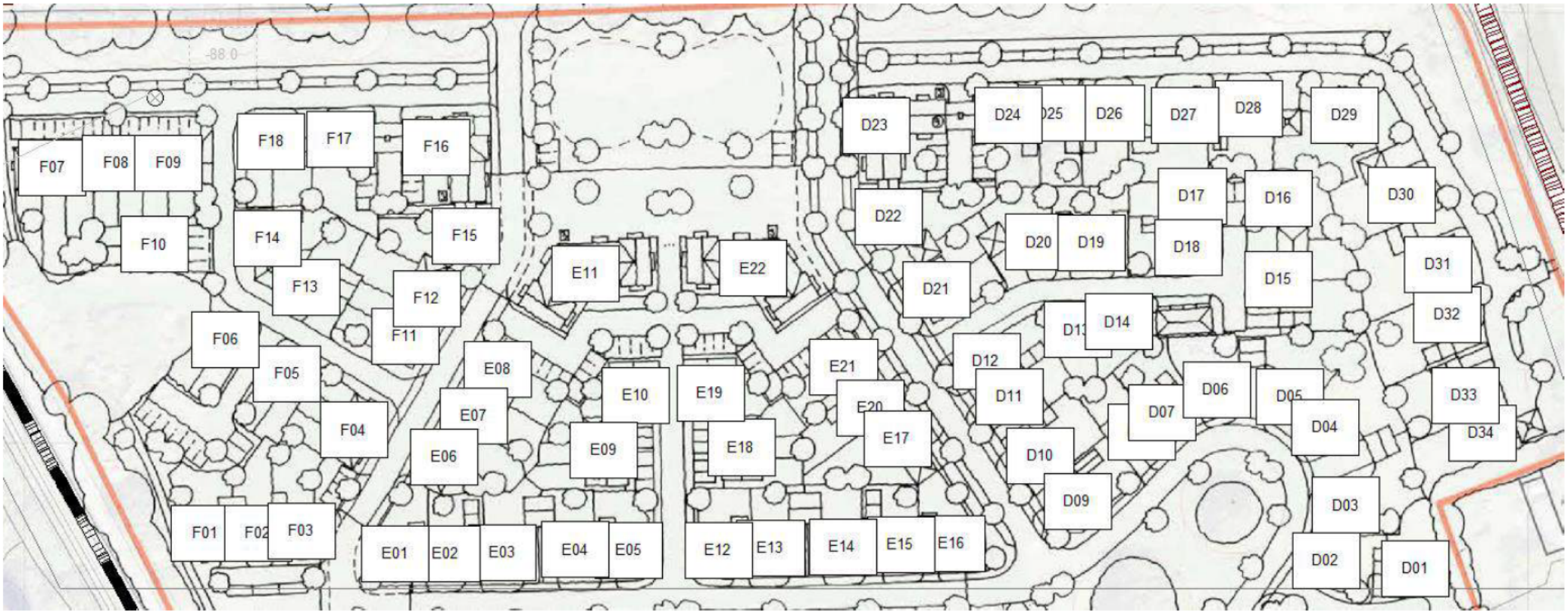

FIGURE A9: PLAN OF PROPOSED DEVELOPMENT AT PONDTAIL FARM – ASSESSMENT AREAS D, E & F

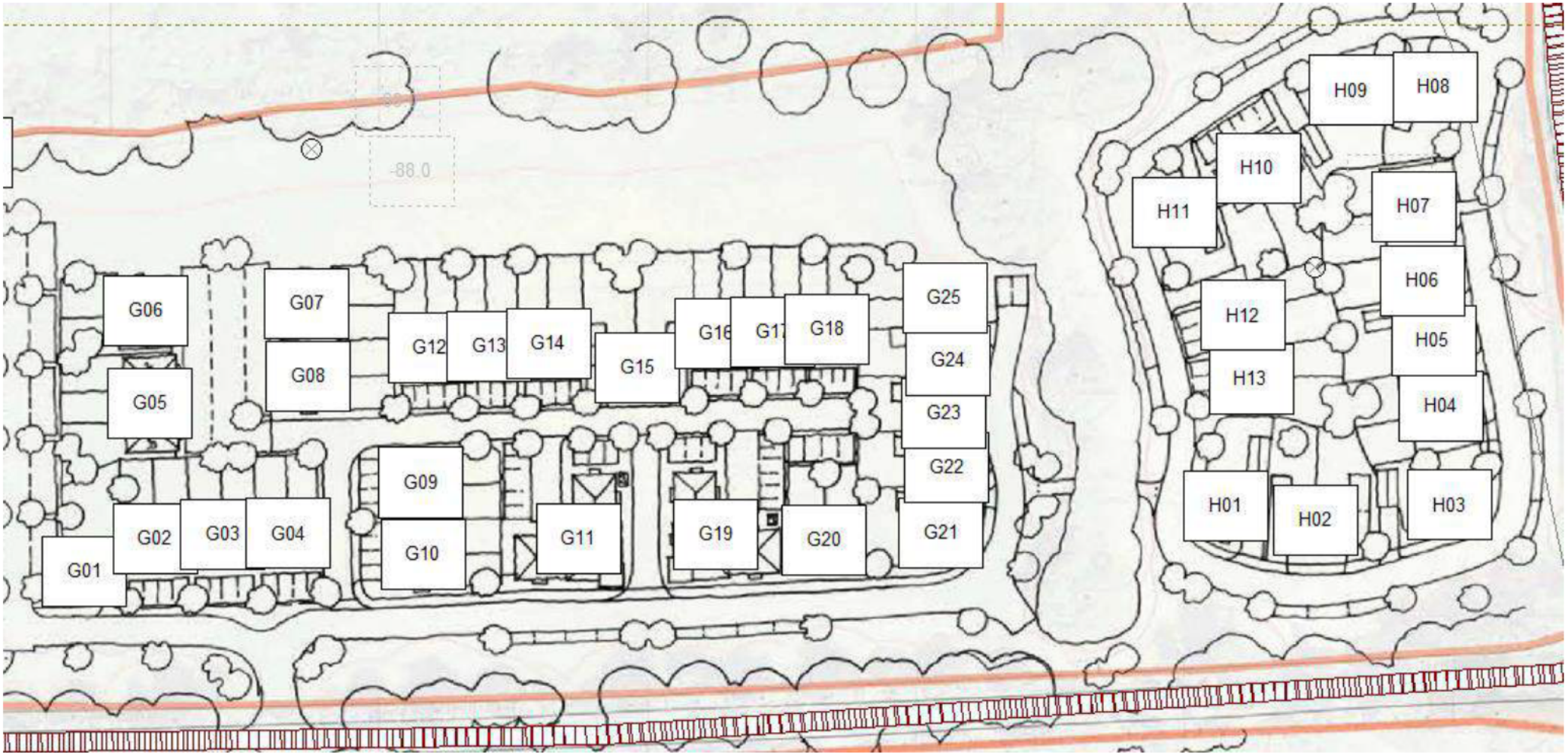

FIGURE A10: PLAN OF PROPOSED DEVELOPMENT AT PONDTAIL FARM – ASSESSMENT AREAS G & H

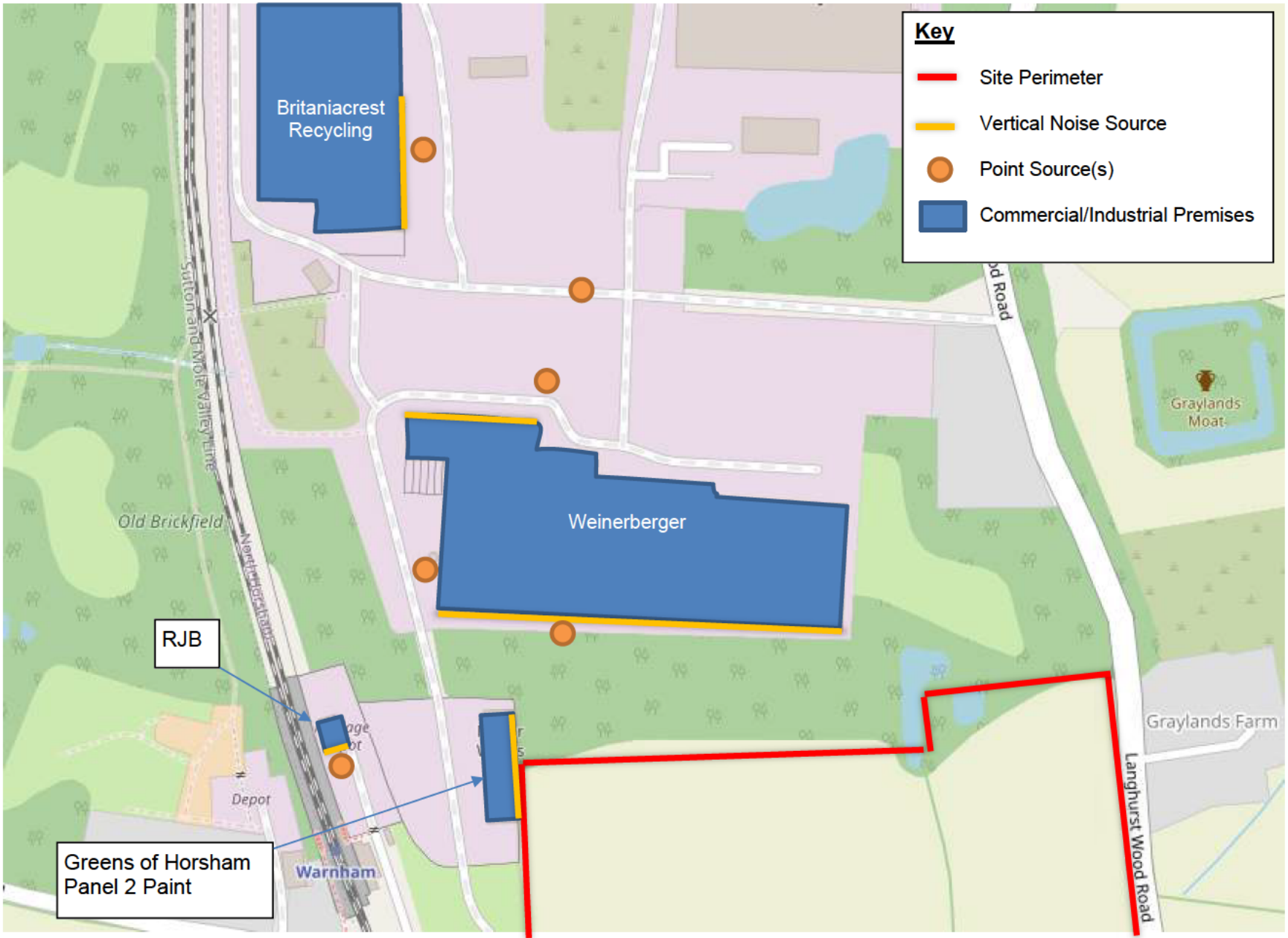

FIGURE A11: INDUSTRIAL & COMMERCIAL NOISE SOURCES

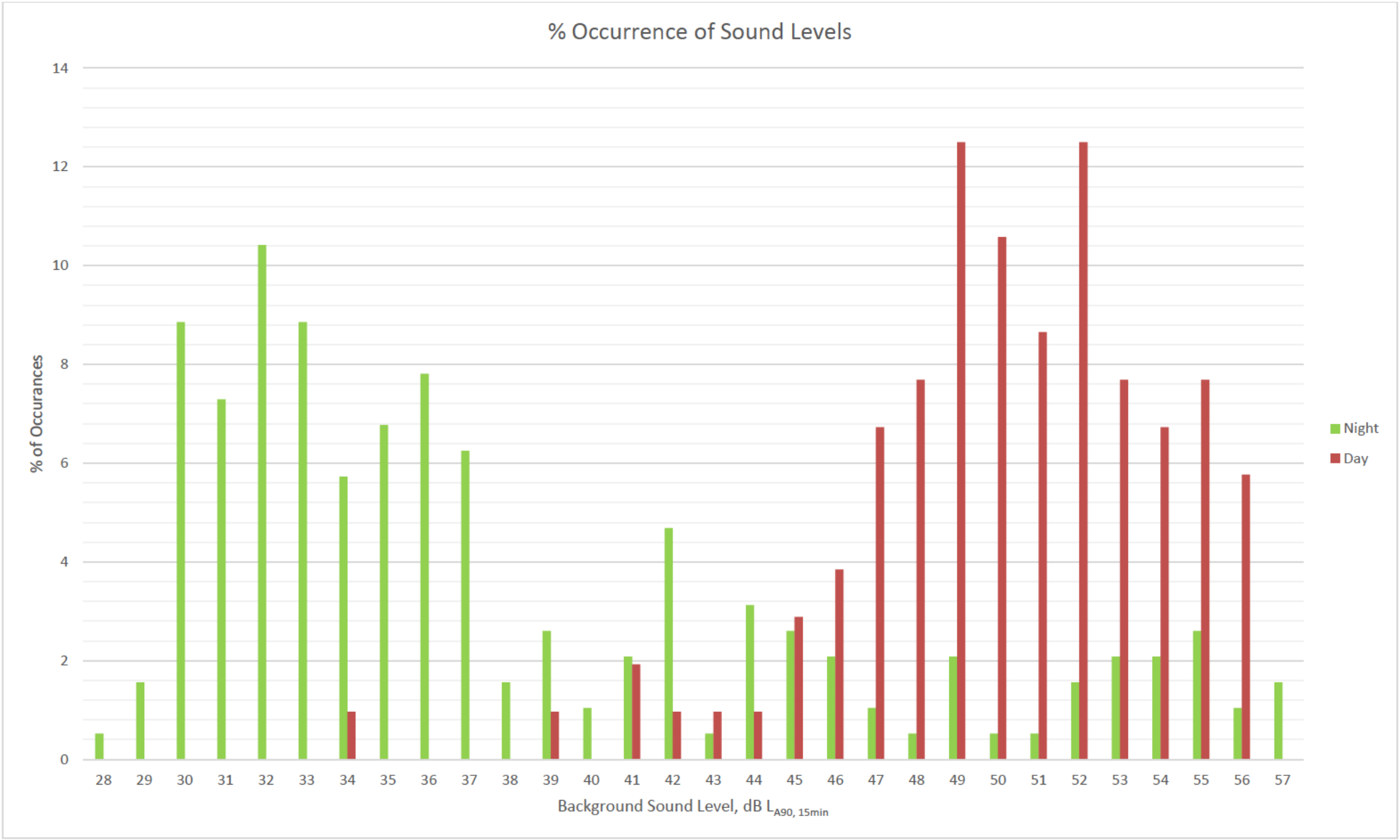

FIGURE A12: STATISTICAL ANALYSIS OF BACKGROUND SOUND LEVELS AT LT1

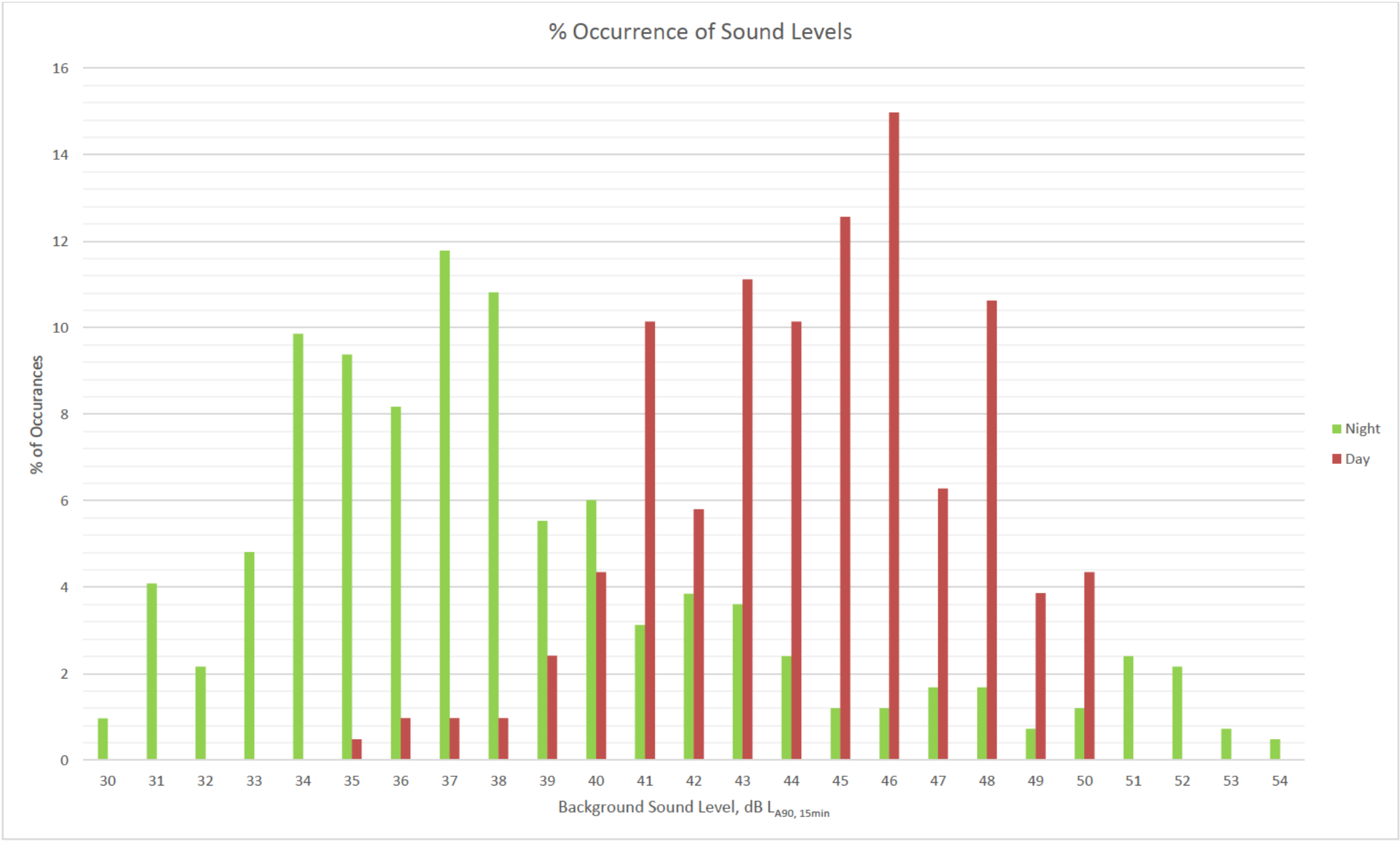

FIGURE A13: STATISTICAL ANALYSIS OF BACKGROUND SOUND LEVELS AT LT2

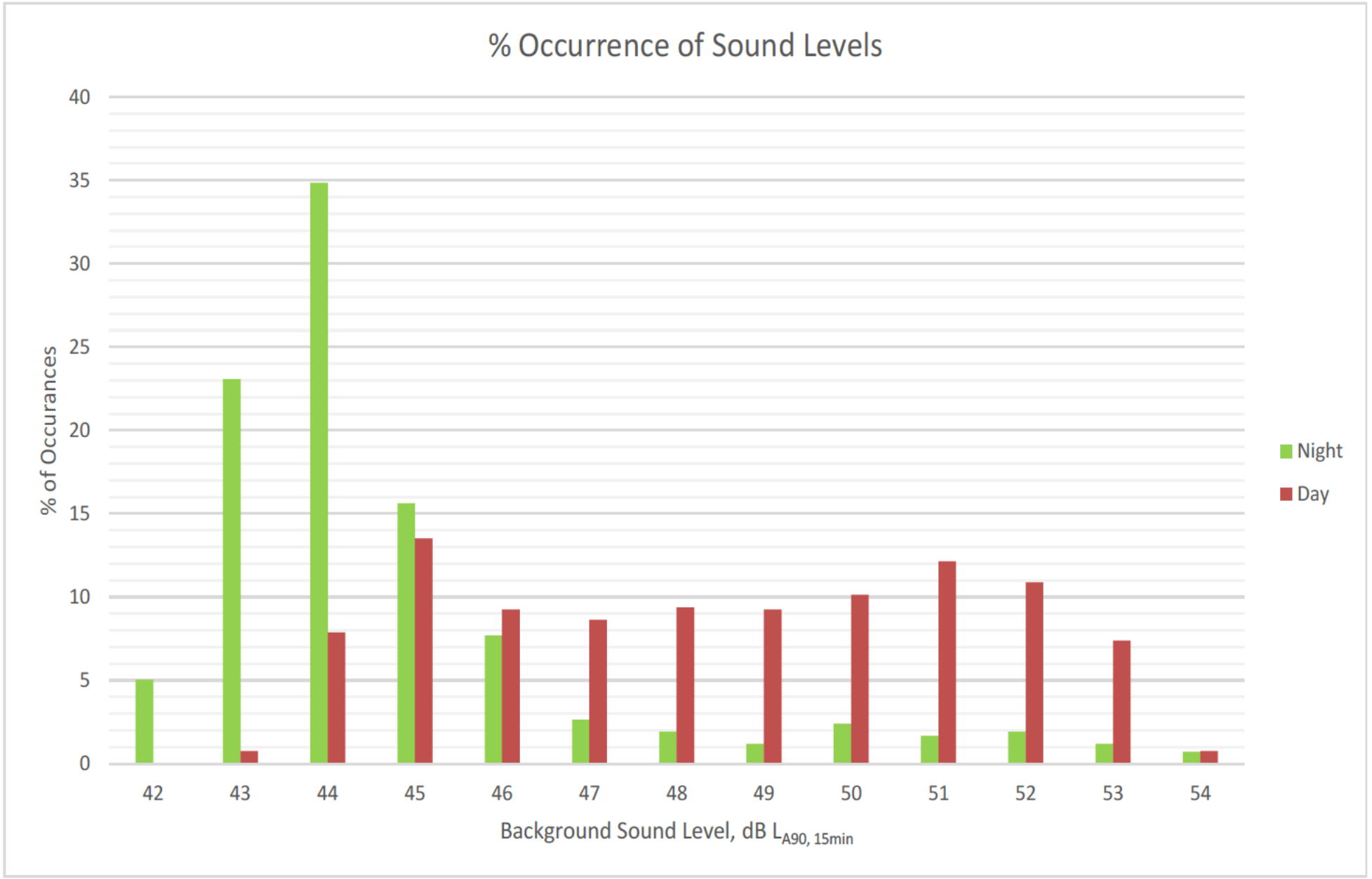

FIGURE A14: STATISTICAL ANALYSIS OF BACKGROUND SOUND LEVELS AT LT3

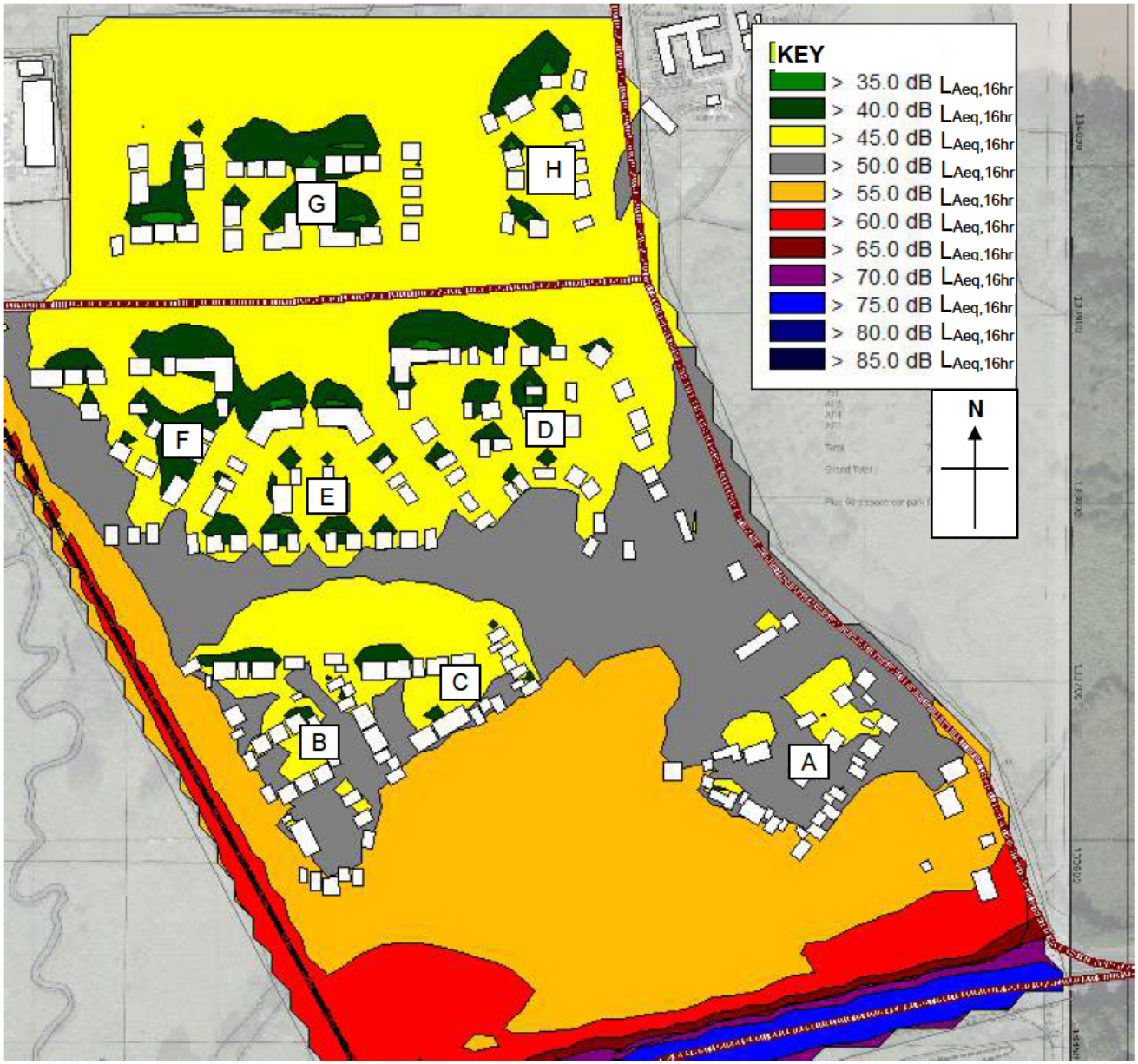

FIGURE A15: DAYTIME FREE-FIELD NOISE CONTOUR PLOT OF PROPOSED SITE AT 1.5M HEIGHT

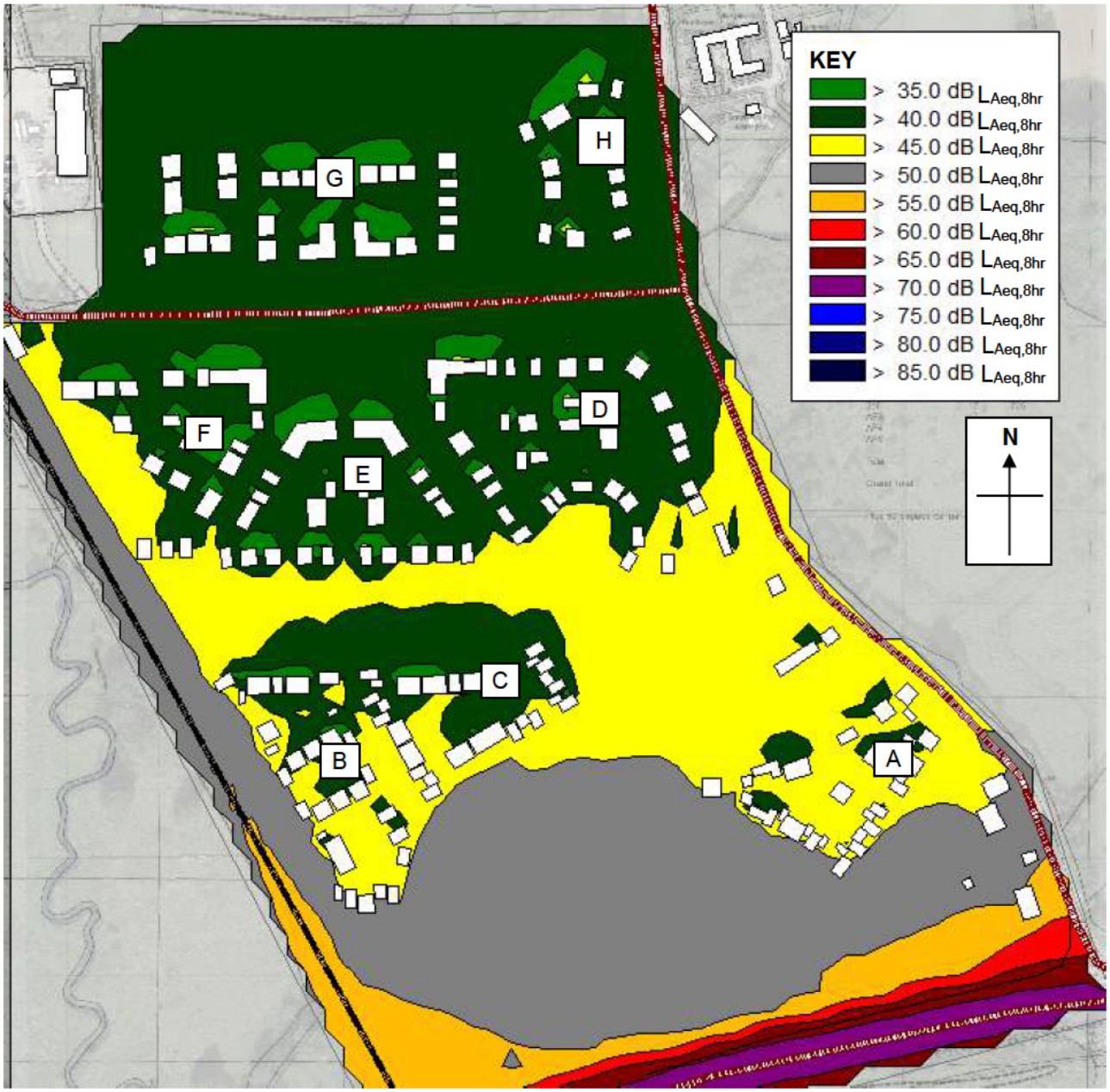

FIGURE A16: NIGHT-TIME FREE-FIELD NOISE CONTOUR PLOT OF PROPOSED SITE AT 4.0M HEIGHT

FIGURE A17: DAYTIME – PROPERTY FACADES - EXTERNAL AMENITY AREAS

FIGURE A18: DAYTIME – GROUND FLOOR – PROPERTY FACADES – INTERNAL NOISE LEVEL

FIGURE A19: DAYTIME – 1ST FLOOR – PROPERTY FACADES – INTERNAL NOISE LEVEL

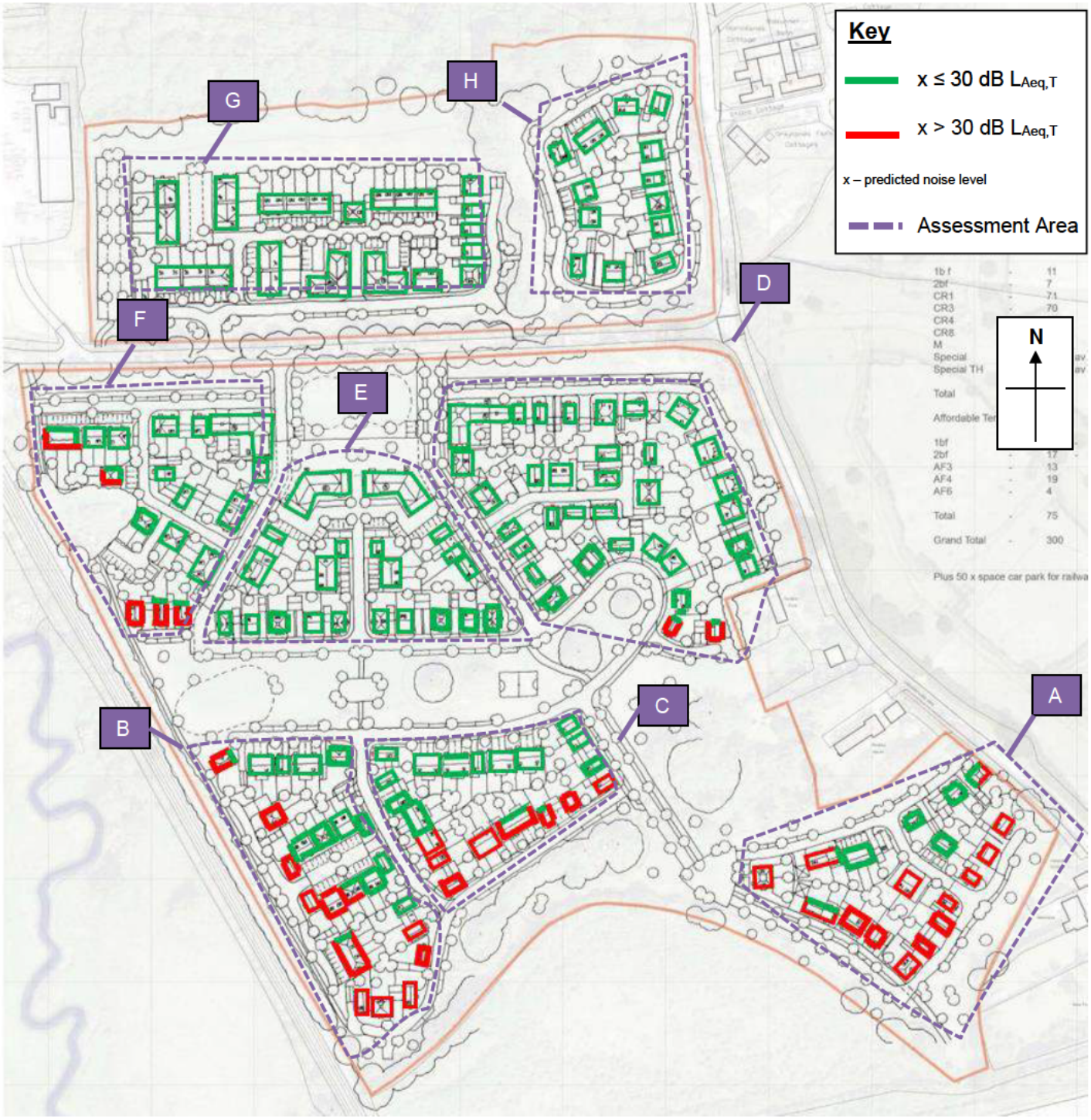

FIGURE A20: NIGHT-TIME – GROUND FLOOR – PROPERTY FACADES – INTERNAL NOISE LEVEL

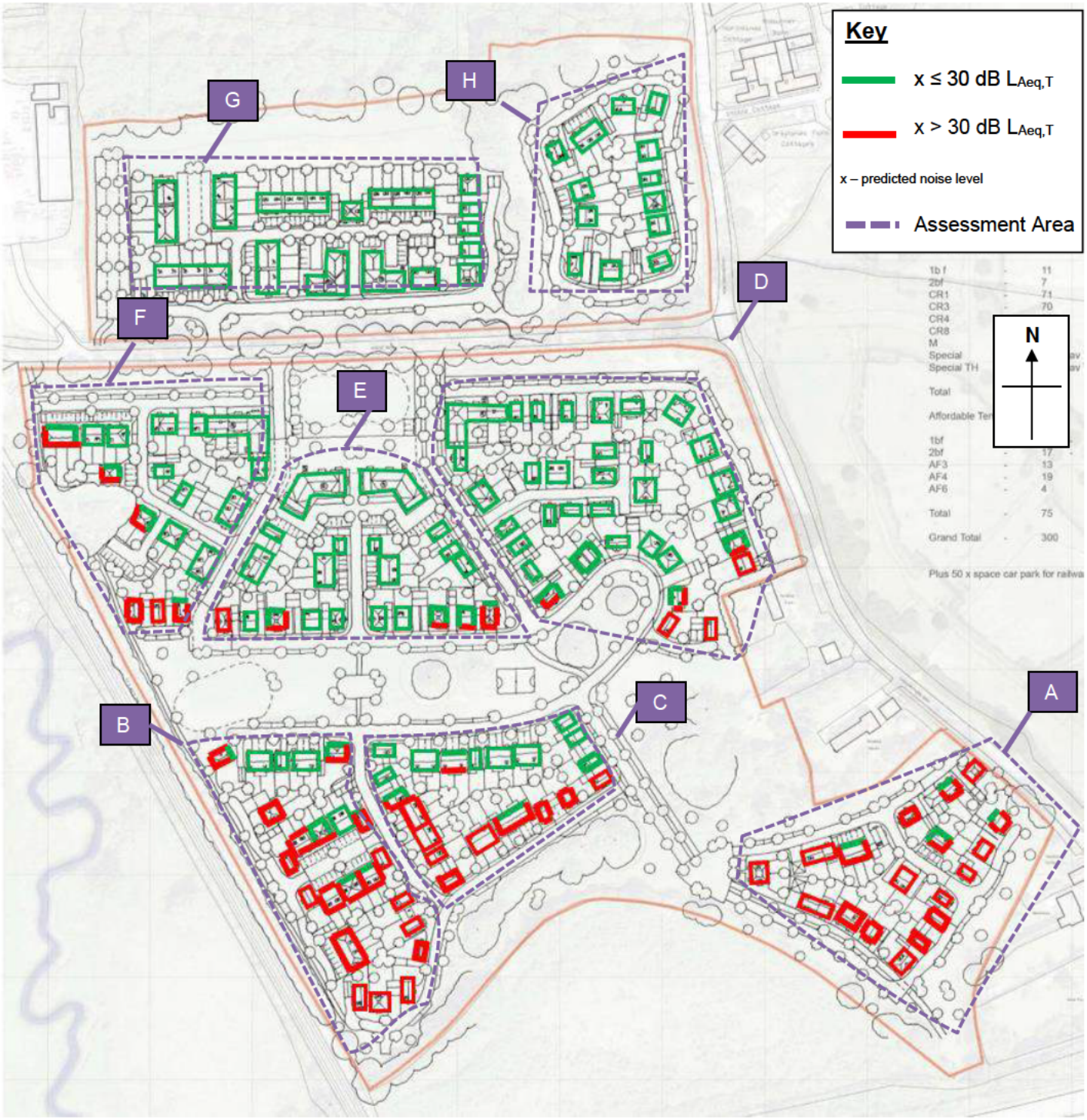

FIGURE A21: NIGHT-TIME – 1ST FLOOR – PROPERTY FACADES – INTERNAL NOISE LEVEL

APPENDIX B: TABLES

Date	Temperature (°C)			Humidity (%)	Wind Speed (ms^{-1})		Precipitation (mm)
	Avg.	Min.	Max.	Avg.	Avg.	Max.	Tot.
29-Jul-20	15.9	6.8	22.2	50	0.8	6.0	0.0
30-Jul-20	19.9	10.2	28.7	42	0.6	5.7	0.0
31-Jul-20	24.1	16.1	34.5	40	1.4	8.2	0.0
01-Aug-20	19.9	15.5	23.6	50	1.3	6.8	0.0
02-Aug-20	18.1	10.0	22.7	49	1.1	6.8	0.0
03-Aug-20	18.1	12.6	23.5	43	0.4	6.2	0.0
04-Aug-20	16.3	9.1	21.6	49	1.5	7.8	0.0
05-Aug-20	19.0	14.7	22.7	51	2.1	8.8	0.0
06-Aug-20	22.0	17.2	28.7	51	1.0	6.2	0.0
07-Aug-20	34.3	13.1	24.3	40	0.4	5.7	0.0
08-Aug-20	35.0	19.3	26.0	41	1.0	7.2	0.0
09-Aug-20	24.2	17.4	32.6	47	1.8	7.1	0.0
10-Aug-20	25.6	19.5	34.4	46	1.1	5.0	0.0
11-Aug-20	34.9	18.1	26.6	43	-	-	0.0

TABLE B1: WEATHER RECORD OBTAINED FOR SURVEY PERIOD

Notes:
[1] meteorological data obtained from www.wunderground.com; and
[2] weather station located in Horsham.

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
29/07/20	17:45	15	87.7	64.3	63.0	58.8
29/07/20	18:00	15	67.8	63.4	61.2	57.8
29/07/20	18:15	15	67.1	63.6	61.3	57.8
29/07/20	18:30	15	66.4	62.7	60.3	56.2
29/07/20	18:45	15	66.0	62.2	59.9	55.8
29/07/20	19:00	15	66.5	62.5	59.9	55.4
29/07/20	19:15	15	68.2	62.2	59.6	54.9
29/07/20	19:30	15	66.3	61.3	58.4	53.2
29/07/20	19:45	15	68.8	61.7	58.9	52.9
29/07/20	20:00	15	64.1	60.8	57.8	52.1
29/07/20	20:15	15	73.0	60.4	57.9	51.6
29/07/20	20:30	15	65.3	60.2	57.2	50.6
29/07/20	20:45	15	66.6	60.3	57.2	50.3
29/07/20	21:00	15	64.6	60.1	57.1	51.8
29/07/20	21:15	15	65.1	60.3	56.8	48.5
29/07/20	21:30	15	69.3	60.1	57.0	49.8
29/07/20	21:45	15	63.0	58.9	55.7	48.1
29/07/20	22:00	15	63.4	59.3	56.0	49.3
29/07/20	22:15	15	64.4	58.6	55.1	46.4
29/07/20	22:30	15	63.4	58.5	54.7	46.2
29/07/20	22:45	15	63.9	57.6	53.4	43.0
	Arith. Average		67.2	60.9	58.0	51.9
	Log. Average		75.2	61.3	58.7	53.7
	Minimum		63.0	57.6	53.4	43.0
	Maximum		87.7	64.3	63.0	58.8
29/07/20	23:00	15	65.1	57.7	53.7	44.7
29/07/20	23:15	15	64.8	56.9	52.5	41.0
29/07/20	23:30	15	68.1	55.6	51.5	39.5
29/07/20	23:45	15	64.6	56.0	51.3	35.4
30/07/20	00:00	15	61.9	55.1	50.3	36.2
30/07/20	00:15	15	64.5	53.4	49.0	33.7
30/07/20	00:30	15	62.1	54.4	49.6	33.6
30/07/20	00:45	15	63.1	53.0	48.6	35.7
30/07/20	01:00	15	60.3	52.1	47.3	32.2
30/07/20	01:15	15	60.6	53.7	48.8	33.1
30/07/20	01:30	15	59.2	49.1	45.1	30.7
30/07/20	01:45	15	61.6	49.9	46.0	29.5
30/07/20	02:00	15	63.1	51.9	47.6	30.3
30/07/20	02:15	15	61.7	48.1	45.0	30.7
30/07/20	02:30	15	61.5	50.0	46.5	29.8
30/07/20	02:45	15	62.1	52.6	48.1	33.5
30/07/20	03:00	15	62.3	51.2	47.3	35.5
30/07/20	03:15	15	61.6	51.7	47.1	35.3
30/07/20	03:30	15	63.3	53.3	48.9	36.7
30/07/20	03:45	15	62.0	53.8	48.9	36.5

TABLE B2: UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
30/07/20	04:00	15	64.3	53.4	49.5	36.2
30/07/20	04:15	15	61.8	54.4	49.6	33.3
30/07/20	04:30	15	63.8	55.0	50.8	35.8
30/07/20	04:45	15	64.0	55.4	51.0	36.5
30/07/20	05:00	15	68.5	57.0	52.9	42.1
30/07/20	05:15	15	63.4	58.2	54.3	46.9
30/07/20	05:30	15	65.2	60.1	56.7	50.5
30/07/20	05:45	15	65.3	61.0	57.9	52.7
30/07/20	06:00	15	67.5	61.1	58.4	53.6
30/07/20	06:15	15	65.2	61.7	59.0	54.3
30/07/20	06:30	15	70.9	62.2	60.1	56.2
30/07/20	06:45	15	67.8	63.1	60.8	57.0
	Arith. Average		63.8	55.1	51.1	39.0
	Log. Average		64.7	56.9	53.6	47.7
	Minimum		59.2	48.1	45.0	29.5
	Maximum		70.9	63.1	60.8	57.0
30/07/20	07:00	15	67.4	63.7	61.2	57.4
30/07/20	07:15	15	67.1	63.8	61.6	58.1
30/07/20	07:30	15	68.4	64.0	61.9	58.5
30/07/20	07:45	15	70.6	63.5	61.3	57.6
30/07/20	08:00	15	69.1	63.4	61.3	58.3
30/07/20	08:15	15	68.1	63.3	61.1	57.8
30/07/20	08:30	15	66.4	62.9	61.0	58.0
30/07/20	08:45	15	66.1	62.7	60.4	57.2
30/07/20	09:00	15	66.2	62.7	60.5	57.0
30/07/20	09:15	15	66.1	63.0	60.5	56.7
30/07/20	09:30	15	67.2	62.3	60.0	56.0
30/07/20	09:45	15	65.9	62.2	59.9	56.2
30/07/20	10:00	15	66.4	62.3	60.1	56.6
30/07/20	10:15	15	66.5	62.3	60.1	56.9
30/07/20	10:30	15	66.2	62.9	60.7	57.2
30/07/20	10:45	15	65.9	62.4	60.1	56.2
30/07/20	11:00	15	68.6	62.3	59.8	55.3
30/07/20	11:15	15	67.3	62.2	59.9	56.1
30/07/20	11:30	15	66.5	62.4	60.2	56.4
30/07/20	11:45	15	65.5	62.3	59.9	56.0
30/07/20	12:00	15	71.9	61.9	59.7	56.3
30/07/20	12:15	15	66.1	62.4	60.1	56.7
30/07/20	12:30	15	71.4	62.5	60.3	57.1
30/07/20	12:45	15	67.4	62.2	59.6	55.5
30/07/20	13:00	15	73.1	62.7	60.2	56.3
30/07/20	13:15	15	67.0	62.4	60.0	56.4
30/07/20	13:30	15	71.5	62.5	60.3	56.7
30/07/20	13:45	15	74.3	62.1	60.0	56.5
30/07/20	14:00	15	65.8	62.3	60.0	56.5

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
30/07/20	14:15	15	66.3	62.4	60.0	56.6
30/07/20	14:30	15	67.9	62.7	60.1	55.6
30/07/20	14:45	15	68.3	62.2	59.7	55.6
30/07/20	15:00	15	68.1	61.5	58.8	53.8
30/07/20	15:15	15	64.3	60.6	57.6	52.7
30/07/20	15:30	15	74.5	60.2	57.5	51.6
30/07/20	15:45	15	67.7	61.0	58.4	53.9
30/07/20	16:00	15	65.3	62.7	60.6	57.0
30/07/20	16:15	15	65.8	62.6	60.3	56.9
30/07/20	16:30	15	68.0	63.1	61.0	57.4
30/07/20	16:45	15	68.0	63.3	61.4	58.6
30/07/20	17:00	15	67.9	63.4	61.3	58.1
30/07/20	17:15	15	73.4	63.4	61.6	58.3
30/07/20	17:30	15	70.5	63.5	61.5	58.7
30/07/20	17:45	15	66.2	63.0	60.9	57.2
30/07/20	18:00	15	71.4	63.5	61.4	58.3
30/07/20	18:15	15	67.8	63.0	60.8	56.9
30/07/20	18:30	15	67.6	62.5	60.3	56.4
30/07/20	18:45	15	67.9	62.6	60.3	56.2
30/07/20	19:00	15	65.6	61.7	59.0	54.4
30/07/20	19:15	15	67.7	62.3	59.7	54.6
30/07/20	19:30	15	71.7	61.3	58.6	53.1
30/07/20	19:45	15	68.3	61.2	58.4	52.7
30/07/20	20:00	15	67.9	61.4	58.7	52.3
30/07/20	20:15	15	65.3	61.1	58.4	53.2
30/07/20	20:30	15	65.8	61.0	57.9	51.8
30/07/20	20:45	15	66.9	60.8	57.7	51.3
30/07/20	21:00	15	75.5	61.5	58.9	52.3
30/07/20	21:15	15	65.5	60.2	57.4	52.3
30/07/20	21:30	15	66.9	60.1	57.1	49.6
30/07/20	21:45	15	66.4	60.7	57.4	50.6
30/07/20	22:00	15	65.7	59.8	56.6	49.1
30/07/20	22:15	15	66.2	60.0	56.7	49.8
30/07/20	22:30	15	64.5	59.5	55.9	47.7
30/07/20	22:45	15	68.6	58.8	55.3	44.9
	Arith. Average		67.9	62.1	59.7	55.3
	Log. Average		68.8	62.3	59.9	56.0
	Minimum		64.3	58.8	55.3	44.9
	Maximum		75.5	64.0	61.9	58.7
30/07/20	23:00	15	64.9	58.8	55.2	45.8
30/07/20	23:15	15	65.6	58.0	53.7	39.2
30/07/20	23:30	15	62.4	56.5	52.1	39.0
30/07/20	23:45	15	61.7	55.8	51.3	37.3
31/07/20	00:00	15	62.9	56.2	51.6	34.7
31/07/20	00:15	15	60.2	54.5	49.9	36.1

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	00:30	15	60.9	53.1	48.1	32.0
31/07/20	00:45	15	61.4	52.4	47.7	29.9
31/07/20	01:00	15	61.2	51.4	46.8	29.6
31/07/20	01:15	15	61.0	53.1	48.2	30.8
31/07/20	01:30	15	63.3	54.5	49.5	29.9
31/07/20	01:45	15	60.8	52.6	47.8	30.5
31/07/20	02:00	15	59.8	53.8	48.7	30.0
31/07/20	02:15	15	63.2	51.9	47.2	27.9
31/07/20	02:30	15	64.5	54.5	49.9	29.6
31/07/20	02:45	15	59.9	51.5	46.9	28.8
31/07/20	03:00	15	60.0	52.6	47.8	29.6
31/07/20	03:15	15	60.6	52.9	48.6	29.6
31/07/20	03:30	15	63.0	55.2	50.5	31.5
31/07/20	03:45	15	65.0	56.2	51.7	33.6
31/07/20	04:00	15	60.9	55.2	50.8	34.0
31/07/20	04:15	15	71.2	54.4	51.1	37.3
31/07/20	04:30	15	62.1	56.0	51.9	41.3
31/07/20	04:45	15	63.2	56.3	52.1	38.9
31/07/20	05:00	15	62.8	57.7	53.9	43.5
31/07/20	05:15	15	64.5	58.9	55.7	48.9
31/07/20	05:30	15	66.7	61.3	58.2	51.5
31/07/20	05:45	15	67.3	62.2	59.5	54.5
31/07/20	06:00	15	66.4	62.7	59.8	54.4
31/07/20	06:15	15	66.3	62.0	59.5	54.3
31/07/20	06:30	15	71.7	62.5	59.8	54.5
31/07/20	06:45	15	66.9	62.8	60.7	57.1
	Arith. Average		63.5	56.2	52.1	38.3
	Log. Average		64.8	57.7	54.4	47.9
	Minimum		59.8	51.4	46.8	27.9
	Maximum		71.7	62.8	60.7	57.1
31/07/20	07:00	15	67.7	63.5	61.3	57.4
31/07/20	07:15	15	66.3	63.6	61.5	57.9
31/07/20	07:30	15	66.5	63.0	60.9	57.4
31/07/20	07:45	15	68.6	63.3	61.2	57.8
31/07/20	08:00	15	66.5	63.0	60.8	56.9
31/07/20	08:15	15	66.3	62.8	60.6	57.0
31/07/20	08:30	15	66.0	62.6	60.3	56.7
31/07/20	08:45	15	66.3	62.9	60.5	56.6
31/07/20	09:00	15	66.2	62.4	60.3	56.6
31/07/20	09:15	15	65.0	62.2	60.1	57.0
31/07/20	09:30	15	68.4	62.3	60.2	56.6
31/07/20	09:45	15	70.5	62.7	60.4	56.8
31/07/20	10:00	15	68.3	62.6	60.5	57.2
31/07/20	10:15	15	66.6	62.5	60.2	56.3
31/07/20	10:30	15	76.2	62.2	60.1	56.2

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	10:45	15	64.9	62.4	60.1	57.1
31/07/20	11:00	15	68.8	62.4	60.1	56.2
31/07/20	11:15	15	65.8	62.3	60.0	56.3
31/07/20	11:30	15	70.0	62.3	60.0	56.5
31/07/20	11:45	15	66.0	62.7	60.6	57.5
31/07/20	12:00	15	65.3	62.3	60.3	57.4
31/07/20	12:15	15	67.3	62.4	60.2	57.2
31/07/20	12:30	15	67.0	62.4	60.1	56.6
31/07/20	12:45	15	69.2	62.5	60.4	57.2
31/07/20	13:00	15	65.6	62.2	60.1	56.7
31/07/20	13:15	15	67.5	62.5	60.3	57.1
31/07/20	13:30	15	65.4	62.2	59.9	56.8
31/07/20	13:45	15	65.7	62.2	60.0	57.0
31/07/20	14:00	15	76.4	62.4	60.6	57.2
31/07/20	14:15	15	66.5	62.9	60.7	57.6
31/07/20	14:30	15	65.7	62.7	60.7	57.9
31/07/20	14:45	15	67.0	62.8	60.8	57.9
31/07/20	15:00	15	66.9	62.6	60.4	57.3
31/07/20	15:15	15	69.1	62.9	60.8	57.6
31/07/20	15:30	15	66.1	62.6	60.5	57.4
31/07/20	15:45	15	65.9	63.0	60.8	57.6
31/07/20	16:00	15	66.0	63.0	60.9	58.1
31/07/20	16:15	15	67.2	63.2	61.2	58.3
31/07/20	16:30	15	67.1	63.4	61.6	59.0
31/07/20	16:45	15	69.3	63.8	61.8	58.5
31/07/20	17:00	15	67.8	63.7	61.7	59.0
31/07/20	17:15	15	66.6	63.7	61.8	58.9
31/07/20	17:30	15	66.3	63.7	61.5	58.6
31/07/20	17:45	15	69.8	64.0	61.8	58.4
31/07/20	18:00	15	71.3	63.5	61.4	58.0
31/07/20	18:15	15	68.4	63.4	61.0	57.5
31/07/20	18:30	15	74.6	63.3	61.3	58.1
31/07/20	18:45	15	69.3	63.1	61.0	56.8
31/07/20	19:00	15	76.3	62.9	60.7	56.4
31/07/20	19:15	15	73.6	63.2	60.6	55.7
31/07/20	19:30	15	70.0	62.0	59.5	54.8
31/07/20	19:45	15	66.5	62.0	59.2	54.5
31/07/20	20:00	15	68.6	62.1	59.5	53.7
31/07/20	20:15	15	64.9	61.1	58.1	52.4
31/07/20	20:30	15	65.8	60.2	57.5	52.1
31/07/20	20:45	15	66.0	60.2	56.9	49.1
31/07/20	21:00	15	64.5	60.0	57.0	50.2
31/07/20	21:15	15	72.7	60.4	57.4	49.2
31/07/20	21:30	15	64.2	59.2	55.6	48.4
31/07/20	21:45	15	65.7	59.7	56.3	48.9
31/07/20	22:00	15	64.3	59.6	56.4	50.0

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	22:15	15	64.3	59.5	56.2	46.8
31/07/20	22:30	15	65.6	58.7	55.1	45.2
31/07/20	22:45	15	68.1	58.7	55.4	47.4
	Arith. Average		67.7	62.3	59.9	55.8
	Log. Average		69.0	62.4	60.2	56.6
	Minimum		64.2	58.7	55.1	45.2
	Maximum		76.4	64.0	61.8	59.0
31/07/20	23:00	15	65.1	57.9	54.0	42.7
31/07/20	23:15	15	64.0	57.0	53.1	41.4
31/07/20	23:30	15	66.3	58.3	54.5	44.0
31/07/20	23:45	15	62.9	57.0	52.8	42.0
01/08/20	00:00	15	72.1	55.5	53.5	38.4
01/08/20	00:15	15	59.7	54.9	50.1	33.1
01/08/20	00:30	15	63.1	56.1	51.5	36.2
01/08/20	00:45	15	58.3	52.5	47.6	32.3
01/08/20	01:00	15	62.7	54.7	50.0	31.3
01/08/20	01:15	15	66.0	55.0	51.2	35.5
01/08/20	01:30	15	62.8	51.0	46.6	31.0
01/08/20	01:45	15	60.4	51.7	47.1	29.3
01/08/20	02:00	15	61.6	52.1	47.3	29.5
01/08/20	02:15	15	60.5	52.6	47.7	30.1
01/08/20	02:30	15	60.2	50.0	45.3	30.2
01/08/20	02:45	15	60.4	51.6	47.1	30.0
01/08/20	03:00	15	62.8	52.6	47.9	33.3
01/08/20	03:15	15	62.6	51.8	47.3	31.3
01/08/20	03:30	15	63.1	53.5	48.9	32.6
01/08/20	03:45	15	60.7	52.9	48.7	34.2
01/08/20	04:00	15	61.7	54.7	50.1	34.0
01/08/20	04:15	15	60.6	54.1	49.2	34.5
01/08/20	04:30	15	60.6	54.3	50.0	38.8
01/08/20	04:45	15	60.4	55.0	50.0	33.9
01/08/20	05:00	15	61.9	55.2	50.6	36.0
01/08/20	05:15	15	63.9	56.8	52.4	41.6
01/08/20	05:30	15	65.0	58.1	54.5	46.2
01/08/20	05:45	15	62.8	57.8	53.8	44.6
01/08/20	06:00	15	63.5	58.5	54.7	44.3
01/08/20	06:15	15	63.3	58.0	53.9	43.9
01/08/20	06:30	15	65.8	59.5	56.2	48.2
01/08/20	06:45	15	64.4	58.8	55.7	48.8
	Arith. Average		62.8	55.0	50.7	37.0
	Log. Average		63.8	55.7	51.7	41.0
	Minimum		58.3	50.0	45.3	29.3
	Maximum		72.1	59.5	56.2	48.8
01/08/20	07:00	15	65.2	60.3	57.0	50.7

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
01/08/20	07:15	15	67.0	60.5	57.6	51.1
01/08/20	07:30	15	64.9	60.4	57.5	51.1
01/08/20	07:45	15	65.4	60.8	58.3	53.9
01/08/20	08:00	15	67.7	60.8	58.3	53.6
01/08/20	08:15	15	64.9	61.2	58.6	53.8
01/08/20	08:30	15	68.9	61.8	59.3	54.5
01/08/20	08:45	15	65.4	61.7	59.3	55.8
01/08/20	09:00	15	65.6	61.9	59.5	55.3
01/08/20	09:15	15	65.8	62.9	60.5	56.6
01/08/20	09:30	15	66.7	63.1	60.6	57.5
01/08/20	09:45	15	67.8	62.3	60.1	56.9
01/08/20	10:00	15	69.3	62.9	60.8	57.8
01/08/20	10:15	15	66.9	63.1	60.9	57.3
01/08/20	10:30	15	68.3	63.1	60.8	57.7
01/08/20	10:45	15	70.7	63.2	61.2	58.3
01/08/20	11:00	15	69.4	62.9	60.8	57.8
01/08/20	11:15	15	66.1	63.2	61.2	58.3
01/08/20	11:30	15	67.4	63.4	61.5	58.9
01/08/20	11:45	15	67.6	63.0	61.0	58.0
01/08/20	12:00	15	66.9	62.8	60.9	58.2
01/08/20	12:15	15	71.9	63.1	61.0	57.5
01/08/20	12:30	15	65.7	63.1	60.9	57.4
01/08/20	12:45	15	72.6	63.5	61.4	58.0
01/08/20	13:00	15	66.0	63.1	60.9	57.1
01/08/20	13:15	15	66.7	62.7	60.6	57.3
01/08/20	13:30	15	68.6	63.2	60.8	57.4
01/08/20	13:45	15	66.3	62.8	60.9	58.1
01/08/20	14:00	15	68.3	62.9	60.7	57.5
01/08/20	14:15	15	73.9	62.4	60.5	57.0
01/08/20	14:30	15	67.9	62.9	60.6	57.1
01/08/20	14:45	15	66.7	62.7	60.2	56.5
01/08/20	15:00	15	69.6	63.3	61.1	56.9
01/08/20	15:15	15	69.6	62.4	60.3	56.7
01/08/20	15:30	15	66.0	62.7	60.1	55.5
01/08/20	15:45	15	73.4	62.6	60.4	56.1
01/08/20	16:00	15	65.7	62.7	60.3	56.6
01/08/20	16:15	15	66.6	63.1	60.7	57.5
01/08/20	16:30	15	67.6	63.1	60.9	57.7
01/08/20	16:45	15	76.1	64.1	61.8	58.3
01/08/20	17:00	15	66.8	62.5	60.2	56.2
01/08/20	17:15	15	66.3	63.0	60.7	57.1
01/08/20	17:30	15	66.4	63.2	60.9	57.1
01/08/20	17:45	15	69.3	62.5	59.9	55.1
01/08/20	18:00	15	70.3	62.8	60.2	55.5
01/08/20	18:15	15	67.2	62.7	60.2	56.0
01/08/20	18:30	15	65.8	62.2	59.7	55.6

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
01/08/20	18:45	15	67.9	61.9	59.3	54.5
01/08/20	19:00	15	66.7	61.9	59.3	54.7
01/08/20	19:15	15	66.7	61.7	59.1	54.3
01/08/20	19:30	15	66.4	61.7	59.0	54.2
01/08/20	19:45	15	67.2	61.4	58.3	51.7
01/08/20	20:00	15	67.7	61.3	58.4	52.4
01/08/20	20:15	15	66.3	61.3	58.4	53.0
01/08/20	20:30	15	68.4	60.7	57.4	51.1
01/08/20	20:45	15	64.4	60.0	56.9	50.4
01/08/20	21:00	15	66.1	59.4	56.4	49.9
01/08/20	21:15	15	69.1	59.3	56.2	48.3
01/08/20	21:30	15	66.3	58.7	56.0	50.9
01/08/20	21:45	15	63.9	59.3	56.0	49.0
01/08/20	22:00	15	64.9	58.0	54.6	47.7
01/08/20	22:15	15	63.4	58.9	55.8	49.3
01/08/20	22:30	15	64.9	58.6	55.3	47.4
01/08/20	22:45	15	64.5	57.9	54.4	45.8
	Arith. Average		67.4	61.9	59.4	54.9
	Log. Average		68.3	62.1	59.7	55.9
	Minimum		63.4	57.9	54.4	45.8
	Maximum		76.1	64.1	61.8	58.9
01/08/20	23:00	15	65.3	57.3	53.9	44.9
01/08/20	23:15	15	63.9	57.7	53.7	42.3
01/08/20	23:30	15	65.2	57.4	53.9	40.0
01/08/20	23:45	15	64.7	56.6	52.7	42.4
02/08/20	00:00	15	62.3	56.7	52.7	42.0
02/08/20	00:15	15	66.6	55.5	51.5	34.7
02/08/20	00:30	15	61.4	54.0	49.3	34.2
02/08/20	00:45	15	66.9	56.4	51.7	34.8
02/08/20	01:00	15	61.5	54.1	49.1	32.2
02/08/20	01:15	15	59.9	54.0	48.9	32.6
02/08/20	01:30	15	58.7	50.0	45.5	32.2
02/08/20	01:45	15	62.5	52.6	48.0	31.1
02/08/20	02:00	15	60.1	53.5	48.5	33.0
02/08/20	02:15	15	60.7	52.0	46.9	31.7
02/08/20	02:30	15	64.9	53.4	49.1	31.8
02/08/20	02:45	15	61.5	51.5	46.7	30.5
02/08/20	03:00	15	59.5	51.0	46.6	32.4
02/08/20	03:15	15	62.7	50.6	46.9	31.4
02/08/20	03:30	15	62.7	51.4	47.5	32.6
02/08/20	03:45	15	60.5	53.4	48.7	31.1
02/08/20	04:00	15	59.9	51.5	47.1	31.9
02/08/20	04:15	15	65.6	54.8	50.2	31.8
02/08/20	04:30	15	61.3	53.3	49.1	33.3
02/08/20	04:45	15	62.6	54.4	49.8	37.2

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
02/08/20	05:00	15	65.8	54.2	50.3	34.5
02/08/20	05:15	15	76.1	56.2	52.1	38.3
02/08/20	05:30	15	62.3	56.7	52.2	37.9
02/08/20	05:45	15	63.6	56.9	53.4	44.1
02/08/20	06:00	15	65.3	56.9	53.3	45.2
02/08/20	06:15	15	65.8	57.9	53.7	44.0
02/08/20	06:30	15	67.0	59.6	55.8	46.4
02/08/20	06:45	15	71.8	58.1	54.8	44.6
	Arith. Average		63.7	54.7	50.4	36.5
	Log. Average		65.9	55.4	51.3	39.7
	Minimum		58.7	50.0	45.5	30.5
	Maximum		76.1	59.6	55.8	46.4
02/08/20	07:00	15	63.3	57.4	53.4	44.2
02/08/20	07:15	15	65.3	58.9	55.2	45.9
02/08/20	07:30	15	66.7	58.6	55.1	47.0
02/08/20	07:45	15	64.4	59.0	55.5	47.0
02/08/20	08:00	15	64.0	59.2	56.3	50.7
02/08/20	08:15	15	65.2	59.5	56.6	50.4
02/08/20	08:30	15	70.4	60.4	57.7	51.8
02/08/20	08:45	15	65.2	60.6	57.8	52.4
02/08/20	09:00	15	68.1	60.7	57.9	52.9
02/08/20	09:15	15	66.1	60.7	57.9	52.6
02/08/20	09:30	15	70.0	61.3	58.8	54.8
02/08/20	09:45	15	72.7	62.9	60.5	56.0
02/08/20	10:00	15	70.0	62.2	59.9	55.5
02/08/20	10:15	15	69.2	62.4	60.3	57.0
02/08/20	10:30	15	66.3	62.6	60.4	56.8
02/08/20	10:45	15	70.2	62.5	60.4	56.9
02/08/20	11:00	15	67.5	63.0	60.7	57.0
02/08/20	11:15	15	82.0	63.3	61.5	57.6
02/08/20	11:30	15	83.3	62.8	61.7	57.3
02/08/20	11:45	15	68.2	63.0	61.1	58.5
02/08/20	12:00	15	68.1	62.5	60.5	57.0
02/08/20	12:15	15	74.0	63.1	61.3	58.2
02/08/20	12:30	15	70.7	62.1	60.0	56.7
02/08/20	12:45	15	68.5	62.8	60.6	57.0
02/08/20	13:00	15	74.1	63.2	60.8	56.7
02/08/20	13:15	15	68.8	62.7	60.3	56.5
02/08/20	13:30	15	69.1	62.9	60.6	56.8
02/08/20	13:45	15	81.1	62.3	61.0	57.2
02/08/20	14:00	15	68.9	62.9	60.7	57.4
02/08/20	14:15	15	79.8	62.8	61.2	57.1
02/08/20	14:30	15	72.2	62.3	60.1	56.5
02/08/20	14:45	15	66.7	61.9	59.6	55.9
02/08/20	15:00	15	65.5	62.3	59.8	55.3

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
02/08/20	15:15	15	71.3	63.0	60.8	56.8
02/08/20	15:30	15	66.4	62.4	60.0	55.9
02/08/20	15:45	15	70.7	62.9	60.6	56.6
02/08/20	16:00	15	80.8	63.6	62.1	57.7
02/08/20	16:15	15	75.0	62.9	60.8	56.3
02/08/20	16:30	15	67.9	63.4	61.2	57.2
02/08/20	16:45	15	68.1	63.0	60.5	55.8
02/08/20	17:00	15	70.7	63.0	60.9	57.0
02/08/20	17:15	15	69.1	63.5	61.0	56.7
02/08/20	17:30	15	66.7	63.4	61.0	57.3
02/08/20	17:45	15	71.9	64.0	61.7	58.0
02/08/20	18:00	15	67.2	63.0	60.8	56.7
02/08/20	18:15	15	73.7	63.8	61.5	57.0
02/08/20	18:30	15	68.1	62.1	60.0	56.2
02/08/20	18:45	15	70.7	62.0	59.5	54.8
02/08/20	19:00	15	67.9	62.7	60.1	56.0
02/08/20	19:15	15	68.3	62.0	59.3	54.9
02/08/20	19:30	15	67.2	61.6	58.7	53.5
02/08/20	19:45	15	66.6	61.3	58.2	52.4
02/08/20	20:00	15	65.2	60.7	58.1	53.4
02/08/20	20:15	15	67.8	60.7	57.9	52.2
02/08/20	20:30	15	64.1	59.8	56.8	50.1
02/08/20	20:45	15	65.4	59.5	56.5	50.1
02/08/20	21:00	15	65.0	59.6	56.1	48.7
02/08/20	21:15	15	63.6	58.5	55.1	48.0
02/08/20	21:30	15	70.9	58.5	55.5	47.3
02/08/20	21:45	15	66.4	57.6	53.8	43.6
02/08/20	22:00	15	64.5	58.1	54.2	44.6
02/08/20	22:15	15	63.6	57.4	53.2	41.7
02/08/20	22:30	15	66.1	56.8	53.2	40.8
02/08/20	22:45	15	64.7	55.1	50.7	33.9
	Arith. Average		69.1	61.4	58.8	53.5
	Log. Average		72.7	61.8	59.5	55.2
	Minimum		63.3	55.1	50.7	33.9
	Maximum		83.3	64.0	62.1	58.5
02/08/20	23:00	15	62.4	56.1	51.7	39.2
02/08/20	23:15	15	62.8	55.8	51.0	32.3
02/08/20	23:30	15	63.5	56.5	51.8	32.6
02/08/20	23:45	15	63.2	54.3	49.9	32.3
03/08/20	00:00	15	61.1	53.7	49.0	32.9
03/08/20	00:15	15	60.9	51.1	46.5	29.1
03/08/20	00:30	15	60.9	52.6	47.4	30.1
03/08/20	00:45	15	60.8	49.7	46.2	30.2
03/08/20	01:00	15	62.5	49.2	45.8	32.3
03/08/20	01:15	15	62.4	49.1	45.1	32.8

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
03/08/20	01:30	15	62.5	50.8	46.6	32.8
03/08/20	01:45	15	60.2	48.0	44.8	31.7
03/08/20	02:00	15	60.3	47.8	44.7	32.2
03/08/20	02:15	15	59.6	49.2	45.0	32.3
03/08/20	02:30	15	61.1	46.7	44.2	32.3
03/08/20	02:45	15	60.0	51.2	46.7	32.3
03/08/20	03:00	15	61.4	51.7	47.0	32.9
03/08/20	03:15	15	61.5	52.3	47.6	32.6
03/08/20	03:30	15	60.4	52.2	47.2	32.7
03/08/20	03:45	15	62.6	54.6	49.7	34.8
03/08/20	04:00	15	61.5	53.1	48.7	36.0
03/08/20	04:15	15	60.3	54.0	49.2	35.0
03/08/20	04:30	15	62.1	54.5	50.4	37.2
03/08/20	04:45	15	61.0	55.7	51.5	41.4
03/08/20	05:00	15	64.6	56.8	53.0	41.7
03/08/20	05:15	15	63.7	58.1	54.6	47.3
03/08/20	05:30	15	65.2	58.9	55.7	48.8
03/08/20	05:45	15	65.3	60.4	57.4	51.8
03/08/20	06:00	15	65.4	60.7	57.8	51.8
03/08/20	06:15	15	65.8	61.2	58.3	52.7
03/08/20	06:30	15	65.2	62.0	59.5	55.1
03/08/20	06:45	15	66.1	62.6	60.2	56.0
	Arith. Average		62.4	54.1	50.1	37.7
	Log. Average		62.8	56.3	53.0	46.5
	Minimum		59.6	46.7	44.2	29.1
	Maximum		66.1	62.6	60.2	56.0
03/08/20	07:00	15	76.6	63.0	60.8	56.5
03/08/20	07:15	15	66.3	63.3	61.2	58.0
03/08/20	07:30	15	66.0	63.1	60.9	57.5
03/08/20	07:45	15	65.7	63.2	60.9	57.2
03/08/20	08:00	15	68.9	63.1	60.8	57.4
03/08/20	08:15	15	69.6	62.8	60.6	57.1
03/08/20	08:30	15	65.7	62.8	60.5	56.8
03/08/20	08:45	15	65.2	62.1	59.8	56.2
03/08/20	09:00	15	65.8	62.0	59.7	55.7
03/08/20	09:15	15	69.6	61.6	59.3	55.7
03/08/20	09:30	15	66.8	61.9	59.5	54.8
03/08/20	09:45	15	69.3	62.4	59.7	55.3
03/08/20	10:00	15	71.4	61.8	59.5	55.3
03/08/20	10:15	15	64.6	61.9	59.4	56.1
03/08/20	10:30	15	65.5	61.6	59.3	55.4
03/08/20	10:45	15	65.4	62.2	60.2	56.7
03/08/20	11:00	15	67.6	61.7	59.3	55.6
03/08/20	11:15	15	66.4	62.5	59.9	55.9
03/08/20	11:30	15	65.6	61.8	59.6	56.1

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
03/08/20	11:45	15	65.7	62.0	59.5	55.3
03/08/20	12:00	15	65.6	62.3	60.0	56.7
03/08/20	12:15	15	65.7	62.3	60.0	56.4
03/08/20	12:30	15	65.3	61.8	59.5	56.2
03/08/20	12:45	15	69.3	62.3	60.1	56.2
03/08/20	13:00	15	67.0	62.2	59.8	55.8
03/08/20	13:15	15	68.8	61.7	59.4	55.7
03/08/20	13:30	15	69.9	61.7	59.5	55.7
03/08/20	13:45	15	65.1	61.5	59.4	56.4
03/08/20	14:00	15	65.6	62.4	60.0	56.3
03/08/20	14:15	15	66.0	62.4	60.1	56.8
03/08/20	14:30	15	67.2	61.9	59.5	55.6
03/08/20	14:45	15	65.7	61.9	59.6	55.7
03/08/20	15:00	15	64.9	62.0	59.5	55.3
03/08/20	15:15	15	66.5	62.2	59.8	56.0
03/08/20	15:30	15	67.6	62.1	59.9	56.0
03/08/20	15:45	15	77.6	62.9	60.8	56.6
03/08/20	16:00	15	65.8	62.4	60.3	57.1
03/08/20	16:15	15	66.0	62.8	60.8	57.5
03/08/20	16:30	15	79.0	63.0	61.6	57.1
03/08/20	16:45	15	66.2	62.9	60.7	57.4
03/08/20	17:00	15	66.9	63.3	61.1	58.1
03/08/20	17:15	15	66.6	63.5	61.4	58.0
03/08/20	17:30	15	66.0	62.8	60.8	57.8
03/08/20	17:45	15	66.0	62.9	60.5	56.5
03/08/20	18:00	15	65.9	62.4	60.0	56.1
03/08/20	18:15	15	65.4	62.4	60.0	55.9
03/08/20	18:30	15	67.5	62.0	59.8	56.0
03/08/20	18:45	15	72.2	62.2	59.8	55.2
03/08/20	19:00	15	67.9	61.2	58.6	53.5
03/08/20	19:15	15	65.7	61.2	58.6	54.2
03/08/20	19:30	15	66.4	60.6	57.7	50.7
03/08/20	19:45	15	64.3	59.9	56.6	48.0
03/08/20	20:00	15	66.6	60.2	56.9	49.1
03/08/20	20:15	15	66.5	60.4	57.4	51.4
03/08/20	20:30	15	66.8	59.6	56.5	49.7
03/08/20	20:45	15	65.1	59.8	56.4	48.7
03/08/20	21:00	15	66.8	59.5	56.0	48.1
03/08/20	21:15	15	62.9	58.9	55.6	48.9
03/08/20	21:30	15	65.2	58.5	54.9	47.4
03/08/20	21:45	15	64.0	59.0	55.6	47.3
03/08/20	22:00	15	64.4	59.3	55.5	47.4
03/08/20	22:15	15	64.6	58.2	54.6	46.4
03/08/20	22:30	15	62.0	57.4	52.9	39.3
03/08/20	22:45	15	71.6	57.2	53.5	40.9
	Arith. Average		67.0	61.6	59.1	54.3

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
	Log. Average		68.8	61.8	59.4	55.5
	Minimum		62.0	57.2	52.9	39.3
	Maximum		79.0	63.5	61.6	58.1
03/08/20	23:00	15	63.1	56.9	52.6	36.3
03/08/20	23:15	15	63.0	56.0	51.3	37.0
03/08/20	23:30	15	62.5	55.7	51.2	36.4
03/08/20	23:45	15	68.3	54.5	51.0	35.4
04/08/20	00:00	15	61.0	54.4	49.9	37.3
04/08/20	00:15	15	67.9	55.5	51.0	35.8
04/08/20	00:30	15	61.9	52.9	48.1	34.5
04/08/20	00:45	15	63.7	54.1	49.8	35.4
04/08/20	01:00	15	64.6	53.6	49.3	36.1
04/08/20	01:15	15	62.8	49.7	46.6	30.4
04/08/20	01:30	15	64.8	53.4	48.8	34.3
04/08/20	01:45	15	62.6	50.8	47.0	31.2
04/08/20	02:00	15	58.8	51.0	46.5	30.7
04/08/20	02:15	15	60.9	51.9	47.1	31.1
04/08/20	02:30	15	58.9	48.3	44.9	34.1
04/08/20	02:45	15	61.3	52.7	47.9	36.7
04/08/20	03:00	15	61.1	50.8	46.3	36.6
04/08/20	03:15	15	61.3	53.0	48.4	37.0
04/08/20	03:30	15	61.4	51.0	46.8	33.1
04/08/20	03:45	15	62.9	55.6	51.0	36.4
04/08/20	04:00	15	63.0	55.3	50.8	35.3
04/08/20	04:15	15	60.9	55.3	50.4	31.7
04/08/20	04:30	15	62.9	56.3	52.0	42.2
04/08/20	04:45	15	63.4	56.2	52.0	42.2
04/08/20	05:00	15	63.8	57.6	53.9	45.5
04/08/20	05:15	15	79.8	58.9	57.1	49.1
04/08/20	05:30	15	64.6	60.4	57.0	50.0
04/08/20	05:45	15	68.2	61.4	58.4	53.2
04/08/20	06:00	15	69.7	61.9	58.8	52.7
04/08/20	06:15	15	67.2	62.1	59.5	54.7
04/08/20	06:30	15	66.0	62.1	59.6	55.2
04/08/20	06:45	15	66.9	62.9	60.6	57.1
	Arith. Average		64.0	55.4	51.4	39.5
	Log. Average		67.5	57.2	53.9	47.6
	Minimum		58.8	48.3	44.9	30.4
	Maximum		79.8	62.9	60.6	57.1
04/08/20	07:00	15	68.4	63.5	61.3	58.0
04/08/20	07:15	15	67.6	63.5	61.2	58.0
04/08/20	07:30	15	67.9	63.6	61.1	57.7
04/08/20	07:45	15	67.4	63.7	61.5	58.2
04/08/20	08:00	15	66.6	63.4	61.2	57.1

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
04/08/20	08:15	15	70.6	63.4	61.3	57.8
04/08/20	08:30	15	67.0	63.3	61.1	57.6
04/08/20	08:45	15	75.5	63.2	61.0	57.2
04/08/20	09:00	15	68.4	62.6	60.4	57.1
04/08/20	09:15	15	66.6	62.8	60.5	56.9
04/08/20	09:30	15	66.4	62.3	60.2	56.9
04/08/20	09:45	15	66.4	62.6	60.4	56.6
04/08/20	10:00	15	68.1	62.2	60.1	56.6
04/08/20	10:15	15	66.7	62.6	60.5	57.6
04/08/20	10:30	15	65.9	62.5	60.2	56.8
04/08/20	10:45	15	67.1	63.2	60.7	57.0
04/08/20	11:00	15	71.5	62.6	60.3	56.7
04/08/20	11:15	15	66.3	62.4	60.3	57.4
04/08/20	11:30	15	69.6	62.7	60.5	57.2
04/08/20	11:45	15	66.9	62.6	60.5	57.6
04/08/20	12:00	15	66.0	62.6	60.6	57.4
04/08/20	12:15	15	66.3	62.7	60.4	55.9
04/08/20	12:30	15	65.6	62.6	60.3	57.2
04/08/20	12:45	15	66.1	62.2	59.9	56.7
04/08/20	13:00	15	66.1	63.1	60.9	57.8
04/08/20	13:15	15	65.6	62.5	60.2	56.8
04/08/20	13:30	15	67.6	63.0	60.9	57.8
04/08/20	13:45	15	72.0	62.3	60.1	56.5
04/08/20	14:00	15	66.7	62.9	60.9	58.1
04/08/20	14:15	15	65.5	62.9	60.7	57.7
04/08/20	14:30	15	66.0	62.8	60.6	57.4
04/08/20	14:45	15	66.7	62.9	60.6	57.2
04/08/20	15:00	15	67.8	63.4	61.2	58.4
04/08/20	15:15	15	76.0	63.4	61.4	58.2
04/08/20	15:30	15	66.5	63.2	61.2	58.1
04/08/20	15:45	15	74.1	63.5	61.6	58.4
04/08/20	16:00	15	73.3	64.1	62.1	59.1
04/08/20	16:15	15	67.8	64.0	61.9	58.5
04/08/20	16:30	15	69.4	63.8	62.1	59.9
04/08/20	16:45	15	67.7	64.4	62.6	60.2
04/08/20	17:00	15	67.1	64.2	62.5	59.9
04/08/20	17:15	15	71.1	64.5	62.6	59.8
04/08/20	17:30	15	67.5	64.1	62.2	59.4
04/08/20	17:45	15	70.5	64.2	62.5	60.1
04/08/20	18:00	15	69.9	64.2	62.1	59.3
04/08/20	18:15	15	66.5	63.4	61.5	58.8
04/08/20	18:30	15	66.3	63.2	60.9	56.9
04/08/20	18:45	15	67.3	62.7	60.3	56.4
04/08/20	19:00	15	67.2	63.2	60.7	56.4
04/08/20	19:15	15	66.7	62.6	60.1	55.9
04/08/20	19:30	15	65.7	62.3	59.6	54.8

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
04/08/20	19:45	15	67.5	61.9	59.5	55.5
04/08/20	20:00	15	65.1	61.1	57.9	50.6
04/08/20	20:15	15	66.2	61.0	58.3	53.4
04/08/20	20:30	15	66.2	60.2	57.3	50.8
04/08/20	20:45	14	64.5	59.2	56.2	48.7
	Arith. Average		67.8	62.9	60.7	57.1
	Log. Average		68.8	63.0	60.8	57.5
	Minimum		64.5	59.2	56.2	48.7
	Maximum		76.0	64.5	62.6	60.2

TABLE B2 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT1, WEDNESDAY 29TH JULY TO TUESDAY 4TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
29/07/20	19:15	15	81.5	54.5	53.5	48.2
29/07/20	19:30	15	73.8	53.6	51.6	47.0
29/07/20	19:45	15	75.0	54.4	56.7	47.3
29/07/20	20:00	15	74.0	52.7	54.8	46.6
29/07/20	20:15	15	59.8	52.6	50.3	45.9
29/07/20	20:30	15	58.6	52.2	49.8	45.1
29/07/20	20:45	15	74.9	51.8	56.0	45.4
29/07/20	21:00	15	72.8	53.0	54.3	46.4
29/07/20	21:15	15	58.6	51.1	48.9	45.4
29/07/20	21:30	15	69.5	51.7	50.2	45.1
29/07/20	21:45	15	75.0	51.3	55.8	44.1
29/07/20	22:00	15	72.1	50.7	53.5	44.7
29/07/20	22:15	15	53.5	49.4	47.1	42.9
29/07/20	22:30	15	54.9	49.2	46.9	42.5
29/07/20	22:45	15	74.8	48.8	55.3	40.5
	Arith. Average		68.6	51.8	52.3	45.1
	Log. Average		73.8	52.1	53.3	45.5
	Minimum		53.5	48.8	46.9	40.5
	Maximum		81.5	54.5	56.7	48.2
29/07/20	23:00	15	79.6	48.9	57.9	41.8
29/07/20	23:15	15	53.2	48.4	45.3	39.9
29/07/20	23:30	15	56.7	48.2	45.1	38.4
29/07/20	23:45	15	74.3	47.5	54.8	37.0
30/07/20	00:00	15	78.7	47.7	53.3	37.9
30/07/20	00:15	15	55.0	47.1	43.2	36.0
30/07/20	00:30	15	57.1	47.7	44.2	37.3
30/07/20	00:45	15	57.6	48.4	45.4	39.9
30/07/20	01:00	15	53.0	46.8	43.4	37.4
30/07/20	01:15	15	54.6	47.8	44.1	37.9
30/07/20	01:30	15	52.4	45.4	41.4	35.0
30/07/20	01:45	15	55.0	46.5	42.7	35.4
30/07/20	02:00	15	55.7	47.2	43.3	36.6
30/07/20	02:15	15	55.6	44.7	41.3	36.1
30/07/20	02:30	15	55.4	45.3	41.7	36.3
30/07/20	02:45	15	54.3	48.1	44.6	38.5
30/07/20	03:00	15	49.3	44.9	42.2	38.3
30/07/20	03:15	15	51.9	46.3	43.1	38.3
30/07/20	03:30	15	52.9	47.4	43.8	37.8
30/07/20	03:45	15	60.3	47.0	43.9	37.8
30/07/20	04:00	15	55.5	47.9	44.7	38.5
30/07/20	04:15	15	57.9	48.9	45.5	37.6
30/07/20	04:30	15	61.1	51.7	48.3	39.7
30/07/20	04:45	15	60.8	52.2	48.8	40.7
30/07/20	05:00	15	62.3	53.0	50.0	44.2
30/07/20	05:15	15	60.8	54.8	51.8	46.8

TABLE B3: UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
30/07/20	05:30	15	62.5	55.2	52.9	49.5
30/07/20	05:45	15	74.4	56.7	56.7	51.7
30/07/20	06:00	15	60.8	55.5	53.6	51.3
30/07/20	06:15	15	62.4	55.8	54.3	52.4
30/07/20	06:30	15	61.7	54.7	53.2	51.1
30/07/20	06:45	15	65.7	53.4	52.2	49.9
	Arith. Average		59.6	49.4	47.4	40.8
	Log. Average		68.8	51.0	50.4	45.0
	Minimum		49.3	44.7	41.3	35.0
	Maximum		79.6	56.7	57.9	52.4
30/07/20	07:00	15	74.2	54.2	55.6	50.2
30/07/20	07:15	15	65.4	54.8	52.7	49.7
30/07/20	07:30	15	65.0	54.3	52.8	50.3
30/07/20	07:45	15	75.1	55.2	56.9	49.6
30/07/20	08:00	15	60.5	54.8	52.9	50.1
30/07/20	08:15	15	75.5	54.5	56.1	50.0
30/07/20	08:30	15	73.3	54.9	56.5	51.2
30/07/20	08:45	15	59.7	54.8	53.0	50.3
30/07/20	09:00	15	63.1	54.7	52.8	50.4
30/07/20	09:15	15	75.1	55.3	56.8	51.0
30/07/20	09:30	15	74.9	54.1	56.7	48.6
30/07/20	09:45	15	76.0	54.6	54.1	49.0
30/07/20	10:00	15	59.2	54.1	51.9	49.0
30/07/20	10:15	15	72.5	53.5	54.7	48.3
30/07/20	10:30	15	75.7	52.3	55.1	48.4
30/07/20	10:45	15	57.0	52.6	50.8	48.0
30/07/20	11:00	15	56.7	52.4	50.5	47.7
30/07/20	11:15	15	71.8	52.7	52.9	48.3
30/07/20	11:30	15	73.6	52.3	53.9	46.6
30/07/20	11:45	15	57.3	53.4	51.2	48.2
30/07/20	12:00	15	62.2	51.3	49.2	46.0
30/07/20	12:15	15	70.2	52.9	52.4	46.8
30/07/20	12:30	15	75.3	52.2	55.5	46.6
30/07/20	12:45	15	60.8	54.2	51.9	48.5
30/07/20	13:00	15	71.0	54.3	52.8	48.3
30/07/20	13:15	15	73.8	53.5	54.7	47.1
30/07/20	13:30	15	74.8	54.3	56.7	47.7
30/07/20	13:45	15	60.1	54.0	51.2	47.1
30/07/20	14:00	15	59.7	54.5	52.2	48.7
30/07/20	14:15	15	73.3	54.7	55.6	49.4
30/07/20	14:30	15	73.9	54.4	56.1	49.1
30/07/20	14:45	15	60.7	54.5	52.3	48.7
30/07/20	15:00	15	57.3	51.9	49.6	46.1
30/07/20	15:15	15	73.8	51.5	54.3	44.7
30/07/20	15:30	15	76.5	48.8	53.7	42.2

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
30/07/20	15:45	15	67.8	51.0	48.7	44.3
30/07/20	16:00	15	63.9	53.3	51.0	46.8
30/07/20	16:15	15	68.9	53.1	52.5	48.8
30/07/20	16:30	15	77.4	54.9	55.8	50.5
30/07/20	16:45	15	58.5	54.1	52.0	49.3
30/07/20	17:00	15	61.4	57.1	54.8	51.4
30/07/20	17:15	15	72.4	55.5	55.0	50.9
30/07/20	17:30	15	74.6	56.5	57.5	51.6
30/07/20	17:45	15	58.9	55.1	53.2	50.5
30/07/20	18:00	15	67.7	56.8	55.0	52.3
30/07/20	18:15	15	74.9	56.9	56.9	50.7
30/07/20	18:30	15	75.4	55.7	57.1	50.8
30/07/20	18:45	15	60.1	55.7	53.6	50.5
30/07/20	19:00	15	75.0	55.2	56.2	49.4
30/07/20	19:15	15	65.5	55.9	53.5	49.7
30/07/20	19:30	15	61.0	54.1	51.8	48.7
30/07/20	19:45	15	74.8	53.5	56.2	47.8
30/07/20	20:00	15	75.0	54.5	55.8	47.7
30/07/20	20:15	15	60.7	53.8	51.8	49.0
30/07/20	20:30	15	58.2	53.2	51.2	47.8
30/07/20	20:45	15	75.3	52.6	55.9	47.0
30/07/20	21:00	15	74.1	54.6	55.9	48.1
30/07/20	21:15	15	55.9	51.5	49.4	46.3
30/07/20	21:30	15	62.6	52.2	49.7	45.5
30/07/20	21:45	15	75.3	54.9	56.8	47.5
30/07/20	22:00	15	72.3	53.8	54.4	45.3
30/07/20	22:15	15	61.4	52.6	50.0	46.2
30/07/20	22:30	15	61.7	51.0	48.4	44.5
30/07/20	22:45	15	75.0	51.8	55.8	43.4
	Arith. Average		68.0	53.9	53.6	48.3
	Log. Average		71.9	54.1	54.2	48.8
	Minimum		55.9	48.8	48.4	42.2
	Maximum		77.4	57.1	57.5	52.3
30/07/20	23:00	15	81.5	51.0	59.5	43.0
30/07/20	23:15	15	59.2	48.8	46.0	39.7
30/07/20	23:30	15	54.3	47.2	44.6	39.7
30/07/20	23:45	15	76.0	48.2	55.6	39.0
31/07/20	00:00	15	79.3	47.9	54.2	38.1
31/07/20	00:15	15	52.8	45.8	42.9	37.9
31/07/20	00:30	15	49.4	44.1	41.1	36.2
31/07/20	00:45	15	53.4	44.7	41.3	34.5
31/07/20	01:00	15	54.8	44.4	41.5	34.6
31/07/20	01:15	15	57.4	48.2	44.0	35.4
31/07/20	01:30	15	58.6	49.1	45.2	35.4
31/07/20	01:45	15	57.5	48.5	44.5	35.1

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	02:00	15	59.6	49.4	45.0	35.4
31/07/20	02:15	15	55.9	47.0	43.0	34.0
31/07/20	02:30	15	59.7	49.5	45.1	34.3
31/07/20	02:45	15	53.4	44.8	40.8	34.7
31/07/20	03:00	15	57.1	47.3	43.1	34.4
31/07/20	03:15	15	59.4	47.5	44.0	34.9
31/07/20	03:30	15	75.1	48.4	50.7	36.3
31/07/20	03:45	15	62.0	49.0	45.9	37.3
31/07/20	04:00	15	60.2	48.5	45.4	37.7
31/07/20	04:15	15	59.3	49.0	45.6	39.8
31/07/20	04:30	15	56.2	48.1	45.6	41.3
31/07/20	04:45	15	68.9	49.7	48.5	40.6
31/07/20	05:00	15	69.2	52.3	49.7	42.9
31/07/20	05:15	15	62.5	53.7	50.8	45.4
31/07/20	05:30	15	62.5	56.8	53.8	47.6
31/07/20	05:45	15	72.7	58.0	56.7	51.5
31/07/20	06:00	15	70.1	57.0	54.5	50.7
31/07/20	06:15	15	62.5	56.2	54.1	50.8
31/07/20	06:30	15	68.6	57.5	55.2	51.8
31/07/20	06:45	15	70.0	58.9	56.9	53.7
	Arith. Average		62.5	49.9	48.0	40.1
	Log. Average		70.7	52.2	51.5	45.0
	Minimum		49.4	44.1	40.8	34.0
	Maximum		81.5	58.9	59.5	53.7
31/07/20	07:00	15	70.7	58.5	57.4	54.0
31/07/20	07:15	15	62.9	57.2	55.5	53.3
31/07/20	07:30	15	62.9	55.8	54.4	52.6
31/07/20	07:45	15	75.1	55.2	57.4	52.1
31/07/20	08:00	15	61.0	55.0	53.3	51.1
31/07/20	08:15	15	75.0	55.9	56.7	51.3
31/07/20	08:30	15	75.3	54.9	57.1	51.3
31/07/20	08:45	15	63.6	55.4	53.8	51.6
31/07/20	09:00	15	63.5	55.7	53.9	51.6
31/07/20	09:15	15	71.7	55.2	55.6	51.4
31/07/20	09:30	15	75.0	55.8	57.3	51.1
31/07/20	09:45	15	66.7	55.8	53.9	51.2
31/07/20	10:00	15	60.7	55.8	54.0	51.8
31/07/20	10:15	15	73.1	55.6	55.9	50.8
31/07/20	10:30	15	75.3	55.8	56.1	51.3
31/07/20	10:45	15	62.0	56.0	54.4	52.0
31/07/20	11:00	15	59.6	55.4	53.7	51.4
31/07/20	11:15	15	72.2	55.9	55.2	51.1
31/07/20	11:30	15	73.6	56.8	56.3	52.0
31/07/20	11:45	15	61.7	57.0	55.1	52.2
31/07/20	12:00	15	62.4	57.8	55.9	53.2

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	12:15	15	75.2	58.7	57.7	53.6
31/07/20	12:30	15	75.1	58.4	58.6	53.4
31/07/20	12:45	15	62.7	57.9	56.1	53.5
31/07/20	13:00	15	76.1	58.9	59.1	53.6
31/07/20	13:15	15	75.6	58.5	58.2	53.7
31/07/20	13:30	15	75.0	57.6	58.0	52.4
31/07/20	13:45	15	63.1	57.1	55.3	52.9
31/07/20	14:00	15	65.8	58.6	56.7	53.9
31/07/20	14:15	15	73.1	58.6	58.1	54.0
31/07/20	14:30	15	74.6	58.9	58.9	54.4
31/07/20	14:45	15	64.4	58.6	56.7	54.1
31/07/20	15:00	15	64.5	57.6	55.8	53.4
31/07/20	15:15	15	71.6	58.1	57.4	53.7
31/07/20	15:30	15	73.3	57.5	56.8	53.4
31/07/20	15:45	15	70.3	56.9	54.8	51.6
31/07/20	16:00	15	65.6	55.9	54.0	51.8
31/07/20	16:15	15	70.0	57.6	56.2	52.8
31/07/20	16:30	15	73.5	57.5	56.8	53.0
31/07/20	16:45	15	68.7	57.6	55.5	52.4
31/07/20	17:00	15	62.0	56.9	54.9	52.0
31/07/20	17:15	15	72.4	57.2	56.4	53.3
31/07/20	17:30	15	73.5	56.3	57.0	51.7
31/07/20	17:45	15	68.8	55.4	53.5	50.6
31/07/20	18:00	15	62.6	54.9	52.8	49.8
31/07/20	18:15	15	71.2	55.1	55.4	50.6
31/07/20	18:30	15	75.1	57.0	57.6	51.1
31/07/20	18:45	15	60.6	55.9	53.9	51.1
31/07/20	19:00	15	74.0	54.6	55.5	49.4
31/07/20	19:15	15	64.0	55.5	53.2	49.8
31/07/20	19:30	15	63.5	53.5	51.2	47.8
31/07/20	19:45	15	75.1	54.0	56.6	48.0
31/07/20	20:00	15	73.4	54.6	55.3	49.1
31/07/20	20:15	15	59.0	52.1	49.7	46.2
31/07/20	20:30	15	59.8	51.4	49.0	45.1
31/07/20	20:45	15	75.7	49.2	56.0	42.9
31/07/20	21:00	15	72.6	48.7	53.1	42.5
31/07/20	21:15	15	59.9	49.0	46.8	41.7
31/07/20	21:30	15	54.2	48.0	45.5	41.5
31/07/20	21:45	15	74.9	49.1	55.4	41.8
31/07/20	22:00	15	72.5	49.4	53.0	42.5
31/07/20	22:15	15	57.3	48.4	45.9	41.4
31/07/20	22:30	15	54.2	48.4	45.5	39.6
31/07/20	22:45	15	74.4	48.5	55.0	40.8
	Arith. Average		68.3	55.3	54.9	50.3
	Log. Average		71.6	56.1	55.6	51.5
	Minimum		54.2	48.0	45.5	39.6

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
	Maximum		76.1	58.9	59.1	54.4
31/07/20	23:00	15	79.5	46.1	57.5	36.8
31/07/20	23:15	15	57.2	46.0	43.1	37.1
31/07/20	23:30	15	56.5	46.0	43.5	38.6
31/07/20	23:45	15	75.0	44.8	55.3	35.7
01/08/20	00:00	15	62.7	43.6	42.4	34.7
01/08/20	00:15	15	49.6	43.0	39.6	33.2
01/08/20	00:30	15	49.3	43.4	40.0	34.6
01/08/20	00:45	15	50.1	41.6	38.1	31.9
01/08/20	01:00	15	51.5	42.8	39.7	33.4
01/08/20	01:15	15	65.3	43.2	41.6	34.3
01/08/20	01:30	15	47.8	39.1	36.5	32.5
01/08/20	01:45	15	49.4	40.2	36.7	31.0
01/08/20	02:00	15	49.5	40.6	37.2	31.6
01/08/20	02:15	15	48.8	40.0	36.5	31.6
01/08/20	02:30	15	49.1	38.7	35.6	31.3
01/08/20	02:45	15	50.6	39.3	36.6	32.0
01/08/20	03:00	15	52.7	39.4	36.9	34.0
01/08/20	03:15	15	46.3	38.7	36.0	32.8
01/08/20	03:30	15	46.0	39.6	36.9	33.8
01/08/20	03:45	15	46.5	39.2	36.9	33.8
01/08/20	04:00	15	53.2	40.5	38.1	34.8
01/08/20	04:15	15	51.4	40.2	37.8	35.1
01/08/20	04:30	15	58.5	42.9	41.4	35.9
01/08/20	04:45	15	70.6	44.4	46.1	35.1
01/08/20	05:00	15	75.2	44.9	44.9	36.3
01/08/20	05:15	15	58.0	45.7	42.7	37.3
01/08/20	05:30	15	59.8	48.6	45.8	40.0
01/08/20	05:45	15	71.2	49.6	47.2	39.9
01/08/20	06:00	15	72.2	50.3	48.8	41.0
01/08/20	06:15	15	54.5	48.9	45.7	39.7
01/08/20	06:30	15	61.2	49.0	47.0	42.7
01/08/20	06:45	15	56.0	48.1	45.6	41.7
	Arith. Average		57.0	43.4	41.8	35.4
	Log. Average		68.1	44.9	46.6	36.8
	Minimum		46.0	38.7	35.6	31.0
	Maximum		79.5	50.3	57.5	42.7
01/08/20	07:00	15	72.7	48.3	51.5	41.6
01/08/20	07:15	15	65.2	48.5	47.2	41.7
01/08/20	07:30	15	65.8	51.7	48.6	41.0
01/08/20	07:45	15	75.9	49.5	54.0	42.6
01/08/20	08:00	15	66.2	48.7	46.9	43.1
01/08/20	08:15	15	55.0	48.0	45.7	42.8
01/08/20	08:30	15	58.9	48.8	46.8	43.3

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
01/08/20	08:45	15	60.1	47.1	45.4	42.9
01/08/20	09:00	15	56.7	48.7	46.6	43.7
01/08/20	09:15	15	55.5	50.2	47.5	44.1
01/08/20	09:30	15	57.3	49.8	48.0	45.3
01/08/20	09:45	15	54.8	48.5	46.8	44.5
01/08/20	10:00	15	62.0	50.3	48.3	45.6
01/08/20	10:15	15	66.7	52.4	50.0	46.2
01/08/20	10:30	15	58.2	48.0	46.2	43.6
01/08/20	10:45	15	55.8	50.5	48.5	45.7
01/08/20	11:00	15	58.7	48.5	46.5	44.1
01/08/20	11:15	15	57.8	49.8	48.0	45.2
01/08/20	11:30	15	74.9	50.4	53.5	46.2
01/08/20	11:45	15	64.4	51.2	49.1	45.7
01/08/20	12:00	15	58.1	51.9	49.5	46.3
01/08/20	12:15	15	73.6	52.6	53.4	47.0
01/08/20	12:30	15	74.0	53.0	53.6	46.8
01/08/20	12:45	15	59.0	50.9	48.8	45.7
01/08/20	13:00	15	65.1	50.6	49.0	45.8
01/08/20	13:15	15	73.9	51.6	52.6	45.0
01/08/20	13:30	15	76.0	55.3	55.4	48.1
01/08/20	13:45	15	59.1	53.4	50.5	46.8
01/08/20	14:00	15	66.6	53.1	50.1	46.6
01/08/20	14:15	15	73.1	51.1	52.4	45.7
01/08/20	14:30	15	74.9	49.8	53.3	45.0
01/08/20	14:45	15	58.7	51.9	49.1	45.7
01/08/20	15:00	15	58.7	53.6	51.4	48.6
01/08/20	15:15	15	70.8	54.1	53.5	48.5
01/08/20	15:30	15	74.6	54.6	55.0	49.1
01/08/20	15:45	15	59.9	54.2	52.1	49.0
01/08/20	16:00	15	63.0	55.7	53.5	50.3
01/08/20	16:15	15	76.4	55.2	55.7	49.9
01/08/20	16:30	15	75.2	53.2	54.6	48.7
01/08/20	16:45	15	70.4	54.1	52.2	48.0
01/08/20	17:00	15	58.7	52.8	49.9	44.7
01/08/20	17:15	15	69.9	49.1	50.6	44.7
01/08/20	17:30	15	74.9	50.5	53.7	45.4
01/08/20	17:45	15	62.0	51.0	48.4	44.4
01/08/20	18:00	15	60.8	53.9	51.5	48.3
01/08/20	18:15	15	73.7	53.7	54.0	47.8
01/08/20	18:30	15	73.9	51.7	53.6	46.8
01/08/20	18:45	15	57.3	52.0	49.9	46.6
01/08/20	19:00	15	73.4	51.2	52.8	45.9
01/08/20	19:15	15	56.8	50.7	48.4	45.4
01/08/20	19:30	15	56.7	50.6	48.4	45.3
01/08/20	19:45	15	74.7	50.7	53.3	44.0
01/08/20	20:00	15	70.8	49.7	51.0	43.8

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
01/08/20	20:15	15	54.3	49.6	47.6	44.3
01/08/20	20:30	15	59.3	48.9	46.6	42.7
01/08/20	20:45	15	72.5	49.4	52.0	43.4
01/08/20	21:00	15	72.9	48.8	51.4	43.0
01/08/20	21:15	15	56.6	47.6	45.4	41.8
01/08/20	21:30	15	58.0	47.0	44.8	41.4
01/08/20	21:45	15	76.9	45.7	53.2	39.9
01/08/20	22:00	15	72.7	44.6	50.7	38.9
01/08/20	22:15	15	49.9	44.0	42.2	39.2
01/08/20	22:30	15	54.3	45.3	43.1	39.8
01/08/20	22:45	15	77.0	44.0	53.1	38.5
	Arith. Average		65.2	50.5	50.1	44.9
	Log. Average		70.6	51.3	51.1	45.6
	Minimum		49.9	44.0	42.2	38.5
	Maximum		77.0	55.7	55.7	50.3
01/08/20	23:00	15	81.8	43.3	56.6	37.7
01/08/20	23:15	15	53.0	43.3	41.0	37.4
01/08/20	23:30	15	50.9	43.5	41.2	37.3
01/08/20	23:45	15	76.9	43.2	53.2	36.2
02/08/20	00:00	15	48.3	43.0	40.4	36.9
02/08/20	00:15	15	51.1	42.3	39.7	35.8
02/08/20	00:30	15	56.3	43.0	40.3	35.5
02/08/20	00:45	15	57.1	43.3	40.3	35.1
02/08/20	01:00	15	49.2	42.2	38.9	34.5
02/08/20	01:15	15	47.6	41.8	38.4	34.3
02/08/20	01:30	15	46.6	40.0	37.1	34.1
02/08/20	01:45	15	49.6	41.1	37.9	33.8
02/08/20	02:00	15	52.1	43.1	39.9	34.5
02/08/20	02:15	15	55.3	45.0	41.1	33.1
02/08/20	02:30	15	54.5	43.5	40.2	34.2
02/08/20	02:45	15	49.9	41.2	38.0	34.0
02/08/20	03:00	15	47.7	41.3	38.5	34.6
02/08/20	03:15	15	49.2	41.3	37.9	33.2
02/08/20	03:30	15	51.8	42.1	39.2	34.2
02/08/20	03:45	15	53.7	45.8	41.9	33.1
02/08/20	04:00	15	50.4	45.0	41.1	35.2
02/08/20	04:15	15	56.0	47.7	44.0	35.2
02/08/20	04:30	15	54.4	47.3	43.6	36.5
02/08/20	04:45	15	66.8	48.3	45.3	37.8
02/08/20	05:00	15	60.8	49.2	45.4	35.3
02/08/20	05:15	15	88.2	48.8	52.0	38.0
02/08/20	05:30	15	61.2	50.0	46.8	38.7
02/08/20	05:45	15	61.8	51.9	48.6	42.6
02/08/20	06:00	15	65.9	53.7	50.7	43.6
02/08/20	06:15	15	62.2	53.2	50.1	43.6

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
02/08/20	06:30	15	70.3	50.9	48.2	43.0
02/08/20	06:45	15	61.4	48.7	45.9	38.9
	Arith. Average		57.6	45.3	43.2	36.5
	Log. Average		74.4	47.1	46.9	37.8
	Minimum		46.6	40.0	37.1	33.1
	Maximum		88.2	53.7	56.6	43.6
02/08/20	07:00	15	57.7	48.1	44.9	38.9
02/08/20	07:15	15	58.8	46.5	44.3	40.8
02/08/20	07:30	15	60.2	46.1	43.3	38.5
02/08/20	07:45	15	55.6	44.3	42.2	38.4
02/08/20	08:00	15	57.8	47.6	45.1	41.1
02/08/20	08:15	15	63.8	45.6	43.9	39.6
02/08/20	08:30	15	58.2	46.5	43.9	39.9
02/08/20	08:45	15	58.6	48.4	45.9	41.5
02/08/20	09:00	15	59.8	45.6	43.8	40.8
02/08/20	09:15	15	64.6	47.5	45.5	41.0
02/08/20	09:30	15	61.8	47.0	45.4	43.0
02/08/20	09:45	15	68.1	48.8	48.3	43.1
02/08/20	10:00	15	57.6	46.8	45.0	42.3
02/08/20	10:15	15	58.4	47.8	46.4	43.7
02/08/20	10:30	15	57.1	47.7	45.9	43.3
02/08/20	10:45	15	59.2	48.6	46.6	43.6
02/08/20	11:00	15	62.7	49.6	47.4	44.3
02/08/20	11:15	15	62.3	47.9	46.3	43.3
02/08/20	11:30	15	64.0	50.5	48.4	44.6
02/08/20	11:45	15	59.2	50.0	47.8	45.0
02/08/20	12:00	15	59.1	47.8	45.8	43.1
02/08/20	12:15	15	61.7	49.4	47.7	44.9
02/08/20	12:30	15	57.3	46.7	45.1	42.5
02/08/20	12:45	15	57.3	50.6	47.6	42.8
02/08/20	13:00	15	55.0	48.0	45.9	42.8
02/08/20	13:15	15	61.2	52.1	49.2	44.9
02/08/20	13:30	15	59.4	52.1	49.7	46.3
02/08/20	13:45	15	63.2	47.6	46.2	42.3
02/08/20	14:00	15	57.4	50.8	47.8	43.5
02/08/20	14:15	15	60.9	46.8	46.0	43.4
02/08/20	14:30	15	57.3	47.9	45.8	42.7
02/08/20	14:45	15	57.1	47.0	45.2	42.3
02/08/20	15:00	15	58.6	47.6	45.6	43.1
02/08/20	15:15	15	61.7	53.2	50.7	46.1
02/08/20	15:30	15	59.9	53.7	51.4	48.2
02/08/20	15:45	15	62.2	52.0	49.9	46.8
02/08/20	16:00	15	67.1	51.8	50.4	46.8
02/08/20	16:15	15	68.3	53.4	51.2	47.1
02/08/20	16:30	15	61.0	54.2	52.0	48.4

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
02/08/20	16:45	15	62.9	54.0	51.5	47.4
02/08/20	17:00	15	69.5	53.1	51.3	48.0
02/08/20	17:15	15	56.4	52.1	50.2	47.8
02/08/20	17:30	15	60.4	53.1	51.0	48.0
02/08/20	17:45	15	64.2	54.2	51.7	47.1
02/08/20	18:00	15	54.6	49.6	47.9	45.9
02/08/20	18:15	15	63.5	51.0	49.1	45.8
02/08/20	18:30	15	61.8	49.9	48.0	45.5
02/08/20	18:45	15	57.1	50.4	47.8	44.1
02/08/20	19:00	15	54.6	50.9	49.1	46.4
02/08/20	19:15	15	56.0	49.5	47.4	44.4
02/08/20	19:30	15	58.1	50.4	48.1	44.5
02/08/20	19:45	15	60.9	49.6	47.5	43.5
02/08/20	20:00	15	54.4	47.5	45.5	42.6
02/08/20	20:15	15	53.2	48.9	46.7	43.6
02/08/20	20:30	15	55.4	48.6	46.3	42.8
02/08/20	20:45	15	56.5	48.2	45.9	42.0
02/08/20	21:00	15	55.5	47.0	44.9	41.3
02/08/20	21:15	15	56.1	46.0	43.8	40.0
02/08/20	21:30	15	57.9	46.6	44.3	39.4
02/08/20	21:45	15	52.4	45.2	42.4	37.3
02/08/20	22:00	15	53.1	44.6	42.0	36.8
02/08/20	22:15	15	49.0	44.6	41.7	36.4
02/08/20	22:30	15	50.6	44.6	41.6	35.8
02/08/20	22:45	15	50.6	44.1	40.8	34.8
	Arith. Average		59.0	48.9	46.7	43.1
	Log. Average		61.1	49.7	47.6	44.1
	Minimum		49.0	44.1	40.8	34.8
	Maximum		69.5	54.2	52.0	48.4
02/08/20	23:00	15	52.1	45.4	42.0	35.6
02/08/20	23:15	15	49.9	45.2	41.3	33.3
02/08/20	23:30	15	53.3	46.0	42.6	34.5
02/08/20	23:45	15	51.2	44.8	41.0	34.0
03/08/20	00:00	15	48.7	42.3	39.0	33.9
03/08/20	00:15	15	47.5	40.7	37.3	32.8
03/08/20	00:30	15	51.3	42.3	38.6	33.4
03/08/20	00:45	15	53.7	41.9	38.5	31.8
03/08/20	01:00	15	52.5	41.4	38.5	34.1
03/08/20	01:15	15	47.7	40.0	37.2	34.4
03/08/20	01:30	15	49.7	40.3	38.0	35.0
03/08/20	01:45	15	51.9	39.5	37.0	33.6
03/08/20	02:00	15	45.3	38.8	36.7	34.4
03/08/20	02:15	15	46.0	38.3	36.4	34.0
03/08/20	02:30	15	46.8	38.3	36.6	34.5
03/08/20	02:45	15	49.3	39.2	37.2	34.1

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
03/08/20	03:00	15	60.9	40.4	38.9	34.7
03/08/20	03:15	15	51.6	43.4	39.8	34.1
03/08/20	03:30	15	48.6	42.5	38.9	34.7
03/08/20	03:45	15	50.6	43.0	39.6	35.1
03/08/20	04:00	15	45.6	40.9	38.6	35.9
03/08/20	04:15	15	50.7	42.9	40.4	37.0
03/08/20	04:30	15	53.2	44.0	41.6	37.9
03/08/20	04:45	15	64.6	44.4	42.0	37.2
03/08/20	05:00	15	67.9	46.2	44.9	38.3
03/08/20	05:15	15	72.9	46.8	45.4	40.6
03/08/20	05:30	15	63.0	46.1	44.1	41.2
03/08/20	05:45	15	70.7	48.6	52.1	43.3
03/08/20	06:00	15	60.2	48.4	46.6	43.9
03/08/20	06:15	15	62.4	48.5	46.8	43.4
03/08/20	06:30	15	61.1	48.2	46.8	44.1
03/08/20	06:45	15	59.1	48.8	47.0	44.7
	Arith. Average		54.4	43.4	41.0	36.5
	Log. Average		62.0	44.5	43.1	38.5
	Minimum		45.3	38.3	36.4	31.8
	Maximum		72.9	48.8	52.1	44.7
03/08/20	07:00	15	57.4	48.4	46.9	44.7
03/08/20	07:15	15	71.6	49.6	53.0	46.3
03/08/20	07:30	15	63.0	49.0	48.4	45.1
03/08/20	07:45	15	75.8	51.1	56.3	45.4
03/08/20	08:00	15	65.4	48.1	46.6	44.0
03/08/20	08:15	15	73.0	49.0	53.8	44.3
03/08/20	08:30	15	74.8	48.5	55.2	44.6
03/08/20	08:45	15	53.7	47.3	45.9	44.4
03/08/20	09:00	15	55.6	45.8	44.5	42.4
03/08/20	09:15	15	75.7	47.9	54.2	42.9
03/08/20	09:30	15	74.9	46.7	54.9	43.3
03/08/20	09:45	15	54.0	47.1	45.6	43.8
03/08/20	10:00	15	57.1	46.7	44.9	42.5
03/08/20	10:15	15	73.6	46.0	53.2	42.2
03/08/20	10:30	15	75.7	46.3	53.3	42.1
03/08/20	10:45	15	53.4	45.8	44.4	42.7
03/08/20	11:00	15	56.1	45.9	44.3	42.0
03/08/20	11:15	15	72.4	46.7	50.5	41.5
03/08/20	11:30	15	54.2	45.9	44.0	41.5
03/08/20	11:45	15	75.1	47.1	53.1	41.8
03/08/20	12:00	15	59.3	46.2	44.6	42.2
03/08/20	12:15	15	78.0	47.3	53.1	42.2
03/08/20	12:30	15	75.2	46.9	55.7	42.6
03/08/20	12:45	15	55.1	46.3	44.5	42.2
03/08/20	13:00	15	56.3	45.6	44.1	41.7

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
03/08/20	13:15	15	72.5	47.2	52.9	42.9
03/08/20	13:30	15	75.8	47.6	55.7	42.7
03/08/20	13:45	15	51.3	44.9	43.7	42.3
03/08/20	14:00	15	57.9	46.1	44.7	42.2
03/08/20	14:15	15	72.7	46.7	52.9	42.9
03/08/20	14:30	15	75.6	47.0	55.6	42.6
03/08/20	14:45	15	50.4	45.6	44.0	42.0
03/08/20	15:00	15	56.0	45.9	44.4	42.4
03/08/20	15:15	15	71.4	45.6	51.9	41.5
03/08/20	15:30	15	59.3	46.7	44.8	42.0
03/08/20	15:45	15	74.7	48.9	52.9	42.3
03/08/20	16:00	15	51.8	45.8	44.2	42.2
03/08/20	16:15	15	72.7	47.5	51.1	42.6
03/08/20	16:30	15	80.2	49.4	57.5	43.1
03/08/20	16:45	15	52.5	46.1	44.4	42.2
03/08/20	17:00	15	54.3	46.1	44.3	42.1
03/08/20	17:15	15	71.9	47.5	51.0	42.8
03/08/20	17:30	15	74.1	46.4	54.7	42.8
03/08/20	17:45	15	54.9	46.2	44.6	42.6
03/08/20	18:00	15	63.9	46.0	44.7	42.1
03/08/20	18:15	15	71.5	46.8	52.3	42.4
03/08/20	18:30	15	75.5	47.5	55.3	41.5
03/08/20	18:45	15	59.0	46.4	45.1	42.1
03/08/20	19:00	15	73.7	47.0	53.5	41.9
03/08/20	19:15	15	49.9	44.9	43.3	41.4
03/08/20	19:30	15	54.8	45.6	43.6	40.6
03/08/20	19:45	15	74.9	44.3	55.4	40.0
03/08/20	20:00	15	73.3	46.0	53.1	40.6
03/08/20	20:15	15	55.5	46.7	44.8	41.8
03/08/20	20:30	15	53.4	45.8	43.9	40.7
03/08/20	20:45	15	75.0	46.2	55.5	40.6
03/08/20	21:00	15	72.3	47.4	53.0	40.8
03/08/20	21:15	15	48.1	44.4	43.0	41.3
03/08/20	21:30	15	57.1	44.7	43.0	40.1
03/08/20	21:45	15	75.0	46.1	55.1	40.5
03/08/20	22:00	15	75.6	45.6	54.7	40.8
03/08/20	22:15	15	58.9	44.5	42.8	39.5
03/08/20	22:30	15	48.4	43.3	41.0	37.7
03/08/20	22:45	15	75.4	45.4	55.6	38.4
	Arith. Average		65.0	46.6	49.2	42.2
	Log. Average		71.9	46.8	51.7	42.4
	Minimum		48.1	43.3	41.0	37.7
	Maximum		80.2	51.1	57.5	46.3
03/08/20	23:00	15	79.9	46.1	58.0	37.6
03/08/20	23:15	15	52.5	45.6	42.7	38.0

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
03/08/20	23:30	15	51.8	46.2	43.2	39.1
03/08/20	23:45	15	75.9	49.1	55.3	38.3
04/08/20	00:00	15	55.4	47.4	44.5	39.2
04/08/20	00:15	15	57.9	48.8	45.3	38.5
04/08/20	00:30	15	52.2	46.2	43.1	38.0
04/08/20	00:45	15	56.8	49.4	45.5	37.4
04/08/20	01:00	15	55.9	47.1	43.9	37.4
04/08/20	01:15	15	55.8	46.3	42.7	35.9
04/08/20	01:30	15	55.6	48.1	44.5	37.4
04/08/20	01:45	15	55.2	46.3	42.6	36.6
04/08/20	02:00	15	56.5	46.4	43.0	36.1
04/08/20	02:15	15	56.4	46.2	42.3	37.0
04/08/20	02:30	15	50.4	43.8	41.0	37.5
04/08/20	02:45	15	54.2	46.8	43.5	38.1
04/08/20	03:00	15	55.6	46.1	42.6	37.3
04/08/20	03:15	15	56.0	46.8	43.2	36.7
04/08/20	03:30	15	56.4	47.6	43.2	36.5
04/08/20	03:45	15	56.7	50.4	46.9	39.5
04/08/20	04:00	15	58.0	50.1	46.7	39.4
04/08/20	04:15	15	55.8	49.2	45.8	37.7
04/08/20	04:30	15	60.2	51.0	48.1	42.6
04/08/20	04:45	15	54.7	50.4	47.2	41.8
04/08/20	05:00	15	58.8	53.2	50.7	46.6
04/08/20	05:15	15	61.2	54.5	51.8	47.4
04/08/20	05:30	15	58.3	55.2	52.8	49.2
04/08/20	05:45	15	73.1	56.1	56.3	50.5
04/08/20	06:00	15	60.0	56.4	54.4	51.5
04/08/20	06:15	15	60.7	56.9	55.0	52.7
04/08/20	06:30	15	61.3	56.2	54.9	53.0
04/08/20	06:45	15	59.4	55.5	53.5	51.3
	Arith. Average		58.4	49.5	47.3	41.1
	Log. Average		67.3	51.4	50.5	45.5
	Minimum		50.4	43.8	41.0	35.9
	Maximum		79.9	56.9	58.0	53.0
04/08/20	07:00	15	72.2	55.0	55.5	51.0
04/08/20	07:15	15	67.0	52.9	51.6	49.6
04/08/20	07:30	15	55.1	51.8	50.5	48.8
04/08/20	07:45	15	75.4	52.6	56.3	49.1
04/08/20	08:00	15	60.8	52.8	51.3	49.3
04/08/20	08:15	15	72.1	52.3	54.6	49.3
04/08/20	08:30	15	75.5	52.7	56.6	48.9
04/08/20	08:45	15	60.3	52.9	51.3	48.6
04/08/20	09:00	15	60.9	53.6	51.6	48.5
04/08/20	09:15	15	75.1	54.4	56.0	49.1
04/08/20	09:30	15	74.0	51.7	55.1	46.0

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
04/08/20	09:45	15	58.4	52.5	50.4	47.1
04/08/20	10:00	15	56.9	52.6	50.3	47.0
04/08/20	10:15	15	77.7	52.1	55.7	44.9
04/08/20	10:30	15	73.1	52.6	53.4	46.1
04/08/20	10:45	15	57.4	51.7	49.1	45.5
04/08/20	11:00	15	57.8	53.4	51.0	46.9
04/08/20	11:15	15	72.9	53.2	53.0	46.1
04/08/20	11:30	15	74.8	53.3	54.2	46.8
04/08/20	11:45	15	59.7	54.3	51.9	47.4
04/08/20	12:00	15	58.4	52.2	50.0	46.7
04/08/20	12:15	15	69.7	54.4	53.0	47.4
04/08/20	12:30	15	74.3	55.8	56.6	47.8
04/08/20	12:45	15	60.3	55.7	53.1	49.7
04/08/20	13:00	15	63.7	57.3	55.1	51.7
04/08/20	13:15	15	73.4	55.3	55.4	46.8
04/08/20	13:30	15	77.7	55.0	57.3	47.5
04/08/20	13:45	15	58.4	51.8	49.8	46.8
04/08/20	14:00	15	60.7	55.9	53.7	50.4
04/08/20	14:15	15	71.9	56.3	55.8	51.0
04/08/20	14:30	15	75.4	55.7	56.8	49.2
04/08/20	14:45	15	59.8	54.9	52.4	48.3
04/08/20	15:00	15	59.3	54.6	51.9	48.4
04/08/20	15:15	15	74.3	55.9	55.4	47.7
04/08/20	15:30	15	59.5	54.6	52.0	48.5
04/08/20	15:45	15	78.5	56.7	56.9	51.4
04/08/20	16:00	15	63.7	55.1	53.0	50.0
04/08/20	16:15	15	73.9	56.4	55.6	50.1
04/08/20	16:30	15	72.4	57.0	56.7	50.9
04/08/20	16:45	15	62.2	57.4	55.3	52.3
04/08/20	17:00	15	63.2	56.7	54.4	51.0
04/08/20	17:15	15	73.6	57.3	57.1	51.6
04/08/20	17:30	15	75.5	57.2	57.9	51.4
04/08/20	17:45	15	63.4	59.0	56.4	52.8
04/08/20	18:00	15	65.7	55.9	53.6	50.3
04/08/20	18:15	15	74.7	55.3	56.2	50.3
04/08/20	18:30	15	75.4	53.9	56.9	48.8
04/08/20	18:45	15	62.7	55.0	52.8	48.9
04/08/20	19:00	15	70.7	56.6	55.2	49.3
04/08/20	19:15	15	60.9	55.2	52.8	49.3
04/08/20	19:30	15	62.8	53.9	51.7	48.2
04/08/20	19:45	15	75.4	54.0	56.9	48.3
04/08/20	20:00	15	70.7	53.7	53.7	45.7
04/08/20	20:15	15	61.1	53.2	50.7	46.6
04/08/20	20:30	15	56.5	51.8	49.3	45.4
04/08/20	20:45	15	75.4	51.6	56.2	43.7
04/08/20	21:00	15	70.5	51.7	52.7	44.9

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
04/08/20	21:15	15	60.6	52.4	49.5	45.1
04/08/20	21:30	15	57.9	52.0	49.6	45.5
04/08/20	21:45	15	75.2	52.4	56.7	46.0
04/08/20	22:00	15	72.0	52.8	54.1	46.3
04/08/20	22:15	15	58.4	52.0	48.8	43.0
04/08/20	22:30	15	58.7	51.4	48.3	42.7
04/08/20	22:45	15	75.0	49.2	55.6	40.1
	Arith. Average		67.2	54.1	53.6	48.0
	Log. Average		71.7	54.5	54.3	48.7
	Minimum		55.1	49.2	48.3	40.1
	Maximum		78.5	59.0	57.9	52.8
04/08/20	23:00	15	81.0	49.1	58.8	39.1
04/08/20	23:15	15	59.8	49.6	46.0	36.9
04/08/20	23:30	15	58.5	50.1	46.9	40.4
04/08/20	23:45	15	74.9	49.9	55.4	35.7
05/08/20	00:00	15	58.9	47.4	43.4	33.9
05/08/20	00:15	15	58.5	48.9	45.2	36.4
05/08/20	00:30	15	57.3	47.3	43.7	34.9
05/08/20	00:45	15	57.7	44.4	41.0	32.8
05/08/20	01:00	15	54.1	43.6	39.9	32.7
05/08/20	01:15	15	52.7	44.4	40.5	33.9
05/08/20	01:30	15	57.9	46.2	42.2	32.9
05/08/20	01:45	15	55.8	45.3	41.2	31.6
05/08/20	02:00	15	53.1	43.3	39.4	30.9
05/08/20	02:15	15	58.1	45.7	41.5	31.3
05/08/20	02:30	15	52.0	44.7	40.2	30.8
05/08/20	02:45	15	56.5	47.3	43.3	33.4
05/08/20	03:00	15	57.9	44.9	41.1	29.9
05/08/20	03:15	15	59.2	45.1	41.5	31.7
05/08/20	03:30	15	55.7	47.8	43.7	32.7
05/08/20	03:45	15	54.8	46.4	42.4	33.6
05/08/20	04:00	15	58.4	47.0	43.5	35.5
05/08/20	04:15	15	54.9	47.1	43.4	33.6
05/08/20	04:30	15	53.6	46.9	43.8	37.7
05/08/20	04:45	15	58.5	48.1	44.8	38.7
05/08/20	05:00	15	60.7	52.7	49.7	43.0
05/08/20	05:15	15	60.0	51.7	49.3	45.9
05/08/20	05:30	15	71.0	52.2	50.1	45.5
05/08/20	05:45	15	72.7	52.4	54.0	47.2
05/08/20	06:00	15	57.9	52.4	50.6	48.0
05/08/20	06:15	15	62.6	54.0	51.8	48.1
05/08/20	06:30	15	60.5	54.8	53.2	50.8
05/08/20	06:45	15	59.1	54.8	52.9	50.1
	Arith. Average		59.5	48.3	45.8	37.5
	Log. Average		68.1	49.6	49.4	42.6

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
	Minimum		52.0	43.3	39.4	29.9
	Maximum		81.0	54.8	58.8	50.8
05/08/20	07:00	15	63.2	55.5	53.6	50.7
05/08/20	07:15	15	72.7	56.7	56.5	52.1
05/08/20	07:30	15	63.0	57.8	56.0	53.7
05/08/20	07:45	15	75.5	58.0	58.5	52.8
05/08/20	08:00	15	62.3	56.8	55.1	52.8
05/08/20	08:15	15	74.8	56.4	57.3	52.4
05/08/20	08:30	15	76.4	56.6	57.9	51.7
05/08/20	08:45	15	62.1	57.6	55.6	52.8
05/08/20	09:00	15	70.4	56.8	54.7	51.4
05/08/20	09:15	15	70.5	56.6	55.6	51.0
05/08/20	09:30	15	75.0	56.4	57.4	51.6
05/08/20	09:45	15	64.0	57.4	55.3	52.3
05/08/20	10:00	15	62.2	57.6	55.4	52.3
05/08/20	10:15	15	72.6	57.7	56.6	52.2
05/08/20	10:30	15	74.7	55.7	55.7	50.3
05/08/20	10:45	15	66.2	57.2	55.2	52.3
05/08/20	11:00	15	65.5	56.9	55.0	52.3
05/08/20	11:15	15	70.3	57.7	56.2	52.4
05/08/20	11:30	15	73.2	57.6	56.6	52.2
05/08/20	11:45	15	63.6	57.6	55.5	52.6
05/08/20	12:00	15	60.9	56.9	54.9	51.9
05/08/20	12:15	15	72.1	57.7	56.4	52.7
05/08/20	12:30	15	73.1	56.1	56.8	50.9
05/08/20	12:45	15	61.6	56.2	53.8	50.9
05/08/20	13:00	15	65.3	57.0	54.8	51.5
05/08/20	13:15	15	73.0	56.7	56.5	51.4
05/08/20	13:30	15	73.7	58.4	58.0	52.8
05/08/20	13:45	15	61.3	55.3	53.0	49.9
05/08/20	14:00	15	61.8	56.9	54.6	51.2
05/08/20	14:15	15	73.1	56.7	56.6	51.5
05/08/20	14:30	15	76.1	56.4	56.3	50.1
05/08/20	14:45	15	66.2	57.6	55.8	53.3
05/08/20	15:00	15	64.5	58.1	55.7	51.7
05/08/20	15:15	15	72.6	57.8	56.7	52.7
05/08/20	15:30	15	74.3	57.1	56.1	50.6
05/08/20	15:45	15	62.1	56.5	54.3	51.3
05/08/20	16:00	15	63.5	57.5	55.2	51.9
05/08/20	16:15	15	74.9	57.7	57.0	52.5
05/08/20	16:30	15	78.9	57.9	57.6	52.3
05/08/20	16:45	15	62.7	56.9	55.0	52.6
05/08/20	17:00	15	63.0	57.5	55.2	51.6
05/08/20	17:15	15	74.0	55.2	54.9	49.9
05/08/20	17:30	15	75.1	55.8	57.5	50.9

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
05/08/20	17:45	15	61.3	55.9	54.1	51.7
05/08/20	18:00	15	61.1	56.1	54.0	51.2
05/08/20	18:15	15	75.9	55.9	56.7	50.8
05/08/20	18:30	15	75.0	55.3	57.0	49.5
05/08/20	18:45	15	60.4	54.7	52.5	49.3
05/08/20	19:00	15	73.4	55.6	56.1	50.0
05/08/20	19:15	15	64.3	55.2	52.9	49.6
05/08/20	19:30	15	62.2	53.6	51.1	47.3
05/08/20	19:45	15	74.9	51.4	55.8	45.0
05/08/20	20:00	15	76.1	54.1	55.8	46.6
05/08/20	20:15	15	56.9	51.8	49.5	45.5
05/08/20	20:30	15	59.0	53.1	50.5	46.1
05/08/20	20:45	15	75.4	53.5	56.3	45.7
05/08/20	21:00	15	72.8	53.3	54.6	45.6
05/08/20	21:15	15	58.2	51.1	48.4	43.5
05/08/20	21:30	15	57.5	49.6	46.9	40.7
05/08/20	21:45	15	75.2	50.0	55.7	42.1
05/08/20	22:00	15	76.9	48.5	55.5	41.3
05/08/20	22:15	15	59.9	49.3	46.3	41.1
05/08/20	22:30	15	57.0	48.0	45.1	39.9
05/08/20	22:45	15	74.7	47.7	55.2	38.8
	Arith. Average		68.3	55.5	54.9	49.8
	Log. Average		71.9	56.1	55.5	50.9
	Minimum		56.9	47.7	45.1	38.8
	Maximum		78.9	58.4	58.5	53.7
05/08/20	23:00	15	82.1	47.4	59.5	36.7
05/08/20	23:15	15	51.9	46.5	43.1	36.5
05/08/20	23:30	15	53.5	45.3	42.0	35.7
05/08/20	23:45	15	74.7	45.8	55.0	34.4
06/08/20	00:00	15	55.6	45.2	41.8	33.1
06/08/20	00:15	15	52.7	43.3	39.7	31.7
06/08/20	00:30	15	51.4	43.5	39.3	31.3
06/08/20	00:45	15	53.3	43.9	39.9	31.0
06/08/20	01:00	15	49.5	41.9	37.6	30.7
06/08/20	01:15	15	47.1	40.3	36.6	30.9
06/08/20	01:30	15	51.9	43.7	39.7	31.2
06/08/20	01:45	15	53.2	43.4	39.3	32.0
06/08/20	02:00	15	52.7	44.2	39.8	31.4
06/08/20	02:15	15	50.1	41.2	37.5	30.6
06/08/20	02:30	15	52.0	43.3	39.3	31.3
06/08/20	02:45	15	59.3	43.4	39.5	30.3
06/08/20	03:00	15	49.3	43.4	39.2	30.3
06/08/20	03:15	15	50.5	40.9	37.3	31.2
06/08/20	03:30	15	47.6	41.9	37.7	31.2
06/08/20	03:45	15	53.5	43.7	39.5	30.9

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
06/08/20	04:00	15	55.4	44.3	40.7	32.9
06/08/20	04:15	15	53.3	45.2	41.6	32.5
06/08/20	04:30	15	54.7	47.4	44.0	36.3
06/08/20	04:45	15	52.6	45.9	42.7	36.4
06/08/20	05:00	15	63.8	47.3	44.4	38.3
06/08/20	05:15	15	70.3	49.4	47.4	41.8
06/08/20	05:30	15	57.6	49.6	46.8	41.8
06/08/20	05:45	15	72.2	52.4	53.6	45.4
06/08/20	06:00	15	59.6	51.9	49.5	45.6
06/08/20	06:15	15	58.6	53.2	50.9	46.7
06/08/20	06:30	15	60.4	54.1	52.2	49.7
06/08/20	06:45	15	60.1	54.8	53.0	50.6
	Arith. Average		56.6	45.9	43.4	35.6
	Log. Average		68.6	47.9	48.7	41.1
	Minimum		47.1	40.3	36.6	30.3
	Maximum		82.1	54.8	59.5	50.6
06/08/20	07:00	15	72.3	56.0	55.8	50.9
06/08/20	07:15	15	60.5	56.0	54.2	51.6
06/08/20	07:30	15	62.6	55.9	53.9	50.9
06/08/20	07:45	15	74.8	55.8	57.5	51.3
06/08/20	08:00	15	59.5	55.2	53.4	51.1
06/08/20	08:15	15	72.3	56.2	56.2	51.3
06/08/20	08:30	15	73.7	55.6	56.7	51.3
06/08/20	08:45	15	64.1	55.7	53.7	51.1
06/08/20	09:00	15	63.6	55.5	53.6	50.9
06/08/20	09:15	15	77.7	54.0	56.0	49.1
06/08/20	09:30	15	77.4	53.0	56.9	48.5
06/08/20	09:45	15	92.0	53.7	60.3	48.9
06/08/20	10:00	15	60.0	54.9	52.8	49.8
06/08/20	10:15	15	73.2	54.3	55.6	50.0
06/08/20	10:30	15	74.1	54.8	55.0	49.9
06/08/20	10:45	15	58.1	54.1	52.2	49.2
06/08/20	11:00	15	69.6	54.4	52.8	50.4
06/08/20	11:15	15	72.1	52.8	52.9	46.7
06/08/20	11:30	15	74.2	53.5	54.0	47.4
06/08/20	11:45	15	63.1	54.8	52.3	49.0
06/08/20	12:00	15	58.1	51.5	49.2	45.2
06/08/20	12:15	15	75.9	53.5	54.3	47.0
06/08/20	12:30	15	74.8	52.2	55.7	46.2
06/08/20	12:45	15	61.2	53.7	51.2	47.6
06/08/20	13:00	15	58.1	52.5	49.8	46.0
06/08/20	13:15	15	71.0	55.3	54.9	46.5
06/08/20	13:30	15	75.2	53.5	56.5	47.8
06/08/20	13:45	15	59.8	54.3	51.9	48.5
06/08/20	14:00	15	58.9	53.4	51.4	48.9

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
06/08/20	14:15	15	73.5	54.4	55.1	48.4
06/08/20	14:30	15	75.3	53.0	56.4	47.0
06/08/20	14:45	15	59.2	54.1	51.9	48.4
06/08/20	15:00	15	59.4	54.0	51.5	48.2
06/08/20	15:15	15	72.9	52.4	54.4	46.8
06/08/20	15:30	15	75.6	54.8	55.1	48.1
06/08/20	15:45	15	62.6	52.2	50.3	47.2
06/08/20	16:00	15	60.1	55.3	53.0	49.3
06/08/20	16:15	15	73.5	54.6	54.1	48.0
06/08/20	16:30	15	58.6	54.5	52.4	49.5
06/08/20	16:45	15	76.6	55.4	56.2	51.0
06/08/20	17:00	15	60.1	55.2	53.2	50.8
06/08/20	17:15	15	75.0	55.1	55.4	50.8
06/08/20	17:30	15	61.0	55.8	53.5	50.1
06/08/20	17:45	15	59.5	53.7	52.1	50.0
06/08/20	18:00	15	58.3	54.3	52.4	49.4
06/08/20	18:15	15	79.0	54.4	56.5	49.4
06/08/20	18:30	15	58.2	54.5	52.6	49.9
06/08/20	18:45	15	58.2	53.8	51.7	48.9
06/08/20	19:00	15	75.4	54.7	57.2	50.3
06/08/20	19:15	15	60.5	52.6	50.6	46.9
06/08/20	19:30	15	72.9	53.7	54.9	47.8
06/08/20	19:45	15	64.6	53.5	51.5	48.4
06/08/20	20:00	15	75.5	53.2	56.6	47.8
06/08/20	20:15	15	72.2	52.3	54.1	47.4
06/08/20	20:30	15	56.6	49.3	47.1	44.2
06/08/20	20:45	15	52.8	49.0	46.7	43.6
06/08/20	21:00	15	74.9	50.7	55.8	43.9
06/08/20	21:15	15	72.2	50.4	52.9	41.8
06/08/20	21:30	15	61.7	47.2	45.0	41.0
06/08/20	21:45	15	75.0	52.2	55.7	40.9
06/08/20	22:00	15	73.4	54.8	55.1	48.2
06/08/20	22:15	15	68.1	53.5	51.1	45.3
06/08/20	22:30	15	58.4	52.6	49.5	44.2
06/08/20	22:45	15	75.0	52.5	56.1	44.0
	Arith. Average		67.7	53.7	53.6	48.1
	Log. Average		76.0	54.0	54.3	48.7
	Minimum		52.8	47.2	45.0	40.9
	Maximum		92.0	56.2	60.3	51.6
06/08/20	23:00	15	80.2	52.8	58.3	42.2
06/08/20	23:15	15	59.8	52.0	49.2	42.3
06/08/20	23:30	15	64.2	52.5	49.2	41.4
06/08/20	23:45	15	59.5	51.7	48.1	40.7
07/08/20	00:00	15	76.8	50.5	55.9	41.5
07/08/20	00:15	15	55.8	49.3	46.2	40.3

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
07/08/20	00:30	15	55.3	49.2	45.7	39.3
07/08/20	00:45	15	53.7	47.0	44.2	39.5
07/08/20	01:00	15	54.3	48.5	44.4	36.9
07/08/20	01:15	15	54.7	47.5	43.8	36.5
07/08/20	01:30	15	53.0	47.6	44.2	38.6
07/08/20	01:45	15	55.8	46.0	42.8	38.0
07/08/20	02:00	15	55.8	45.0	41.9	38.0
07/08/20	02:15	15	59.0	47.6	44.1	38.2
07/08/20	02:30	15	53.6	45.0	41.6	35.5
07/08/20	02:45	15	59.7	47.3	43.7	36.9
07/08/20	03:00	15	56.5	48.1	44.1	37.2
07/08/20	03:15	15	57.4	47.9	44.5	37.5
07/08/20	03:30	15	55.4	48.4	45.2	38.5
07/08/20	03:45	15	56.7	48.3	45.4	40.1
07/08/20	04:00	15	53.6	48.5	45.3	41.0
07/08/20	04:15	15	54.8	49.0	45.8	39.5
07/08/20	04:30	15	58.4	50.8	47.7	42.6
07/08/20	04:45	15	63.9	49.6	47.1	42.7
07/08/20	05:00	15	65.0	51.6	48.8	44.0
07/08/20	05:15	15	58.3	51.8	49.5	46.1
07/08/20	05:30	15	60.7	53.4	51.4	48.3
07/08/20	05:45	15	72.5	54.8	55.3	50.2
07/08/20	06:00	15	60.5	55.8	53.6	50.8
07/08/20	06:15	15	59.7	56.0	54.2	51.7
07/08/20	06:30	15	64.7	57.7	56.0	53.8
07/08/20	06:45	15	60.1	55.4	53.8	51.9
	Arith. Average		59.7	50.2	47.8	41.9
	Log. Average		67.9	51.5	50.6	45.5
	Minimum		53.0	45.0	41.6	35.5
	Maximum		80.2	57.7	58.3	53.8
07/08/20	07:00	15	71.7	54.7	55.4	51.8
07/08/20	07:15	15	61.1	56.7	55.4	53.7
07/08/20	07:30	15	59.8	55.6	54.4	53.1
07/08/20	07:45	15	75.0	54.4	57.0	50.9
07/08/20	08:00	15	59.1	52.0	50.5	48.3
07/08/20	08:15	15	70.3	53.5	54.1	49.3
07/08/20	08:30	15	75.2	54.0	56.8	50.3
07/08/20	08:45	15	75.3	51.4	50.8	47.7
07/08/20	09:00	15	56.8	51.4	49.6	47.3
07/08/20	09:15	15	70.7	50.7	52.5	47.0
07/08/20	09:30	15	74.9	50.0	55.4	45.5
07/08/20	09:45	15	53.1	50.2	48.6	46.5
07/08/20	10:00	15	60.5	49.2	47.5	44.7
07/08/20	10:15	15	77.9	49.3	54.3	45.5
07/08/20	10:30	15	74.9	49.6	53.3	45.3

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
07/08/20	10:45	15	54.4	49.4	47.6	45.0
07/08/20	11:00	15	61.8	48.8	46.7	44.1
07/08/20	11:15	15	72.6	49.8	51.7	43.6
07/08/20	11:30	15	72.9	48.9	52.0	43.0
07/08/20	11:45	15	57.4	53.1	51.1	47.9
07/08/20	12:00	15	60.5	54.6	52.0	47.9
07/08/20	12:15	15	75.3	52.5	53.8	46.8
07/08/20	12:30	15	75.2	51.6	56.0	45.6
07/08/20	12:45	15	71.1	54.1	51.7	47.4
07/08/20	13:00	15	58.7	52.4	49.9	44.7
07/08/20	13:15	15	72.5	54.5	54.8	47.7
07/08/20	13:30	15	74.6	54.6	56.1	46.5
07/08/20	13:45	15	62.1	55.2	53.0	49.5
07/08/20	14:00	15	60.3	56.1	54.4	52.0
07/08/20	14:15	15	69.5	54.8	54.5	49.7
07/08/20	14:30	15	75.2	54.2	56.6	49.1
07/08/20	14:45	15	60.9	56.2	54.0	51.0
07/08/20	15:00	15	62.7	55.9	53.7	50.5
07/08/20	15:15	15	72.0	55.3	55.7	51.0
07/08/20	15:30	15	75.7	56.0	55.9	49.8
07/08/20	15:45	15	62.4	56.4	54.4	51.5
07/08/20	16:00	15	64.5	56.2	54.5	52.4
07/08/20	16:15	15	72.1	57.1	56.2	52.8
07/08/20	16:30	15	74.8	56.2	56.5	52.9
07/08/20	16:45	15	63.9	56.7	55.1	52.9
07/08/20	17:00	15	58.8	56.3	54.8	52.9
07/08/20	17:15	15	73.1	56.2	55.9	52.5
07/08/20	17:30	15	75.8	55.7	57.8	52.3
07/08/20	17:45	15	60.0	56.0	54.4	52.3
07/08/20	18:00	15	58.2	55.7	54.1	51.8
07/08/20	18:15	15	71.6	54.6	55.3	51.1
07/08/20	18:30	15	75.3	54.7	57.0	50.9
07/08/20	18:45	15	63.6	54.8	52.9	50.1
07/08/20	19:00	15	74.3	55.0	56.2	50.0
07/08/20	19:15	15	62.1	53.3	51.4	48.2
07/08/20	19:30	15	58.2	53.9	52.0	49.8
07/08/20	19:45	15	75.0	53.7	56.5	49.4
07/08/20	20:00	15	76.6	54.6	56.7	49.6
07/08/20	20:15	15	63.6	54.4	52.7	50.1
07/08/20	20:30	15	64.6	52.9	51.2	47.9
07/08/20	20:45	15	74.7	52.2	55.9	47.5
07/08/20	21:00	15	77.0	52.5	55.8	47.8
07/08/20	21:15	15	59.9	52.7	50.5	47.1
07/08/20	21:30	15	57.2	51.9	49.5	46.2
07/08/20	21:45	15	74.7	53.0	56.1	47.1
07/08/20	22:00	15	73.6	52.9	54.4	45.7

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
07/08/20	22:15	15	57.7	52.8	49.6	43.9
07/08/20	22:30	15	61.9	53.4	50.3	44.7
07/08/20	22:45	15	75.2	49.7	55.5	44.3
	Arith. Average		67.5	53.5	53.6	48.7
	Log. Average		71.8	54.1	54.3	49.6
	Minimum		53.1	48.8	46.7	43.0
	Maximum		77.9	57.1	57.8	53.7
07/08/20	23:00	15	55.4	51.2	48.9	46.0
07/08/20	23:15	15	82.0	51.3	59.6	44.3
07/08/20	23:30	15	58.7	51.2	48.0	41.8
07/08/20	23:45	15	75.7	50.8	55.9	42.2
08/08/20	00:00	15	57.6	48.1	46.1	42.6
08/08/20	00:15	15	59.1	50.7	47.8	43.0
08/08/20	00:30	15	59.3	51.3	47.9	40.1
08/08/20	00:45	15	61.0	51.3	47.6	39.8
08/08/20	01:00	15	63.1	52.1	48.6	38.2
08/08/20	01:15	15	59.1	47.7	44.4	38.5
08/08/20	01:30	15	55.4	47.6	44.1	35.5
08/08/20	01:45	15	57.5	47.4	43.3	34.2
08/08/20	02:00	15	58.6	47.7	43.6	36.0
08/08/20	02:15	15	49.8	43.9	41.3	38.0
08/08/20	02:30	15	51.7	45.1	41.4	36.2
08/08/20	02:45	15	55.1	48.2	44.3	37.0
08/08/20	03:00	15	52.4	45.5	42.5	38.1
08/08/20	03:15	15	51.2	45.5	42.4	38.2
08/08/20	03:30	15	53.0	46.4	43.0	37.9
08/08/20	03:45	15	54.4	46.9	43.7	36.7
08/08/20	04:00	15	53.7	46.4	43.8	38.3
08/08/20	04:15	15	52.9	46.8	43.1	37.9
08/08/20	04:30	15	55.1	47.3	44.6	39.2
08/08/20	04:45	15	48.5	44.9	42.6	39.3
08/08/20	05:00	15	72.2	48.6	48.7	40.3
08/08/20	05:15	15	71.0	50.7	48.0	42.0
08/08/20	05:30	15	60.4	51.9	48.8	42.0
08/08/20	05:45	15	57.1	51.3	48.7	43.0
08/08/20	06:00	15	64.5	49.9	47.8	43.7
08/08/20	06:15	15	57.1	48.1	46.0	42.7
08/08/20	06:30	15	61.5	50.3	48.4	45.0
08/08/20	06:45	15	62.2	53.5	50.8	46.5
	Arith. Average		58.9	48.7	46.4	40.1
	Log. Average		68.8	49.4	49.2	41.3
	Minimum		48.5	43.9	41.3	34.2
	Maximum		82.0	53.5	59.6	46.5
08/08/20	07:00	15	72.1	54.7	54.1	48.8

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
08/08/20	07:15	15	81.6	50.8	53.3	46.7
08/08/20	07:30	15	58.7	52.1	50.1	47.5
08/08/20	07:45	15	74.7	50.7	53.5	47.0
08/08/20	08:00	15	57.2	49.1	47.6	45.3
08/08/20	08:15	15	72.7	48.9	51.8	45.2
08/08/20	08:30	15	77.2	49.2	53.8	44.5
08/08/20	08:45	15	70.8	48.9	47.6	44.5
08/08/20	09:00	15	63.1	49.3	47.7	45.1
08/08/20	09:15	15	71.9	48.6	51.2	44.7
08/08/20	09:30	15	74.5	47.6	52.8	43.9
08/08/20	09:45	15	58.1	47.8	46.2	44.0
08/08/20	10:00	15	64.8	48.6	46.5	43.9
08/08/20	10:15	15	72.6	47.7	51.2	43.4
08/08/20	10:30	15	75.0	47.0	52.7	43.3
08/08/20	10:45	15	52.4	47.7	46.1	44.1
08/08/20	11:00	15	63.5	50.9	48.5	43.9
08/08/20	11:15	15	64.3	50.7	48.5	43.6
08/08/20	11:30	15	75.1	50.0	55.7	45.3
08/08/20	11:45	15	53.4	48.8	47.1	44.8
08/08/20	12:00	15	57.4	48.7	46.3	42.9
08/08/20	12:15	15	72.8	45.0	52.4	41.6
08/08/20	12:30	15	74.6	45.6	52.5	41.6
08/08/20	12:45	15	49.6	45.3	43.8	42.0
08/08/20	13:00	15	59.9	46.6	44.9	42.9
08/08/20	13:15	15	72.3	50.9	51.9	44.7
08/08/20	13:30	15	72.9	48.2	51.8	43.2
08/08/20	13:45	15	53.7	47.6	45.7	43.2
08/08/20	14:00	15	54.5	48.1	45.9	43.3
08/08/20	14:15	15	71.1	48.9	50.9	45.1
08/08/20	14:30	15	74.9	49.3	53.1	44.5
08/08/20	14:45	15	56.9	50.0	47.9	44.6
08/08/20	15:00	15	55.0	48.9	46.7	44.2
08/08/20	15:15	15	71.7	48.1	50.6	42.7
08/08/20	15:30	15	75.4	48.1	53.1	42.7
08/08/20	15:45	15	54.6	50.2	47.9	44.8
08/08/20	16:00	15	62.3	54.1	52.1	49.4
08/08/20	16:15	15	73.0	54.1	54.1	49.1
08/08/20	16:30	15	75.3	55.8	57.3	50.6
08/08/20	16:45	15	63.2	55.1	53.0	49.8
08/08/20	17:00	15	60.6	55.5	53.6	50.8
08/08/20	17:15	15	73.9	55.3	56.2	50.3
08/08/20	17:30	15	74.6	55.7	55.7	50.9
08/08/20	17:45	15	58.9	54.5	52.6	50.1
08/08/20	18:00	15	60.3	54.4	52.4	49.3
08/08/20	18:15	15	75.7	54.9	55.3	49.7
08/08/20	18:30	15	75.5	53.9	55.0	47.7

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
08/08/20	18:45	15	59.1	53.4	51.2	47.9
08/08/20	19:00	15	75.2	53.3	54.3	48.4
08/08/20	19:15	15	63.1	53.2	51.1	47.5
08/08/20	19:30	15	58.1	52.7	50.3	46.8
08/08/20	19:45	15	75.1	53.5	54.7	47.5
08/08/20	20:00	15	75.6	52.9	53.9	46.9
08/08/20	20:15	15	60.0	51.7	49.4	46.0
08/08/20	20:30	15	58.1	51.5	49.2	45.5
08/08/20	20:45	15	75.3	49.8	53.4	44.4
08/08/20	21:00	15	75.0	50.9	53.5	44.8
08/08/20	21:15	15	57.6	50.7	48.3	44.4
08/08/20	21:30	15	58.9	49.6	47.0	42.7
08/08/20	21:45	15	75.1	47.7	53.0	42.9
08/08/20	22:00	15	72.4	48.3	51.3	43.4
08/08/20	22:15	15	56.6	47.7	45.7	43.0
08/08/20	22:30	15	56.3	50.0	47.5	43.2
08/08/20	22:45	15	73.4	49.4	52.4	41.9
	Arith. Average		66.6	50.4	50.9	45.4
	Log. Average		72.0	51.4	52.0	46.3
	Minimum		49.6	45.0	43.8	41.6
	Maximum		81.6	55.8	57.3	50.9
08/08/20	23:00	15	81.7	51.7	56.8	41.3
08/08/20	23:15	15	57.0	48.9	46.3	42.0
08/08/20	23:30	15	52.1	47.0	44.8	41.3
08/08/20	23:45	15	76.4	45.4	53.3	39.2
09/08/20	00:00	15	53.3	44.0	41.6	37.7
09/08/20	00:15	15	57.9	44.7	42.1	38.0
09/08/20	00:30	15	52.6	43.4	40.2	35.1
09/08/20	00:45	15	51.0	44.5	41.9	37.5
09/08/20	01:00	15	52.1	42.3	40.0	36.5
09/08/20	01:15	15	48.4	41.6	39.1	36.6
09/08/20	01:30	15	45.7	40.4	38.6	36.5
09/08/20	01:45	15	45.7	40.5	38.6	36.1
09/08/20	02:00	15	44.7	39.1	37.5	35.6
09/08/20	02:15	15	45.1	40.4	38.6	36.4
09/08/20	02:30	15	44.4	40.6	38.9	37.0
09/08/20	02:45	15	47.1	41.2	39.0	36.2
09/08/20	03:00	15	46.0	41.0	39.0	36.8
09/08/20	03:15	15	45.9	40.9	39.3	37.1
09/08/20	03:30	15	56.7	42.9	40.6	37.8
09/08/20	03:45	15	45.9	42.5	40.2	37.4
09/08/20	04:00	15	48.5	42.8	40.6	37.5
09/08/20	04:15	15	52.3	42.0	40.0	37.1
09/08/20	04:30	15	48.6	42.0	40.1	37.4
09/08/20	04:45	15	65.1	42.4	41.8	36.5

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
09/08/20	05:00	15	52.2	42.1	40.0	37.1
09/08/20	05:15	15	54.5	43.8	41.4	37.8
09/08/20	05:30	15	59.2	45.9	43.6	40.1
09/08/20	05:45	15	56.9	44.4	42.3	39.1
09/08/20	06:00	15	57.7	46.1	43.9	40.1
09/08/20	06:15	15	61.8	45.5	43.7	39.9
09/08/20	06:30	15	56.8	46.9	44.8	41.6
09/08/20	06:45	15	59.4	46.1	44.5	41.5
	Arith. Average		53.8	43.5	42.0	38.1
	Log. Average		68.0	44.6	45.5	38.5
	Minimum		44.4	39.1	37.5	35.1
	Maximum		81.7	51.7	56.8	42.0
09/08/20	07:00	15	63.8	46.3	44.5	41.6
09/08/20	07:15	15	55.4	47.7	45.3	42.0
09/08/20	07:30	15	56.8	47.0	45.3	42.7
09/08/20	07:45	15	62.3	47.9	46.4	43.5
09/08/20	08:00	15	53.7	47.5	45.7	43.2
09/08/20	08:15	15	54.7	48.5	46.1	42.8
09/08/20	08:30	15	56.3	47.9	46.2	43.8
09/08/20	08:45	15	55.7	49.3	47.2	44.2
09/08/20	09:00	15	58.1	47.8	46.2	43.8
09/08/20	09:15	15	52.7	48.2	46.6	44.5
09/08/20	09:30	15	56.8	48.2	46.6	44.4
09/08/20	09:45	15	53.5	48.5	46.6	44.0
09/08/20	10:00	15	54.0	46.6	45.0	42.7
09/08/20	10:15	15	56.4	46.2	44.9	43.2
09/08/20	10:30	15	55.3	46.4	44.7	42.6
09/08/20	10:45	15	54.1	46.6	45.0	42.8
09/08/20	11:00	15	52.7	48.1	45.8	43.1
09/08/20	11:15	15	62.6	48.1	46.7	44.2
09/08/20	11:30	15	61.4	49.5	47.3	44.1
09/08/20	11:45	15	54.9	50.3	48.5	46.4
09/08/20	12:00	15	57.9	51.7	49.7	47.1
09/08/20	12:15	15	58.9	50.7	48.4	44.0
09/08/20	12:30	15	54.6	49.5	47.2	44.1
09/08/20	12:45	15	54.0	49.9	47.5	44.3
09/08/20	13:00	15	61.4	52.0	49.5	45.3
09/08/20	13:15	15	57.6	51.9	49.3	46.2
09/08/20	13:30	15	61.0	52.3	50.1	46.9
09/08/20	13:45	15	59.8	53.3	51.1	48.3
09/08/20	14:00	15	59.0	53.3	50.8	46.3
09/08/20	14:15	15	55.7	51.9	49.7	46.0
09/08/20	14:30	15	59.0	52.4	50.3	47.2
09/08/20	14:45	15	60.8	52.6	50.2	46.3
09/08/20	15:00	15	58.0	52.9	50.8	47.2

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
09/08/20	15:15	15	57.3	53.1	51.0	48.1
09/08/20	15:30	15	56.8	51.7	49.8	47.0
09/08/20	15:45	15	63.1	54.4	52.1	48.3
09/08/20	16:00	15	58.5	53.6	51.4	48.2
09/08/20	16:15	15	63.7	53.6	51.9	49.3
09/08/20	16:30	15	61.6	52.7	50.3	46.4
09/08/20	16:45	15	58.1	52.3	50.4	47.6
09/08/20	17:00	15	70.1	52.2	50.6	46.8
09/08/20	17:15	15	56.2	51.4	49.3	46.6
09/08/20	17:30	15	60.1	50.6	49.0	46.0
09/08/20	17:45	15	59.0	52.1	50.0	46.7
09/08/20	18:00	15	58.0	52.7	50.5	47.4
09/08/20	18:15	15	58.3	52.5	50.2	47.0
09/08/20	18:30	15	55.6	52.3	50.1	47.1
09/08/20	18:45	15	58.9	51.7	49.5	46.2
09/08/20	19:00	15	59.7	51.4	49.4	46.0
09/08/20	19:15	15	58.0	50.5	48.6	46.2
09/08/20	19:30	15	56.6	50.3	48.4	46.0
09/08/20	19:45	15	55.0	49.9	48.1	45.6
09/08/20	20:00	15	59.9	50.5	48.5	44.6
09/08/20	20:15	15	56.6	50.8	48.7	45.9
09/08/20	20:30	15	57.7	50.8	48.7	45.5
09/08/20	20:45	15	56.7	50.9	48.7	45.5
09/08/20	21:00	15	59.1	50.1	48.0	44.8
09/08/20	21:15	15	55.4	49.7	47.7	44.9
09/08/20	21:30	15	53.6	49.3	47.3	44.7
09/08/20	21:45	15	55.3	48.6	46.5	43.3
09/08/20	22:00	15	57.7	48.8	46.9	43.7
09/08/20	22:15	15	58.8	49.1	46.4	42.4
09/08/20	22:30	15	53.2	47.0	44.9	41.2
09/08/20	22:45	15	54.7	46.9	44.6	41.3
	Arith. Average		57.7	50.2	48.2	45.1
	Log. Average		59.3	50.7	48.6	45.6
	Minimum		52.7	46.2	44.5	41.2
	Maximum		70.1	54.4	52.1	49.3
09/08/20	23:00	15	52.9	46.9	44.2	40.7
09/08/20	23:15	15	53.1	46.9	44.0	40.1
09/08/20	23:30	15	53.5	46.3	43.8	39.1
09/08/20	23:45	15	52.7	45.1	42.3	37.1
10/08/20	00:00	15	50.9	44.1	40.8	34.2
10/08/20	00:15	15	48.8	42.7	39.0	31.1
10/08/20	00:30	15	56.8	42.0	38.3	30.3
10/08/20	00:45	15	56.8	43.2	40.2	33.2
10/08/20	01:00	15	49.7	42.7	39.1	34.2
10/08/20	01:15	15	51.2	43.6	39.9	34.0

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
10/08/20	01:30	15	54.1	43.5	40.0	34.5
10/08/20	01:45	15	52.3	42.5	39.3	33.4
10/08/20	02:00	15	51.5	42.0	39.0	34.1
10/08/20	02:15	15	52.2	43.5	39.4	33.8
10/08/20	02:30	15	51.0	41.0	37.8	33.7
10/08/20	02:45	15	51.3	42.5	39.0	34.2
10/08/20	03:00	15	56.3	42.7	39.5	33.7
10/08/20	03:15	15	51.9	42.8	39.5	34.4
10/08/20	03:30	15	55.0	44.2	40.5	34.6
10/08/20	03:45	15	57.6	44.8	41.5	34.0
10/08/20	04:00	15	50.1	42.5	39.9	34.8
10/08/20	04:15	15	51.7	46.0	42.9	37.1
10/08/20	04:30	15	51.6	44.4	41.8	35.9
10/08/20	04:45	15	51.9	45.5	42.6	36.5
10/08/20	05:00	15	53.2	47.0	43.9	37.8
10/08/20	05:15	15	61.5	47.3	45.3	42.1
10/08/20	05:30	15	58.0	49.4	47.3	44.1
10/08/20	05:45	15	72.9	49.8	53.5	45.2
10/08/20	06:00	15	60.4	52.7	50.6	47.5
10/08/20	06:15	15	65.6	51.7	49.9	47.3
10/08/20	06:30	15	55.9	52.1	50.5	48.4
10/08/20	06:45	15	60.4	53.0	51.1	48.6
	Arith. Average		54.8	45.5	42.7	37.5
	Log. Average		60.2	47.0	45.3	41.2
	Minimum		48.8	41.0	37.8	30.3
	Maximum		72.9	53.0	53.5	48.6
10/08/20	07:00	15	58.3	53.8	52.3	50.3
10/08/20	07:15	15	72.9	54.8	55.4	50.1
10/08/20	07:30	15	61.3	54.2	52.8	51.1
10/08/20	07:45	15	74.8	53.8	56.7	49.7
10/08/20	08:00	15	61.6	53.8	51.9	49.4
10/08/20	08:15	15	75.1	52.1	55.4	48.6
10/08/20	08:30	15	74.8	53.0	55.8	48.0
10/08/20	08:45	15	57.6	52.1	50.0	47.7
10/08/20	09:00	15	58.9	51.2	49.1	46.8
10/08/20	09:15	15	73.3	51.7	54.3	45.8
10/08/20	09:30	15	76.1	52.1	55.8	46.8
10/08/20	09:45	15	57.0	51.0	48.4	44.7
10/08/20	10:00	15	54.8	49.4	47.2	44.2
10/08/20	10:15	15	70.9	49.4	52.1	43.6
10/08/20	10:30	15	73.0	49.1	52.3	45.2
10/08/20	10:45	15	54.6	48.9	46.8	43.6
10/08/20	11:00	15	55.9	50.4	48.6	46.3
10/08/20	11:15	15	71.8	48.7	50.7	42.4
10/08/20	11:30	15	77.6	48.8	53.8	44.0

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
10/08/20	11:45	15	55.2	49.3	47.0	44.3
10/08/20	12:00	15	55.3	48.4	46.7	44.2
10/08/20	12:15	15	73.5	51.2	52.6	45.2
10/08/20	12:30	15	75.0	51.8	55.5	46.0
10/08/20	12:45	15	56.7	52.0	50.1	47.7
10/08/20	13:00	15	58.1	51.3	49.5	46.7
10/08/20	13:15	15	69.8	52.2	52.9	47.3
10/08/20	13:30	15	75.0	50.9	55.6	44.7
10/08/20	13:45	15	59.2	52.1	50.1	47.5
10/08/20	14:00	15	60.0	52.9	50.8	47.6
10/08/20	14:15	15	75.6	54.2	55.6	47.6
10/08/20	14:30	15	73.3	55.5	56.1	48.9
10/08/20	14:45	15	60.1	54.4	52.1	48.8
10/08/20	15:00	15	58.5	52.9	50.6	47.4
10/08/20	15:15	15	72.3	54.8	55.2	48.8
10/08/20	15:30	15	76.9	54.2	55.5	47.7
10/08/20	15:45	15	57.7	52.5	50.3	46.7
10/08/20	16:00	15	60.7	54.7	52.0	48.8
10/08/20	16:15	15	71.9	54.5	53.8	49.0
10/08/20	16:30	15	77.8	55.2	55.7	47.7
10/08/20	16:45	15	61.9	55.5	53.7	51.4
10/08/20	17:00	15	65.5	56.4	54.5	51.5
10/08/20	17:15	15	73.6	56.1	55.8	51.9
10/08/20	17:30	15	75.2	56.9	57.8	52.1
10/08/20	17:45	15	63.4	55.8	53.9	51.4
10/08/20	18:00	15	61.1	55.6	54.0	51.9
10/08/20	18:15	15	76.2	56.1	57.4	51.6
10/08/20	18:30	15	74.1	55.2	56.4	49.4
10/08/20	18:45	15	60.9	53.0	51.1	48.1
10/08/20	19:00	15	73.8	53.3	55.2	47.9
10/08/20	19:15	15	56.3	51.3	49.2	46.1
10/08/20	19:30	15	57.9	52.0	49.8	46.4
10/08/20	19:45	15	74.8	51.0	55.8	45.8
10/08/20	20:00	15	73.7	49.8	54.0	44.5
10/08/20	20:15	15	58.7	51.1	49.0	45.5
10/08/20	20:30	15	55.9	51.3	49.0	45.4
10/08/20	20:45	15	74.5	50.0	55.5	44.5
10/08/20	21:00	15	74.4	48.5	53.9	42.8
10/08/20	21:15	15	51.2	48.0	45.7	42.5
10/08/20	21:30	15	51.7	47.8	45.4	42.0
10/08/20	21:45	15	75.6	48.4	55.7	43.7
10/08/20	22:00	15	71.0	50.2	52.8	44.5
10/08/20	22:15	15	55.2	49.3	47.0	43.5
10/08/20	22:30	15	53.5	48.8	46.5	43.1
10/08/20	22:45	15	76.0	48.3	55.6	42.6
	Arith. Average		66.1	52.1	52.4	46.9

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
	Log. Average		71.7	52.8	53.4	47.8
	Minimum		51.2	47.8	45.4	42.0
	Maximum		77.8	56.9	57.8	52.1
10/08/20	23:00	15	79.2	47.1	57.8	40.1
10/08/20	23:15	15	53.9	48.5	45.5	39.3
10/08/20	23:30	15	55.3	46.5	43.5	37.8
10/08/20	23:45	15	77.0	47.7	55.5	39.7
11/08/20	00:00	15	51.5	45.2	41.6	35.3
11/08/20	00:15	15	55.7	47.2	44.0	37.4
11/08/20	00:30	15	55.2	48.5	44.8	37.0
11/08/20	00:45	15	58.0	46.8	43.0	35.0
11/08/20	01:00	15	56.4	45.7	42.6	36.6
11/08/20	01:15	15	55.3	45.3	41.7	34.4
11/08/20	01:30	15	59.2	44.1	40.8	34.1
11/08/20	01:45	15	51.9	43.8	40.6	35.7
11/08/20	02:00	15	51.1	44.4	41.2	35.8
11/08/20	02:15	15	51.7	43.0	39.9	35.5
11/08/20	02:30	15	49.0	43.4	39.9	35.3
11/08/20	02:45	15	53.3	44.4	41.0	34.6
11/08/20	03:00	15	50.5	44.7	40.6	34.3
11/08/20	03:15	15	52.4	44.0	40.6	34.7
11/08/20	03:30	15	53.6	46.4	43.4	36.9
11/08/20	03:45	15	56.8	46.8	44.3	38.1
11/08/20	04:00	15	51.1	43.8	40.9	36.3
11/08/20	04:15	15	49.2	42.8	39.9	35.4
11/08/20	04:30	15	56.2	48.1	44.8	38.5
11/08/20	04:45	15	53.7	48.6	45.5	40.0
11/08/20	05:00	15	55.9	48.8	46.2	41.1
11/08/20	05:15	15	71.5	53.3	50.5	44.0
11/08/20	05:30	15	61.6	53.5	51.4	48.1
11/08/20	05:45	15	70.4	54.0	54.1	48.8
11/08/20	06:00	15	61.3	57.1	54.6	50.9
11/08/20	06:15	15	60.8	56.3	54.2	51.5
11/08/20	06:30	15	61.5	55.6	54.1	52.0
11/08/20	06:45	15	62.5	56.6	54.9	52.8
	Arith. Average		57.6	47.9	45.7	39.6
	Log. Average		67.3	50.4	49.8	44.5
	Minimum		49.0	42.8	39.9	34.1
	Maximum		79.2	57.1	57.8	52.8
11/08/20	07:00	15	75.9	58.4	58.6	54.5
11/08/20	07:15	15	60.7	57.3	55.5	53.4
11/08/20	07:30	15	61.5	56.7	55.0	52.2
11/08/20	07:45	15	74.8	53.9	56.8	50.2
11/08/20	08:00	15	58.9	51.7	49.8	47.4

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
11/08/20	08:15	15	75.6	49.9	55.3	46.5
11/08/20	08:30	15	73.8	48.7	54.8	44.8
11/08/20	08:45	15	66.5	48.4	47.2	44.1
11/08/20	09:00	15	65.7	48.9	47.0	43.5
11/08/20	09:15	7	72.8	50.6	56.4	44.5
	Arith. Average		68.6	52.5	53.6	48.1
	Log. Average		72.0	54.0	55.0	49.9
	Minimum		58.9	48.4	47.0	43.5
	Maximum		75.9	58.4	58.6	54.5

TABLE B3 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT2, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
29/07/20	17:30	15	77.9	53.8	52.5	50.1
29/07/20	17:45	15	60.4	54.0	52.4	50.5
29/07/20	18:00	15	58.2	52.0	50.7	49.1
29/07/20	18:15	15	64.0	53.2	51.4	48.8
29/07/20	18:30	15	60.1	52.7	50.9	48.1
29/07/20	18:45	15	59.7	52.1	50.5	48.4
29/07/20	19:00	15	63.9	53.0	50.8	48.0
29/07/20	19:15	15	61.5	54.1	52.3	49.7
29/07/20	19:30	15	67.9	53.6	51.9	49.0
29/07/20	19:45	15	78.1	54.6	53.4	49.5
29/07/20	20:00	15	60.9	52.8	51.1	48.3
29/07/20	20:15	15	60.4	52.4	50.8	48.3
29/07/20	20:30	15	65.9	52.6	51.1	48.0
29/07/20	20:45	15	61.1	52.5	50.6	48.1
29/07/20	21:00	15	62.8	52.7	51.0	48.7
29/07/20	21:15	15	64.8	52.3	50.8	48.3
29/07/20	21:30	15	77.2	52.8	53.3	48.2
29/07/20	21:45	15	58.6	52.3	50.3	47.5
29/07/20	22:00	15	61.6	51.9	50.6	48.3
29/07/20	22:15	15	56.2	51.1	49.5	47.3
29/07/20	22:30	15	57.8	50.8	49.1	47.0
29/07/20	22:45	15	58.2	50.3	48.5	45.6
	Arith. Average		63.5	52.6	51.1	48.4
	Log. Average		69.8	52.7	51.2	48.5
	Minimum		56.2	50.3	48.5	45.6
	Maximum		78.1	54.6	53.4	50.5
29/07/20	23:00	15	65.7	50.3	50.0	45.9
29/07/20	23:15	15	55.5	49.8	47.7	45.3
29/07/20	23:30	15	55.3	49.3	47.4	45.1
29/07/20	23:45	15	58.0	49.1	47.0	44.2
30/07/20	00:00	15	62.4	47.3	47.4	44.5
30/07/20	00:15	15	56.1	48.6	46.4	43.8
30/07/20	00:30	15	58.7	48.7	47.0	44.7
30/07/20	00:45	15	59.5	50.6	48.3	45.1
30/07/20	01:00	15	53.5	48.1	46.3	44.4
30/07/20	01:15	15	55.6	48.8	46.7	44.6
30/07/20	01:30	15	51.5	46.4	45.1	44.0
30/07/20	01:45	15	53.8	47.6	45.7	43.6
30/07/20	02:00	15	53.3	48.2	46.2	44.2
30/07/20	02:15	15	53.1	46.9	45.5	44.2
30/07/20	02:30	15	52.6	46.5	45.2	43.6
30/07/20	02:45	15	52.3	48.2	46.5	44.7
30/07/20	03:00	15	53.6	47.2	45.9	44.6
30/07/20	03:15	15	51.8	47.9	46.2	44.5
30/07/20	03:30	15	51.4	47.2	45.8	44.5

TABLE B4: UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
30/07/20	03:45	15	54.0	47.3	46.0	44.7
30/07/20	04:00	15	52.7	48.7	46.7	44.9
30/07/20	04:15	15	53.9	48.8	46.8	44.7
30/07/20	04:30	15	60.0	49.8	47.9	44.8
30/07/20	04:45	15	55.2	49.6	47.9	45.7
30/07/20	05:00	15	61.0	51.8	49.9	47.6
30/07/20	05:15	15	68.9	53.0	51.4	49.0
30/07/20	05:30	15	57.7	54.8	53.0	50.7
30/07/20	05:45	15	61.5	56.2	54.7	52.8
30/07/20	06:00	15	59.0	55.6	54.3	52.7
30/07/20	06:15	15	58.4	55.9	54.7	53.1
30/07/20	06:30	15	61.5	56.0	54.9	53.5
30/07/20	06:45	15	60.4	56.1	55.0	53.5
	Arith. Average		56.8	50.0	48.4	46.4
	Log. Average		59.4	51.3	49.8	47.9
	Minimum		51.4	46.4	45.1	43.6
	Maximum		68.9	56.2	55.0	53.5
30/07/20	07:00	15	60.4	56.6	55.2	53.4
30/07/20	07:15	15	60.5	56.0	54.6	52.9
30/07/20	07:30	15	65.8	54.7	53.6	51.9
30/07/20	07:45	15	58.8	55.1	53.4	51.4
30/07/20	08:00	15	62.2	55.1	53.8	52.1
30/07/20	08:15	15	60.5	55.5	54.0	52.3
30/07/20	08:30	15	58.1	55.3	54.1	52.4
30/07/20	08:45	15	59.6	55.2	53.7	52.0
30/07/20	09:00	15	62.1	55.7	54.1	52.2
30/07/20	09:15	15	69.5	55.5	54.1	52.3
30/07/20	09:30	15	58.8	54.7	53.2	51.1
30/07/20	09:45	15	78.8	54.4	53.6	51.1
30/07/20	10:00	15	58.9	54.1	52.7	50.8
30/07/20	10:15	15	63.9	54.7	53.0	50.6
30/07/20	10:30	15	60.4	54.1	52.8	51.2
30/07/20	10:45	15	62.2	54.7	53.1	51.2
30/07/20	11:00	15	62.2	53.5	52.1	50.2
30/07/20	11:15	15	57.4	53.6	52.1	50.4
30/07/20	11:30	15	67.0	53.8	52.7	50.3
30/07/20	11:45	15	59.0	54.0	52.6	50.9
30/07/20	12:00	15	65.0	54.2	52.6	50.4
30/07/20	12:15	15	61.1	53.6	52.1	50.2
30/07/20	12:30	15	59.6	53.6	52.1	49.9
30/07/20	12:45	15	57.8	53.9	52.4	50.7
30/07/20	13:00	15	69.0	54.2	53.3	51.0
30/07/20	13:15	15	67.9	54.3	52.9	50.7
30/07/20	13:30	15	59.1	54.5	53.0	50.9
30/07/20	13:45	15	65.8	54.7	52.7	50.1

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
30/07/20	14:00	15	61.4	54.8	53.4	51.7
30/07/20	14:15	15	62.8	54.6	53.2	51.3
30/07/20	14:30	15	58.7	54.0	52.5	50.6
30/07/20	14:45	15	61.1	53.5	51.9	49.9
30/07/20	15:00	15	63.4	52.6	51.1	49.0
30/07/20	15:15	15	61.6	53.7	51.3	48.3
30/07/20	15:30	15	58.5	50.8	49.2	47.2
30/07/20	15:45	15	59.4	51.7	50.2	48.5
30/07/20	16:00	15	64.3	53.3	52.0	50.3
30/07/20	16:15	15	60.3	54.0	52.5	50.8
30/07/20	16:30	15	59.0	54.5	53.0	51.3
30/07/20	16:45	15	61.4	54.7	53.3	51.6
30/07/20	17:00	15	61.0	55.5	54.1	52.3
30/07/20	17:15	15	62.2	55.8	54.2	52.2
30/07/20	17:30	15	61.6	55.7	54.0	52.1
30/07/20	17:45	15	61.5	54.9	53.5	51.9
30/07/20	18:00	15	62.3	55.1	53.7	51.6
30/07/20	18:15	15	65.1	55.2	53.6	51.1
30/07/20	18:30	15	58.9	54.6	53.1	51.2
30/07/20	18:45	15	60.6	53.9	52.3	50.3
30/07/20	19:00	15	59.2	53.1	51.4	49.0
30/07/20	19:15	15	64.7	53.3	51.5	49.1
30/07/20	19:30	15	58.5	52.0	50.5	48.4
30/07/20	19:45	15	59.0	51.8	50.2	48.1
30/07/20	20:00	15	60.6	52.3	50.8	48.3
30/07/20	20:15	15	57.2	51.8	50.5	48.7
30/07/20	20:30	15	56.2	51.9	50.3	48.2
30/07/20	20:45	15	60.4	51.7	50.0	47.8
30/07/20	21:00	15	64.0	53.3	51.2	48.2
30/07/20	21:15	15	53.6	50.2	48.7	46.9
30/07/20	21:30	15	53.9	49.9	48.2	46.1
30/07/20	21:45	15	59.2	51.7	50.0	47.2
30/07/20	22:00	15	60.5	51.3	49.2	46.1
30/07/20	22:15	15	56.6	49.7	48.1	46.3
30/07/20	22:30	15	53.7	48.6	47.1	45.5
30/07/20	22:45	15	56.5	49.5	47.5	45.3
	Arith. Average		61.1	53.7	52.1	50.1
	Log. Average		64.5	54.0	52.5	50.5
	Minimum		53.6	48.6	47.1	45.3
	Maximum		78.8	56.6	55.2	53.4
30/07/20	23:00	15	63.8	48.6	48.3	45.4
30/07/20	23:15	15	53.8	48.5	46.8	44.7
30/07/20	23:30	15	52.0	47.3	46.0	44.3
30/07/20	23:45	15	54.9	48.2	46.6	44.4
31/07/20	00:00	15	58.8	48.4	46.8	44.2

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	00:15	15	52.3	46.3	45.0	43.3
31/07/20	00:30	15	51.0	45.7	44.5	43.4
31/07/20	00:45	15	50.3	45.8	44.5	43.0
31/07/20	01:00	15	51.9	45.5	44.5	43.5
31/07/20	01:15	15	52.7	45.8	44.8	43.7
31/07/20	01:30	15	51.8	46.3	45.1	44.0
31/07/20	01:45	15	50.4	46.0	44.9	43.8
31/07/20	02:00	15	53.2	46.1	45.0	43.9
31/07/20	02:15	15	55.5	45.3	44.5	43.5
31/07/20	02:30	15	50.4	46.2	44.6	42.9
31/07/20	02:45	15	50.2	44.6	43.8	43.0
31/07/20	03:00	15	51.4	45.9	44.6	42.8
31/07/20	03:15	15	56.8	46.9	45.5	43.8
31/07/20	03:30	15	57.9	48.1	46.2	43.8
31/07/20	03:45	15	56.2	49.0	47.0	44.4
31/07/20	04:00	15	56.5	49.7	47.3	44.2
31/07/20	04:15	15	57.9	50.0	47.8	45.0
31/07/20	04:30	15	54.7	48.6	46.9	45.0
31/07/20	04:45	15	53.4	48.0	46.4	44.8
31/07/20	05:00	15	60.7	49.3	47.7	45.2
31/07/20	05:15	15	56.0	50.4	48.9	47.1
31/07/20	05:30	15	57.5	51.7	50.0	47.8
31/07/20	05:45	15	64.6	54.1	52.3	49.8
31/07/20	06:00	15	58.7	53.1	51.6	49.9
31/07/20	06:15	15	55.5	52.7	51.4	50.0
31/07/20	06:30	15	61.6	54.5	52.8	50.9
31/07/20	06:45	15	61.9	56.7	55.2	53.5
	Arith. Average		55.4	48.5	47.1	45.3
	Log. Average		57.5	49.8	48.3	46.4
	Minimum		50.2	44.6	43.8	42.8
	Maximum		64.6	56.7	55.2	53.5
31/07/20	07:00	15	60.2	55.1	53.9	52.5
31/07/20	07:15	15	68.7	55.0	53.9	52.5
31/07/20	07:30	15	61.2	53.7	52.7	51.5
31/07/20	07:45	15	74.0	53.2	52.6	50.9
31/07/20	08:00	15	62.6	53.6	52.3	50.3
31/07/20	08:15	15	60.6	53.8	52.5	50.6
31/07/20	08:30	15	57.7	53.2	52.0	50.4
31/07/20	08:45	15	57.8	53.1	51.8	50.1
31/07/20	09:00	15	57.8	53.6	52.0	50.2
31/07/20	09:15	15	65.8	53.5	52.1	50.3
31/07/20	09:30	15	63.8	53.3	52.0	50.3
31/07/20	09:45	15	59.8	53.8	52.3	50.5
31/07/20	10:00	15	62.6	54.5	53.0	50.6
31/07/20	10:15	15	63.2	54.2	52.8	50.7

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	10:30	15	66.9	54.1	52.4	50.2
31/07/20	10:45	15	57.7	53.7	52.3	50.5
31/07/20	11:00	15	58.2	53.9	52.5	50.7
31/07/20	11:15	15	57.9	53.5	52.1	50.4
31/07/20	11:30	15	58.5	53.9	52.5	50.7
31/07/20	11:45	15	60.4	55.0	53.5	51.3
31/07/20	12:00	15	59.5	56.0	54.2	52.2
31/07/20	12:15	15	65.7	54.9	53.6	51.6
31/07/20	12:30	15	60.6	55.3	53.8	52.2
31/07/20	12:45	15	59.5	55.7	54.0	51.9
31/07/20	13:00	15	66.6	55.7	54.4	51.8
31/07/20	13:15	15	60.1	55.4	53.9	52.1
31/07/20	13:30	15	67.8	55.5	54.1	51.8
31/07/20	13:45	15	60.5	55.6	54.0	52.2
31/07/20	14:00	15	66.2	57.8	56.1	53.7
31/07/20	14:15	15	63.5	58.4	56.4	54.0
31/07/20	14:30	15	63.2	57.9	55.9	53.8
31/07/20	14:45	15	60.4	57.0	55.3	53.4
31/07/20	15:00	15	64.1	55.6	54.4	52.9
31/07/20	15:15	15	60.4	55.9	54.6	52.9
31/07/20	15:30	15	60.1	55.4	54.0	52.5
31/07/20	15:45	15	59.9	55.0	53.7	52.0
31/07/20	16:00	15	59.0	54.8	53.7	52.4
31/07/20	16:15	15	60.7	55.4	54.1	52.7
31/07/20	16:30	15	58.9	55.9	54.5	53.0
31/07/20	16:45	15	66.0	55.5	54.3	52.7
31/07/20	17:00	15	63.8	55.3	54.0	52.2
31/07/20	17:15	15	60.2	55.8	54.5	52.9
31/07/20	17:30	15	63.0	55.5	54.0	52.1
31/07/20	17:45	15	72.1	55.1	53.6	51.5
31/07/20	18:00	15	64.1	54.9	53.2	51.0
31/07/20	18:15	15	67.5	55.1	53.3	50.9
31/07/20	18:30	15	62.5	54.6	53.0	51.1
31/07/20	18:45	15	58.8	54.3	52.8	51.1
31/07/20	19:00	15	67.0	54.4	52.7	50.1
31/07/20	19:15	15	63.2	54.5	52.8	50.5
31/07/20	19:30	15	64.9	53.1	51.6	49.4
31/07/20	19:45	15	61.5	53.7	51.8	49.1
31/07/20	20:00	15	67.7	54.0	52.1	49.4
31/07/20	20:15	15	63.6	52.1	50.2	47.5
31/07/20	20:30	15	57.4	51.1	49.5	47.5
31/07/20	20:45	15	59.3	50.5	49.0	46.5
31/07/20	21:00	15	59.4	49.8	48.4	46.2
31/07/20	21:15	15	62.2	49.8	48.5	45.8
31/07/20	21:30	15	53.4	49.0	47.4	45.6
31/07/20	21:45	15	60.1	50.1	48.6	46.1

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
31/07/20	22:00	15	59.2	50.3	48.7	46.1
31/07/20	22:15	15	60.4	49.7	48.1	45.8
31/07/20	22:30	15	55.8	49.6	47.6	45.1
31/07/20	22:45	15	59.1	50.1	48.3	45.5
	Arith. Average		61.9	54.0	52.6	50.6
	Log. Average		64.0	54.5	53.0	51.1
	Minimum		53.4	49.0	47.4	45.1
	Maximum		74.0	58.4	56.4	54.0
31/07/20	23:00	15	66.3	48.5	49.0	44.4
31/07/20	23:15	15	55.0	48.3	46.5	44.5
31/07/20	23:30	15	68.0	48.8	48.3	45.0
31/07/20	23:45	15	58.3	47.8	46.7	44.1
01/08/20	00:00	15	65.1	47.2	46.9	43.9
01/08/20	00:15	15	53.5	46.6	45.0	43.4
01/08/20	00:30	15	53.1	46.6	45.2	43.8
01/08/20	00:45	15	50.9	45.6	44.4	43.2
01/08/20	01:00	15	54.5	47.9	45.8	43.6
01/08/20	01:15	15	63.0	46.7	45.7	43.7
01/08/20	01:30	15	52.1	45.3	44.3	43.3
01/08/20	01:45	15	53.2	45.4	44.2	43.0
01/08/20	02:00	15	55.4	45.5	44.5	43.4
01/08/20	02:15	15	51.7	45.0	44.0	43.0
01/08/20	02:30	15	52.4	44.8	44.0	43.1
01/08/20	02:45	15	52.5	45.1	44.1	43.1
01/08/20	03:00	15	53.6	44.9	44.1	43.2
01/08/20	03:15	15	51.2	44.6	43.7	42.7
01/08/20	03:30	15	49.9	45.1	44.2	43.3
01/08/20	03:45	15	49.3	44.8	44.0	43.0
01/08/20	04:00	15	51.9	45.0	44.3	43.5
01/08/20	04:15	15	47.8	45.0	44.0	43.0
01/08/20	04:30	15	48.5	45.0	44.2	43.3
01/08/20	04:45	15	48.0	44.9	44.0	42.9
01/08/20	05:00	15	63.5	52.6	48.8	43.7
01/08/20	05:15	15	61.5	49.2	47.4	44.4
01/08/20	05:30	15	63.1	49.0	47.1	44.9
01/08/20	05:45	15	56.6	49.3	47.1	44.8
01/08/20	06:00	15	57.3	49.7	48.1	46.3
01/08/20	06:15	15	53.3	48.9	47.1	44.8
01/08/20	06:30	15	55.7	50.1	48.4	46.3
01/08/20	06:45	15	56.8	50.0	48.2	46.1
	Arith. Average		55.4	47.0	45.7	43.9
	Log. Average		59.3	47.5	46.1	44.0
	Minimum		47.8	44.6	43.7	42.7
	Maximum		68.0	52.6	49.0	46.3

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
01/08/20	07:00	15	60.2	50.6	49.0	46.6
01/08/20	07:15	15	55.4	50.2	48.4	46.2
01/08/20	07:30	15	59.6	50.2	48.5	46.2
01/08/20	07:45	15	63.7	51.2	49.4	46.5
01/08/20	08:00	15	59.7	50.8	49.2	47.3
01/08/20	08:15	15	61.6	51.0	49.5	47.2
01/08/20	08:30	15	61.8	51.4	49.9	47.7
01/08/20	08:45	15	57.5	51.0	49.7	48.0
01/08/20	09:00	15	68.7	51.9	50.7	48.6
01/08/20	09:15	15	59.4	52.6	50.8	48.6
01/08/20	09:30	15	59.9	52.2	50.6	48.7
01/08/20	09:45	15	66.8	52.1	50.9	48.6
01/08/20	10:00	15	58.7	52.4	51.0	49.4
01/08/20	10:15	15	58.4	53.4	51.7	49.6
01/08/20	10:30	15	62.1	51.7	50.3	48.6
01/08/20	10:45	15	60.6	52.8	51.3	49.3
01/08/20	11:00	15	59.0	51.7	50.1	48.3
01/08/20	11:15	15	61.9	52.1	50.8	49.0
01/08/20	11:30	15	58.4	52.6	51.2	49.6
01/08/20	11:45	15	59.6	53.2	51.7	49.6
01/08/20	12:00	15	57.9	53.3	51.8	49.8
01/08/20	12:15	15	61.2	53.6	52.1	50.0
01/08/20	12:30	15	59.8	53.2	51.5	49.4
01/08/20	12:45	15	64.1	53.6	52.0	49.7
01/08/20	13:00	15	62.3	52.7	51.1	48.9
01/08/20	13:15	15	64.9	53.7	51.7	49.0
01/08/20	13:30	15	62.5	55.3	53.3	51.1
01/08/20	13:45	15	62.6	54.0	52.0	49.5
01/08/20	14:00	15	64.5	54.4	52.5	50.0
01/08/20	14:15	15	71.2	53.0	51.6	49.0
01/08/20	14:30	15	63.4	52.6	51.0	48.5
01/08/20	14:45	15	62.2	52.4	50.9	48.9
01/08/20	15:00	15	60.0	53.8	52.3	50.0
01/08/20	15:15	15	66.5	54.1	52.6	50.5
01/08/20	15:30	15	61.4	54.3	52.6	50.5
01/08/20	15:45	15	61.9	53.7	52.3	50.4
01/08/20	16:00	15	63.5	54.5	53.1	51.2
01/08/20	16:15	15	66.9	54.4	53.2	50.9
01/08/20	16:30	15	62.9	53.7	52.3	50.5
01/08/20	16:45	15	72.6	54.3	53.0	49.6
01/08/20	17:00	15	60.2	53.0	51.1	48.5
01/08/20	17:15	15	67.3	51.7	50.8	48.1
01/08/20	17:30	15	61.5	52.4	50.6	48.3
01/08/20	17:45	15	64.5	51.8	50.0	47.7
01/08/20	18:00	15	58.7	53.5	51.8	50.0
01/08/20	18:15	15	60.9	53.9	52.1	49.6

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
01/08/20	18:30	15	63.3	53.3	51.4	49.2
01/08/20	18:45	15	65.7	53.5	51.5	48.7
01/08/20	19:00	15	60.9	52.1	50.4	48.1
01/08/20	19:15	15	57.5	51.0	49.5	47.6
01/08/20	19:30	15	61.9	51.7	50.1	47.6
01/08/20	19:45	15	60.3	51.2	49.6	47.1
01/08/20	20:00	15	59.5	51.3	49.4	46.8
01/08/20	20:15	15	61.4	50.9	49.4	47.4
01/08/20	20:30	15	58.7	50.5	48.9	46.7
01/08/20	20:45	15	66.7	50.2	48.8	46.8
01/08/20	21:00	15	62.5	49.8	48.5	46.4
01/08/20	21:15	15	54.3	49.2	47.8	46.0
01/08/20	21:30	15	62.6	48.7	47.4	45.5
01/08/20	21:45	15	58.4	48.1	47.0	45.2
01/08/20	22:00	15	59.9	47.5	46.4	44.5
01/08/20	22:15	15	51.4	47.2	46.2	45.1
01/08/20	22:30	15	57.0	48.1	46.7	44.9
01/08/20	22:45	15	63.9	47.4	46.7	44.8
	Arith. Average		61.6	52.0	50.5	48.3
	Log. Average		63.4	52.4	50.8	48.6
	Minimum		51.4	47.2	46.2	44.5
	Maximum		72.6	55.3	53.3	51.2
01/08/20	23:00	15	66.4	46.6	48.0	44.3
01/08/20	23:15	15	59.7	46.5	45.5	44.4
01/08/20	23:30	15	50.0	46.6	45.5	44.2
01/08/20	23:45	15	60.1	46.4	46.0	44.0
02/08/20	00:00	15	51.8	46.2	45.2	44.2
02/08/20	00:15	15	55.6	45.8	44.9	43.9
02/08/20	00:30	15	65.3	46.1	45.9	43.7
02/08/20	00:45	15	54.1	45.7	44.8	43.6
02/08/20	01:00	15	52.2	45.3	44.4	43.6
02/08/20	01:15	15	50.1	45.2	44.2	43.1
02/08/20	01:30	15	55.0	45.0	44.2	43.3
02/08/20	01:45	15	48.6	44.9	44.0	43.1
02/08/20	02:00	15	50.7	45.4	44.5	43.6
02/08/20	02:15	15	49.4	45.4	44.3	43.2
02/08/20	02:30	15	48.3	44.9	44.1	43.3
02/08/20	02:45	15	49.6	44.6	43.9	43.1
02/08/20	03:00	15	47.2	45.0	44.3	43.5
02/08/20	03:15	15	47.5	44.9	43.8	42.7
02/08/20	03:30	15	49.6	45.0	44.2	43.4
02/08/20	03:45	15	50.3	45.6	44.4	43.4
02/08/20	04:00	15	48.6	45.0	44.4	43.8
02/08/20	04:15	15	51.6	45.9	44.8	43.7
02/08/20	04:30	15	49.0	46.0	45.0	44.1

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
02/08/20	04:45	15	51.9	46.2	45.1	43.9
02/08/20	05:00	15	67.0	48.9	48.5	43.8
02/08/20	05:15	15	64.0	47.8	48.4	43.9
02/08/20	05:30	15	60.1	48.1	46.6	44.5
02/08/20	05:45	15	55.6	49.1	47.3	45.1
02/08/20	06:00	15	54.7	48.4	47.1	45.7
02/08/20	06:15	15	55.4	49.1	47.5	45.4
02/08/20	06:30	15	56.3	49.8	48.0	46.0
02/08/20	06:45	15	62.0	49.0	47.5	44.9
	Arith. Average		54.3	46.4	45.5	44.0
	Log. Average		58.7	46.7	45.8	44.0
	Minimum		47.2	44.6	43.8	42.7
	Maximum		67.0	49.8	48.5	46.0
02/08/20	07:00	15	56.1	49.2	47.3	45.0
02/08/20	07:15	15	59.2	49.0	47.4	45.6
02/08/20	07:30	15	57.0	48.1	46.5	44.9
02/08/20	07:45	15	53.9	47.8	46.6	45.3
02/08/20	08:00	15	55.5	49.6	48.1	46.2
02/08/20	08:15	15	57.2	49.1	47.7	46.0
02/08/20	08:30	15	58.8	49.9	48.3	46.1
02/08/20	08:45	15	68.0	50.7	49.4	46.5
02/08/20	09:00	15	55.5	49.2	47.5	45.8
02/08/20	09:15	15	60.7	49.5	47.8	45.4
02/08/20	09:30	15	69.9	50.3	49.3	47.0
02/08/20	09:45	15	64.1	52.1	50.7	47.9
02/08/20	10:00	15	57.2	49.8	48.3	46.7
02/08/20	10:15	15	61.2	51.4	50.1	47.9
02/08/20	10:30	15	66.0	51.2	50.2	48.0
02/08/20	10:45	15	57.9	51.0	49.6	47.8
02/08/20	11:00	15	64.0	52.0	50.8	48.8
02/08/20	11:15	15	67.4	51.3	50.5	47.9
02/08/20	11:30	15	68.2	52.7	51.4	48.6
02/08/20	11:45	15	59.0	52.6	51.0	48.7
02/08/20	12:00	15	61.3	51.2	49.8	48.0
02/08/20	12:15	15	65.3	52.3	50.8	48.6
02/08/20	12:30	15	58.8	50.0	48.6	46.9
02/08/20	12:45	15	64.7	52.7	50.2	47.2
02/08/20	13:00	15	59.7	50.8	49.3	47.4
02/08/20	13:15	15	63.9	52.8	51.3	48.9
02/08/20	13:30	15	58.4	53.1	51.5	49.4
02/08/20	13:45	15	60.6	50.6	49.1	47.2
02/08/20	14:00	15	57.9	52.5	50.4	47.9
02/08/20	14:15	15	61.7	49.9	49.0	47.0
02/08/20	14:30	15	59.6	50.0	48.4	46.5
02/08/20	14:45	15	58.1	50.1	48.6	46.6

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
02/08/20	15:00	15	54.8	50.5	48.9	47.0
02/08/20	15:15	15	65.0	54.2	52.0	48.9
02/08/20	15:30	15	58.0	53.6	51.9	50.0
02/08/20	15:45	15	66.7	53.1	51.7	49.0
02/08/20	16:00	15	67.6	53.7	52.2	49.4
02/08/20	16:15	15	63.9	53.5	51.9	49.7
02/08/20	16:30	15	59.7	53.8	52.2	50.0
02/08/20	16:45	15	65.0	53.0	51.6	49.6
02/08/20	17:00	15	66.0	53.3	51.8	49.7
02/08/20	17:15	15	64.9	54.2	52.2	49.8
02/08/20	17:30	15	64.0	52.8	51.4	49.7
02/08/20	17:45	15	64.0	54.8	52.5	49.6
02/08/20	18:00	15	55.2	51.9	50.4	48.8
02/08/20	18:15	15	71.3	52.6	51.5	48.7
02/08/20	18:30	15	60.8	52.0	50.4	48.4
02/08/20	18:45	15	60.5	52.2	50.3	48.2
02/08/20	19:00	15	56.4	52.4	50.7	48.7
02/08/20	19:15	15	55.7	51.2	49.7	47.8
02/08/20	19:30	15	57.1	51.4	49.6	47.4
02/08/20	19:45	15	61.5	51.3	49.7	47.4
02/08/20	20:00	15	55.1	49.9	48.6	46.8
02/08/20	20:15	15	57.4	50.8	49.2	47.3
02/08/20	20:30	15	57.4	50.4	48.7	46.8
02/08/20	20:45	15	61.7	50.4	48.8	46.5
02/08/20	21:00	15	56.5	49.7	48.1	46.1
02/08/20	21:15	15	52.9	48.8	47.3	45.6
02/08/20	21:30	15	60.2	48.9	47.5	45.3
02/08/20	21:45	15	57.7	48.3	46.7	44.9
02/08/20	22:00	15	52.4	47.9	46.4	44.6
02/08/20	22:15	15	52.9	47.8	46.3	44.6
02/08/20	22:30	15	53.4	47.5	46.0	44.3
02/08/20	22:45	15	52.7	47.0	45.5	44.1
	Arith. Average		60.2	51.0	49.5	47.4
	Log. Average		62.8	51.4	49.8	47.7
	Minimum		52.4	47.0	45.5	44.1
	Maximum		71.3	54.8	52.5	50.0
02/08/20	23:00	15	52.0	47.0	45.6	44.1
02/08/20	23:15	15	53.1	47.6	45.8	43.8
02/08/20	23:30	15	54.3	48.2	46.4	44.1
02/08/20	23:45	15	62.4	47.4	45.8	43.8
03/08/20	00:00	15	60.0	46.5	45.4	43.7
03/08/20	00:15	15	53.5	45.4	44.4	43.2
03/08/20	00:30	15	50.7	45.3	44.2	43.1
03/08/20	00:45	15	51.0	45.6	44.3	42.6
03/08/20	01:00	15	49.5	44.9	44.1	43.3

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
03/08/20	01:15	15	50.3	44.6	44.0	43.3
03/08/20	01:30	15	48.2	44.8	44.1	43.4
03/08/20	01:45	15	48.9	44.6	43.9	42.8
03/08/20	02:00	15	46.3	44.4	43.8	43.2
03/08/20	02:15	15	48.6	44.3	43.7	42.9
03/08/20	02:30	15	49.2	44.5	43.9	43.3
03/08/20	02:45	15	46.9	44.3	43.7	42.8
03/08/20	03:00	15	54.9	44.7	44.1	43.4
03/08/20	03:15	15	53.7	45.0	44.3	42.9
03/08/20	03:30	15	47.8	44.9	44.3	43.7
03/08/20	03:45	15	49.3	45.1	44.3	43.3
03/08/20	04:00	15	47.5	44.6	44.0	43.3
03/08/20	04:15	15	47.4	45.2	44.6	43.8
03/08/20	04:30	15	50.9	45.3	44.8	44.2
03/08/20	04:45	15	49.0	44.9	44.2	43.3
03/08/20	05:00	15	53.7	45.3	44.4	43.6
03/08/20	05:15	15	60.1	46.2	45.6	44.5
03/08/20	05:30	15	49.9	46.1	45.3	44.4
03/08/20	05:45	15	59.1	48.5	47.1	45.2
03/08/20	06:00	15	56.8	48.7	47.4	46.0
03/08/20	06:15	15	65.2	48.2	47.3	45.6
03/08/20	06:30	15	51.8	48.0	47.0	45.8
03/08/20	06:45	15	68.0	48.5	47.6	45.9
	Arith. Average		52.8	45.9	45.0	43.8
	Log. Average		57.5	46.2	45.2	43.9
	Minimum		46.3	44.3	43.7	42.6
	Maximum		68.0	48.7	47.6	46.0
03/08/20	07:00	15	55.7	48.5	47.3	45.9
03/08/20	07:15	15	60.2	48.9	48.0	46.6
03/08/20	07:30	15	61.9	51.2	49.0	46.4
03/08/20	07:45	15	62.7	51.8	49.4	46.0
03/08/20	08:00	15	62.8	48.7	47.5	46.0
03/08/20	08:15	15	67.1	48.8	47.6	45.4
03/08/20	08:30	15	60.3	48.4	47.0	45.6
03/08/20	08:45	15	56.9	47.4	46.5	45.4
03/08/20	09:00	15	57.4	47.2	46.2	45.1
03/08/20	09:15	15	55.4	48.3	46.7	45.0
03/08/20	09:30	15	57.0	47.7	46.8	45.3
03/08/20	09:45	15	56.9	47.7	46.6	45.4
03/08/20	10:00	15	59.4	47.0	46.1	44.7
03/08/20	10:15	15	59.0	47.2	46.2	44.8
03/08/20	10:30	15	56.9	48.2	46.7	45.3
03/08/20	10:45	15	59.5	48.1	46.6	44.9
03/08/20	11:00	15	59.2	47.2	46.4	45.0
03/08/20	11:15	15	58.9	47.2	46.4	45.2

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
03/08/20	11:30	15	60.7	46.9	46.0	44.6
03/08/20	11:45	15	60.0	47.9	46.6	44.9
03/08/20	12:00	15	57.7	48.2	47.0	45.6
03/08/20	12:15	15	57.6	49.1	47.5	45.5
03/08/20	12:30	15	58.4	48.8	47.6	45.4
03/08/20	12:45	15	54.8	48.0	46.7	45.3
03/08/20	13:00	15	56.4	47.7	46.6	45.1
03/08/20	13:15	15	56.4	48.4	47.1	45.5
03/08/20	13:30	15	59.2	48.8	47.3	45.4
03/08/20	13:45	15	54.9	47.6	46.6	45.5
03/08/20	14:00	15	62.3	48.6	47.0	45.2
03/08/20	14:15	15	59.8	50.2	48.2	45.8
03/08/20	14:30	15	59.5	47.6	46.5	44.8
03/08/20	14:45	15	63.5	47.4	47.9	44.6
03/08/20	15:00	15	65.7	47.8	48.1	44.5
03/08/20	15:15	15	66.5	46.9	47.5	44.3
03/08/20	15:30	15	65.8	52.3	49.7	44.5
03/08/20	15:45	15	67.7	52.8	50.2	44.6
03/08/20	16:00	15	71.8	47.8	50.5	45.1
03/08/20	16:15	15	59.5	47.6	46.7	44.8
03/08/20	16:30	15	79.3	49.1	56.6	44.8
03/08/20	16:45	15	56.7	47.7	46.5	45.0
03/08/20	17:00	15	56.5	46.7	45.5	44.1
03/08/20	17:15	15	63.3	48.2	46.5	44.7
03/08/20	17:30	15	54.4	46.3	45.4	44.1
03/08/20	17:45	15	56.9	46.9	45.6	44.3
03/08/20	18:00	15	54.4	46.1	45.1	43.8
03/08/20	18:15	15	57.9	48.3	46.8	44.7
03/08/20	18:30	15	57.5	48.1	46.5	44.2
03/08/20	18:45	15	58.5	48.0	47.0	45.2
03/08/20	19:00	15	58.8	46.7	45.7	43.8
03/08/20	19:15	15	53.9	45.2	44.6	43.7
03/08/20	19:30	15	61.5	46.2	45.2	43.7
03/08/20	19:45	15	55.1	45.4	44.8	43.5
03/08/20	20:00	15	58.1	47.3	45.7	43.4
03/08/20	20:15	15	57.1	46.9	45.6	44.1
03/08/20	20:30	15	57.3	46.0	45.0	43.7
03/08/20	20:45	15	65.4	46.1	45.7	44.0
03/08/20	21:00	15	56.8	46.8	45.5	43.7
03/08/20	21:15	15	50.4	45.2	44.5	43.9
03/08/20	21:30	15	53.4	44.9	44.4	43.2
03/08/20	21:45	15	57.8	46.3	45.6	43.7
03/08/20	22:00	15	67.0	46.9	46.0	43.5
03/08/20	22:15	15	49.1	45.4	44.5	43.5
03/08/20	22:30	15	45.8	44.5	43.8	43.1
03/08/20	22:45	15	57.9	45.3	45.0	43.1

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
	Arith. Average		59.2	47.7	46.7	44.7
	Log. Average		64.3	48.0	47.4	44.8
	Minimum		45.8	44.5	43.8	43.1
	Maximum		79.3	52.8	56.6	46.6
03/08/20	23:00	15	69.3	44.9	47.2	43.0
03/08/20	23:15	15	48.6	45.0	44.1	43.1
03/08/20	23:30	15	55.0	46.1	45.2	43.8
03/08/20	23:45	15	57.6	47.3	46.3	44.0
04/08/20	00:00	15	50.0	46.1	45.0	43.9
04/08/20	00:15	15	51.6	47.0	45.3	43.5
04/08/20	00:30	15	49.1	45.5	44.6	43.7
04/08/20	00:45	15	55.8	48.1	46.1	43.5
04/08/20	01:00	15	56.3	47.2	45.7	44.0
04/08/20	01:15	15	52.3	46.5	45.2	43.7
04/08/20	01:30	15	52.3	48.3	46.3	44.3
04/08/20	01:45	15	54.2	46.5	45.3	43.9
04/08/20	02:00	15	51.9	47.0	45.4	43.8
04/08/20	02:15	15	52.0	47.2	45.3	43.8
04/08/20	02:30	15	50.5	45.8	44.8	43.9
04/08/20	02:45	15	50.8	47.0	45.5	44.2
04/08/20	03:00	15	51.1	46.6	45.4	44.3
04/08/20	03:15	15	52.0	47.4	45.9	44.5
04/08/20	03:30	15	56.0	47.6	46.0	44.6
04/08/20	03:45	15	55.9	50.6	48.2	45.5
04/08/20	04:00	15	57.2	49.7	48.0	45.7
04/08/20	04:15	15	56.1	49.6	47.8	45.3
04/08/20	04:30	15	55.5	50.2	48.6	46.5
04/08/20	04:45	15	57.1	50.3	48.5	46.2
04/08/20	05:00	15	56.7	52.4	50.5	48.1
04/08/20	05:15	15	57.0	53.1	51.1	48.8
04/08/20	05:30	15	59.5	54.6	53.0	51.1
04/08/20	05:45	15	63.6	55.1	53.6	51.0
04/08/20	06:00	15	61.3	54.9	53.5	51.7
04/08/20	06:15	15	63.0	55.1	53.9	52.3
04/08/20	06:30	15	61.8	55.7	54.5	52.9
04/08/20	06:45	15	63.1	55.8	54.2	52.2
	Arith. Average		55.8	49.2	47.8	46.0
	Log. Average		59.0	50.7	49.3	47.3
	Minimum		48.6	44.9	44.1	43.0
	Maximum		69.3	55.8	54.5	52.9
04/08/20	07:00	15	69.5	55.6	54.3	52.5
04/08/20	07:15	15	65.9	55.3	53.8	51.8
04/08/20	07:30	15	65.3	52.9	52.0	50.9
04/08/20	07:45	15	67.0	54.1	52.9	51.4

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
04/08/20	08:00	15	61.8	53.6	52.7	51.4
04/08/20	08:15	15	66.4	53.3	52.5	51.2
04/08/20	08:30	15	66.6	53.1	52.2	50.6
04/08/20	08:45	15	57.2	53.0	51.9	50.4
04/08/20	09:00	15	59.3	54.8	53.4	51.5
04/08/20	09:15	15	61.7	54.9	53.3	51.3
04/08/20	09:30	15	62.9	53.5	52.0	49.9
04/08/20	09:45	15	60.3	53.8	52.1	50.1
04/08/20	10:00	15	58.3	54.0	52.2	49.9
04/08/20	10:15	15	68.1	54.1	52.4	49.8
04/08/20	10:30	15	58.7	54.1	52.3	50.0
04/08/20	10:45	15	60.3	53.4	51.9	49.9
04/08/20	11:00	15	58.9	54.2	52.6	50.7
04/08/20	11:15	15	65.2	54.2	52.3	49.8
04/08/20	11:30	15	59.9	54.2	52.4	50.3
04/08/20	11:45	15	58.6	54.5	52.9	51.1
04/08/20	12:00	15	60.0	54.7	52.6	50.3
04/08/20	12:15	15	65.9	54.8	53.2	51.1
04/08/20	12:30	15	60.2	55.2	53.5	51.1
04/08/20	12:45	15	59.8	55.6	53.9	52.0
04/08/20	13:00	15	66.6	56.2	54.8	52.7
04/08/20	13:15	15	65.2	55.2	53.5	50.7
04/08/20	13:30	15	63.2	55.4	53.8	51.2
04/08/20	13:45	15	60.1	54.1	52.3	50.3
04/08/20	14:00	15	63.0	55.5	54.0	52.0
04/08/20	14:15	15	59.6	55.6	54.0	52.3
04/08/20	14:30	15	59.7	55.2	53.5	51.2
04/08/20	14:45	15	60.2	54.8	53.2	51.3
04/08/20	15:00	15	62.8	55.4	53.7	51.5
04/08/20	15:15	15	69.1	56.5	54.6	50.9
04/08/20	15:30	15	63.4	54.8	53.2	51.0
04/08/20	15:45	15	62.9	55.7	54.1	51.9
04/08/20	16:00	15	62.4	55.4	54.0	52.1
04/08/20	16:15	15	61.4	56.0	54.5	52.6
04/08/20	16:30	15	66.3	56.1	54.5	52.4
04/08/20	16:45	15	62.0	56.2	54.7	52.9
04/08/20	17:00	15	63.3	56.2	54.7	52.7
04/08/20	17:15	15	78.0	57.1	55.9	52.3
04/08/20	17:30	15	66.4	56.2	54.8	52.5
04/08/20	17:45	15	63.0	56.4	54.9	52.9
04/08/20	18:00	15	65.9	56.0	54.2	51.9
04/08/20	18:15	15	63.5	55.6	54.3	52.3
04/08/20	18:30	15	60.7	54.3	52.8	50.8
04/08/20	18:45	15	57.9	54.2	52.6	50.5
04/08/20	19:00	15	62.1	54.8	52.9	50.5
04/08/20	19:15	15	58.6	53.8	52.4	50.6

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
04/08/20	19:30	15	57.9	53.4	51.6	49.5
04/08/20	19:45	15	62.6	53.6	52.1	49.9
04/08/20	20:00	15	63.8	53.4	51.2	48.1
04/08/20	20:15	15	59.1	52.7	50.9	48.4
04/08/20	20:30	15	100.8	52.1	66.1	48.1
04/08/20	20:45	15	60.7	51.8	50.2	47.5
04/08/20	21:00	15	58.0	52.0	50.0	47.7
04/08/20	21:15	15	58.2	51.6	49.8	47.6
04/08/20	21:30	15	56.9	51.6	50.0	47.8
04/08/20	21:45	15	68.0	52.3	51.0	48.3
04/08/20	22:00	15	60.2	52.8	51.1	48.9
04/08/20	22:15	15	56.7	51.6	49.6	47.0
04/08/20	22:30	15	58.4	50.9	49.1	46.9
04/08/20	22:45	15	63.3	50.4	48.7	46.0
	Arith. Average		63.0	54.3	52.9	50.5
	Log. Average		82.8	54.5	54.1	50.8
	Minimum		56.7	50.4	48.7	46.0
	Maximum		100.8	57.1	66.1	52.9
04/08/20	23:00	15	69.5	49.2	50.4	45.1
04/08/20	23:15	15	61.6	50.6	48.3	45.0
04/08/20	23:30	15	58.2	50.1	48.2	45.8
04/08/20	23:45	15	68.8	50.5	49.2	44.7
05/08/20	00:00	15	54.5	48.6	46.5	44.0
05/08/20	00:15	15	55.2	48.8	47.0	44.8
05/08/20	00:30	15	56.9	48.9	46.8	44.4
05/08/20	00:45	15	56.6	47.2	45.6	44.0
05/08/20	01:00	15	53.3	46.5	45.1	43.5
05/08/20	01:15	15	53.2	46.8	45.3	43.8
05/08/20	01:30	15	54.1	47.3	45.7	44.0
05/08/20	01:45	15	55.8	46.9	45.3	43.8
05/08/20	02:00	15	53.4	46.1	44.7	43.4
05/08/20	02:15	15	58.5	47.0	45.5	43.9
05/08/20	02:30	15	54.7	46.8	45.3	43.6
05/08/20	02:45	15	55.4	48.0	46.1	44.1
05/08/20	03:00	15	55.5	46.6	45.1	43.6
05/08/20	03:15	15	63.0	47.0	45.6	43.7
05/08/20	03:30	15	56.2	48.6	46.1	43.6
05/08/20	03:45	15	55.4	47.5	45.9	44.0
05/08/20	04:00	15	59.1	48.4	46.5	44.2
05/08/20	04:15	15	57.8	47.9	46.0	43.8
05/08/20	04:30	15	54.3	48.7	46.9	44.7
05/08/20	04:45	15	55.6	49.0	47.0	44.8
05/08/20	05:00	15	63.6	51.9	50.0	46.4
05/08/20	05:15	15	64.6	53.3	51.6	48.2
05/08/20	05:30	15	63.4	51.9	50.7	48.4

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
05/08/20	05:45	15	63.2	53.7	52.0	49.6
05/08/20	06:00	15	62.1	53.5	52.1	50.1
05/08/20	06:15	15	58.3	54.5	52.7	50.6
05/08/20	06:30	15	66.7	55.7	54.5	52.0
05/08/20	06:45	15	59.2	55.5	54.1	52.3
	Arith. Average		58.7	49.5	47.9	45.6
	Log. Average		61.5	50.5	49.0	46.6
	Minimum		53.2	46.1	44.7	43.4
	Maximum		69.5	55.7	54.5	52.3
05/08/20	07:00	15	62.2	56.0	54.4	52.5
05/08/20	07:15	15	63.4	56.1	54.7	52.9
05/08/20	07:30	15	66.4	60.4	57.1	53.6
05/08/20	07:45	15	64.1	56.8	55.3	53.5
05/08/20	08:00	15	58.9	55.8	54.6	53.3
05/08/20	08:15	15	63.6	56.4	55.0	53.1
05/08/20	08:30	15	69.8	56.4	55.4	52.8
05/08/20	08:45	15	61.8	55.8	54.4	52.7
05/08/20	09:00	15	60.0	55.3	54.0	52.0
05/08/20	09:15	15	60.4	55.3	54.0	52.3
05/08/20	09:30	15	68.8	55.9	54.5	52.6
05/08/20	09:45	15	63.9	56.0	54.6	53.0
05/08/20	10:00	15	62.2	56.0	54.7	52.9
05/08/20	10:15	15	62.8	56.0	54.8	53.2
05/08/20	10:30	15	62.4	55.4	53.9	51.9
05/08/20	10:45	15	61.6	56.3	54.9	53.2
05/08/20	11:00	15	61.9	56.3	54.9	53.0
05/08/20	11:15	15	66.7	56.4	54.9	53.0
05/08/20	11:30	15	60.9	56.5	54.9	53.2
05/08/20	11:45	15	65.2	57.8	55.9	53.4
05/08/20	12:00	15	61.9	56.2	54.8	53.4
05/08/20	12:15	15	63.5	56.5	55.1	53.2
05/08/20	12:30	15	61.6	56.6	54.8	52.4
05/08/20	12:45	15	62.1	56.5	54.5	52.2
05/08/20	13:00	15	60.1	56.5	54.7	52.5
05/08/20	13:15	15	67.8	57.3	55.4	52.7
05/08/20	13:30	15	70.8	57.6	56.0	54.0
05/08/20	13:45	15	62.4	56.1	54.6	52.8
05/08/20	14:00	15	63.7	56.7	55.3	53.4
05/08/20	14:15	15	62.2	56.8	55.1	53.1
05/08/20	14:30	15	62.1	56.9	54.8	52.4
05/08/20	14:45	15	59.8	56.6	55.2	53.3
05/08/20	15:00	15	60.3	56.8	55.3	53.3
05/08/20	15:15	15	60.7	56.9	55.1	53.2
05/08/20	15:30	15	67.2	56.9	55.1	52.8
05/08/20	15:45	15	61.6	56.8	55.0	52.3

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
05/08/20	16:00	15	59.2	56.4	54.8	52.9
05/08/20	16:15	15	63.0	56.8	55.2	53.2
05/08/20	16:30	15	66.4	56.6	55.0	52.9
05/08/20	16:45	15	70.9	56.0	54.8	52.9
05/08/20	17:00	15	68.7	56.0	54.7	52.7
05/08/20	17:15	15	61.9	55.6	53.8	51.9
05/08/20	17:30	15	62.2	55.6	54.2	52.3
05/08/20	17:45	15	61.8	56.7	54.8	52.5
05/08/20	18:00	15	65.2	55.8	53.8	51.5
05/08/20	18:15	15	62.1	55.8	53.9	51.3
05/08/20	18:30	15	62.5	54.9	53.2	50.7
05/08/20	18:45	15	67.3	53.6	52.6	50.4
05/08/20	19:00	15	61.5	54.6	53.0	50.7
05/08/20	19:15	15	63.7	54.0	52.6	50.7
05/08/20	19:30	15	61.0	52.9	51.3	49.2
05/08/20	19:45	15	62.7	52.4	51.0	48.2
05/08/20	20:00	15	64.1	53.3	51.5	48.8
05/08/20	20:15	15	55.9	51.9	50.3	48.1
05/08/20	20:30	15	58.0	52.0	50.3	48.2
05/08/20	20:45	15	61.4	52.8	50.9	48.1
05/08/20	21:00	15	65.0	52.5	50.8	47.9
05/08/20	21:15	15	57.4	51.2	49.4	46.9
05/08/20	21:30	15	54.8	50.2	48.4	45.7
05/08/20	21:45	15	62.7	51.4	49.5	46.4
05/08/20	22:00	15	63.0	50.8	49.7	46.3
05/08/20	22:15	15	62.9	50.6	48.7	46.5
05/08/20	22:30	15	57.2	49.0	47.1	45.1
05/08/20	22:45	15	61.3	49.6	48.0	45.3
	Arith. Average		62.8	55.2	53.6	51.4
	Log. Average		64.1	55.7	54.1	52.0
	Minimum		54.8	49.0	47.1	45.1
	Maximum		70.9	60.4	57.1	54.0
05/08/20	23:00	15	68.7	49.2	50.5	44.6
05/08/20	23:15	15	55.4	48.7	46.8	44.8
05/08/20	23:30	15	53.9	47.7	45.9	44.0
05/08/20	23:45	15	60.4	48.1	47.1	44.3
06/08/20	00:00	15	57.0	48.8	46.7	44.0
06/08/20	00:15	15	57.5	47.0	45.5	43.9
06/08/20	00:30	15	53.4	46.4	45.0	43.5
06/08/20	00:45	15	54.8	46.8	45.5	43.9
06/08/20	01:00	15	51.6	45.7	44.6	43.6
06/08/20	01:15	15	53.4	46.1	44.9	43.8
06/08/20	01:30	15	55.6	46.7	45.2	43.3
06/08/20	01:45	15	54.1	46.6	45.2	43.8
06/08/20	02:00	15	54.0	46.9	45.3	43.7

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
06/08/20	02:15	15	53.3	45.6	44.6	43.5
06/08/20	02:30	15	55.3	46.9	45.2	43.6
06/08/20	02:45	15	57.9	47.1	45.4	43.6
06/08/20	03:00	15	52.1	46.8	45.1	43.5
06/08/20	03:15	15	54.6	45.6	44.8	43.8
06/08/20	03:30	15	51.6	46.2	45.0	43.9
06/08/20	03:45	15	53.2	46.6	45.1	43.5
06/08/20	04:00	15	54.5	47.6	45.9	44.1
06/08/20	04:15	15	58.9	47.5	45.9	44.0
06/08/20	04:30	15	56.1	48.9	46.9	44.4
06/08/20	04:45	15	56.0	48.2	46.5	44.5
06/08/20	05:00	15	53.8	48.8	47.2	45.2
06/08/20	05:15	15	56.8	50.5	48.7	46.5
06/08/20	05:30	15	56.4	51.1	49.3	46.9
06/08/20	05:45	15	61.8	53.0	51.1	48.7
06/08/20	06:00	15	58.2	53.0	51.2	49.0
06/08/20	06:15	15	58.7	54.3	52.5	49.7
06/08/20	06:30	15	67.4	54.9	53.4	51.4
06/08/20	06:45	15	61.1	55.1	53.8	52.2
	Arith. Average		56.5	48.5	47.1	45.1
	Log. Average		59.2	49.6	48.1	46.0
	Minimum		51.6	45.6	44.6	43.3
	Maximum		68.7	55.1	53.8	52.2
06/08/20	07:00	15	67.5	56.0	54.4	52.1
06/08/20	07:15	15	62.3	56.0	54.5	52.7
06/08/20	07:30	15	61.0	55.7	54.1	51.9
06/08/20	07:45	15	64.4	55.9	54.6	52.6
06/08/20	08:00	15	59.0	55.1	53.8	52.3
06/08/20	08:15	15	63.3	56.0	54.5	52.5
06/08/20	08:30	15	59.6	55.7	54.2	52.5
06/08/20	08:45	15	62.7	55.1	53.8	52.1
06/08/20	09:00	15	60.2	55.3	54.0	52.4
06/08/20	09:15	15	65.6	54.8	53.4	51.4
06/08/20	09:30	15	60.2	54.4	53.0	51.3
06/08/20	09:45	15	84.2	54.5	54.9	51.3
06/08/20	10:00	15	73.6	54.6	53.8	50.9
06/08/20	10:15	15	66.0	54.9	53.5	51.7
06/08/20	10:30	15	65.3	54.8	53.2	51.4
06/08/20	10:45	15	64.2	54.6	53.0	51.0
06/08/20	11:00	15	67.9	54.9	53.6	51.8
06/08/20	11:15	15	59.7	54.1	52.3	49.9
06/08/20	11:30	15	58.1	54.1	52.5	50.4
06/08/20	11:45	15	59.8	54.7	53.1	51.1
06/08/20	12:00	15	61.1	53.2	51.6	49.5
06/08/20	12:15	15	59.8	53.7	52.2	50.1

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
06/08/20	12:30	15	62.0	53.4	52.1	50.0
06/08/20	12:45	15	60.2	54.0	52.4	50.5
06/08/20	13:00	15	69.9	53.7	53.3	50.2
06/08/20	13:15	15	70.6	55.9	54.0	50.9
06/08/20	13:30	15	65.0	54.4	52.9	50.7
06/08/20	13:45	15	63.5	54.3	52.9	51.0
06/08/20	14:00	15	62.0	54.6	53.1	51.3
06/08/20	14:15	15	73.7	54.9	53.5	51.3
06/08/20	14:30	15	59.5	53.9	52.5	50.8
06/08/20	14:45	15	58.9	54.2	52.8	51.3
06/08/20	15:00	15	64.3	54.2	52.7	50.7
06/08/20	15:15	15	75.2	54.1	53.2	50.6
06/08/20	15:30	15	59.5	55.0	53.2	51.0
06/08/20	15:45	15	64.7	54.6	53.1	51.2
06/08/20	16:00	15	75.2	57.0	55.5	51.9
06/08/20	16:15	15	70.5	56.3	54.8	51.4
06/08/20	16:30	15	68.6	54.8	54.0	51.7
06/08/20	16:45	15	71.9	55.5	55.2	52.2
06/08/20	17:00	15	67.4	54.8	53.6	51.7
06/08/20	17:15	15	67.2	55.8	54.3	52.0
06/08/20	17:30	15	71.6	55.6	55.3	51.8
06/08/20	17:45	15	64.4	54.9	53.7	51.8
06/08/20	18:00	15	59.7	55.5	53.7	51.3
06/08/20	18:15	15	65.2	55.9	54.3	52.4
06/08/20	18:30	15	60.8	55.3	53.9	52.3
06/08/20	18:45	15	59.7	55.0	53.5	51.7
06/08/20	19:00	15	66.6	55.8	54.1	51.5
06/08/20	19:15	15	60.8	53.8	51.8	49.1
06/08/20	19:30	15	63.2	53.8	52.2	49.8
06/08/20	19:45	15	69.4	53.4	52.6	49.9
06/08/20	20:00	15	59.3	54.0	52.2	50.0
06/08/20	20:15	15	65.9	54.8	53.1	49.7
06/08/20	20:30	15	63.4	50.9	49.3	47.3
06/08/20	20:45	15	52.3	49.7	48.5	47.2
06/08/20	21:00	15	59.2	50.1	48.9	46.5
06/08/20	21:15	15	56.3	48.7	47.6	45.6
06/08/20	21:30	15	63.1	48.5	47.5	45.4
06/08/20	21:45	15	60.4	51.3	48.8	45.8
06/08/20	22:00	15	69.7	53.1	52.1	48.3
06/08/20	22:15	15	62.0	50.6	49.0	46.8
06/08/20	22:30	15	56.1	51.7	49.6	46.8
06/08/20	22:45	15	61.2	51.3	49.5	46.6
	Arith. Average		64.2	54.2	52.8	50.5
	Log. Average		69.5	54.5	53.1	50.9
	Minimum		52.3	48.5	47.5	45.4
	Maximum		84.2	57.0	55.5	52.7

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
06/08/20	23:00	15	67.9	52.3	51.3	45.9
06/08/20	23:15	15	56.4	50.2	48.4	45.8
06/08/20	23:30	15	56.1	49.6	47.7	45.2
06/08/20	23:45	15	54.8	50.5	48.2	45.6
07/08/20	00:00	15	62.5	50.1	48.7	45.5
07/08/20	00:15	15	55.8	49.9	47.8	45.2
07/08/20	00:30	15	53.3	48.7	46.9	44.6
07/08/20	00:45	15	59.6	47.6	46.4	45.0
07/08/20	01:00	15	51.0	47.0	45.6	44.1
07/08/20	01:15	15	53.1	47.8	46.1	44.5
07/08/20	01:30	15	54.3	47.6	46.2	44.2
07/08/20	01:45	15	55.0	46.7	45.8	44.6
07/08/20	02:00	15	52.6	46.0	45.2	44.3
07/08/20	02:15	15	50.4	46.4	45.4	44.6
07/08/20	02:30	15	51.2	46.2	44.8	43.5
07/08/20	02:45	15	53.8	47.6	45.8	44.3
07/08/20	03:00	15	60.5	48.9	46.6	43.9
07/08/20	03:15	15	53.3	48.4	46.5	44.6
07/08/20	03:30	15	54.4	48.4	46.9	45.0
07/08/20	03:45	15	54.4	48.3	46.8	44.9
07/08/20	04:00	15	53.9	48.3	46.7	45.2
07/08/20	04:15	15	51.8	48.5	46.8	45.0
07/08/20	04:30	15	54.4	49.5	47.7	45.4
07/08/20	04:45	15	54.1	50.3	48.4	46.0
07/08/20	05:00	15	55.2	50.1	48.4	46.3
07/08/20	05:15	15	60.4	50.3	48.9	47.0
07/08/20	05:30	15	60.3	52.2	50.6	48.4
07/08/20	05:45	15	62.3	53.3	51.9	50.1
07/08/20	06:00	15	59.1	53.8	52.2	50.3
07/08/20	06:15	15	65.7	53.6	52.2	50.1
07/08/20	06:30	15	61.9	55.2	53.9	52.3
07/08/20	06:45	15	67.9	55.3	54.2	52.9
	Arith. Average		56.8	49.6	48.1	46.1
	Log. Average		59.9	50.5	49.0	46.9
	Minimum		50.4	46.0	44.8	43.5
	Maximum		67.9	55.3	54.2	52.9
07/08/20	07:00	15	61.2	56.2	54.8	53.3
07/08/20	07:15	15	58.5	56.1	54.7	52.7
07/08/20	07:30	15	63.1	55.2	54.1	52.8
07/08/20	07:45	15	57.5	53.9	52.2	50.2
07/08/20	08:00	15	61.1	50.8	50.0	48.8
07/08/20	08:15	15	58.6	50.9	49.9	48.7
07/08/20	08:30	15	55.9	50.6	49.7	48.4
07/08/20	08:45	15	54.0	49.6	48.6	47.6

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
07/08/20	09:00	15	56.9	49.9	49.3	47.0
07/08/20	09:15	15	59.1	52.6	49.7	47.4
07/08/20	09:30	15	58.0	54.1	50.7	46.3
07/08/20	09:45	15	57.8	51.2	49.4	46.5
07/08/20	10:00	15	58.5	54.7	51.5	48.0
07/08/20	10:15	15	59.7	53.8	50.6	46.8
07/08/20	10:30	15	57.0	49.0	47.9	46.6
07/08/20	10:45	15	57.0	53.4	50.2	46.6
07/08/20	11:00	15	57.7	53.3	49.8	46.1
07/08/20	11:15	15	65.5	52.9	50.3	47.3
07/08/20	11:30	15	59.5	50.6	49.2	47.2
07/08/20	11:45	15	58.0	51.4	49.9	48.2
07/08/20	12:00	15	56.2	52.7	51.1	49.2
07/08/20	12:15	15	73.1	54.8	54.8	48.9
07/08/20	12:30	15	70.9	58.9	55.1	48.9
07/08/20	12:45	15	69.5	54.2	53.0	49.9
07/08/20	13:00	15	66.7	52.9	51.8	49.4
07/08/20	13:15	15	61.3	54.1	52.2	49.8
07/08/20	13:30	15	61.1	53.8	52.1	49.6
07/08/20	13:45	15	60.9	54.4	52.9	51.3
07/08/20	14:00	15	66.8	54.6	53.4	51.7
07/08/20	14:15	15	63.7	54.5	53.2	51.0
07/08/20	14:30	15	75.5	54.6	53.6	51.0
07/08/20	14:45	15	60.1	54.3	52.9	51.5
07/08/20	15:00	15	60.6	54.4	53.0	51.4
07/08/20	15:15	15	70.8	54.9	53.6	51.8
07/08/20	15:30	15	62.9	54.8	53.2	51.3
07/08/20	15:45	15	59.6	55.2	53.6	51.6
07/08/20	16:00	15	59.8	55.2	53.8	52.1
07/08/20	16:15	15	59.0	55.1	53.8	52.2
07/08/20	16:30	15	74.4	65.4	60.5	53.3
07/08/20	16:45	15	69.3	55.5	54.7	52.3
07/08/20	17:00	15	60.4	55.2	53.9	52.3
07/08/20	17:15	15	64.3	55.5	54.0	52.2
07/08/20	17:30	15	65.8	54.4	53.2	51.7
07/08/20	17:45	15	57.2	54.0	52.7	51.3
07/08/20	18:00	15	69.0	53.9	53.1	50.9
07/08/20	18:15	15	64.3	53.9	52.6	51.0
07/08/20	18:30	15	60.8	53.0	51.7	49.8
07/08/20	18:45	15	62.3	52.2	51.0	49.2
07/08/20	19:00	15	73.1	53.4	52.3	50.2
07/08/20	19:15	15	57.8	51.8	50.4	48.4
07/08/20	19:30	15	56.2	51.9	50.6	49.2
07/08/20	19:45	15	58.7	52.1	50.8	49.0
07/08/20	20:00	15	66.5	52.4	51.3	49.2
07/08/20	20:15	15	57.7	53.0	51.6	49.8

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
07/08/20	20:30	15	58.6	53.4	51.9	49.4
07/08/20	20:45	15	56.3	51.6	49.8	47.8
07/08/20	21:00	15	58.2	49.6	48.7	47.0
07/08/20	21:15	15	53.6	50.1	48.8	47.3
07/08/20	21:30	15	53.9	50.3	48.8	47.2
07/08/20	21:45	15	57.3	50.6	49.3	47.3
07/08/20	22:00	15	59.4	50.4	48.6	46.2
07/08/20	22:15	15	57.1	50.6	48.8	46.3
07/08/20	22:30	15	60.9	52.4	50.0	46.6
07/08/20	22:45	15	59.6	50.5	49.1	47.0
	Arith. Average		61.3	53.3	51.7	49.4
	Log. Average		65.4	54.4	52.4	49.9
	Minimum		53.6	49.0	47.9	46.1
	Maximum		75.5	65.4	60.5	53.3
07/08/20	23:00	15	53.2	50.2	48.7	47.2
07/08/20	23:15	15	67.1	52.1	51.5	47.0
07/08/20	23:30	15	55.7	50.9	48.7	45.5
07/08/20	23:45	15	59.1	50.2	48.5	45.9
08/08/20	00:00	15	55.5	49.3	47.7	45.8
08/08/20	00:15	15	59.4	50.3	48.5	46.2
08/08/20	00:30	15	55.6	49.3	47.4	44.7
08/08/20	00:45	15	59.2	49.8	48.0	45.1
08/08/20	01:00	15	63.8	48.7	47.7	44.1
08/08/20	01:15	15	53.4	48.2	46.3	44.3
08/08/20	01:30	15	54.4	47.5	45.6	43.6
08/08/20	01:45	15	52.6	46.7	45.1	43.7
08/08/20	02:00	15	52.9	46.8	45.0	43.5
08/08/20	02:15	15	50.5	45.6	44.6	43.4
08/08/20	02:30	15	48.3	44.8	44.0	43.1
08/08/20	02:45	15	53.2	46.5	45.1	43.7
08/08/20	03:00	15	53.2	46.7	45.5	44.1
08/08/20	03:15	15	55.2	47.0	45.7	44.4
08/08/20	03:30	15	52.3	46.9	45.6	44.3
08/08/20	03:45	15	54.0	48.3	46.3	44.3
08/08/20	04:00	15	51.0	47.3	45.9	44.5
08/08/20	04:15	15	50.6	46.8	45.5	44.1
08/08/20	04:30	15	51.9	47.2	45.8	44.4
08/08/20	04:45	15	54.4	45.7	44.8	43.9
08/08/20	05:00	15	52.7	46.6	45.4	44.0
08/08/20	05:15	15	54.1	49.8	47.5	44.7
08/08/20	05:30	15	55.3	50.5	48.4	45.6
08/08/20	05:45	15	62.6	49.9	48.2	45.8
08/08/20	06:00	15	57.2	49.6	48.1	46.1
08/08/20	06:15	15	55.0	47.8	46.7	45.5
08/08/20	06:30	15	59.2	49.3	48.1	46.2

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
08/08/20	06:45	15	59.2	50.7	49.2	47.2
	Arith. Average		55.4	48.3	46.8	44.9
	Log. Average		57.8	48.7	47.2	45.0
	Minimum		48.3	44.8	44.0	43.1
	Maximum		67.1	52.1	51.5	47.2
08/08/20	07:00	15	74.3	51.4	50.5	47.8
08/08/20	07:15	15	56.6	48.6	47.4	46.0
08/08/20	07:30	15	54.9	51.3	49.0	46.3
08/08/20	07:45	15	57.6	48.9	47.5	46.0
08/08/20	08:00	15	57.2	47.8	47.1	45.9
08/08/20	08:15	15	54.7	48.4	47.1	45.6
08/08/20	08:30	15	58.6	48.9	47.0	45.3
08/08/20	08:45	15	55.9	47.2	46.4	45.4
08/08/20	09:00	15	70.0	47.3	48.5	45.3
08/08/20	09:15	15	60.3	47.0	46.4	45.1
08/08/20	09:30	15	52.7	46.8	46.1	45.2
08/08/20	09:45	15	60.2	46.9	45.9	44.7
08/08/20	10:00	15	55.3	47.1	46.2	44.8
08/08/20	10:15	15	71.8	49.5	50.6	44.4
08/08/20	10:30	15	75.5	46.5	52.4	44.6
08/08/20	10:45	15	72.3	53.6	54.2	44.3
08/08/20	11:00	15	74.4	47.6	50.9	44.7
08/08/20	11:15	15	52.2	46.2	45.3	44.4
08/08/20	11:30	15	53.5	47.6	46.3	45.0
08/08/20	11:45	15	61.4	48.0	47.3	44.8
08/08/20	12:00	15	68.8	46.3	47.1	44.4
08/08/20	12:15	15	62.2	48.3	46.7	44.2
08/08/20	12:30	15	60.3	46.1	45.6	44.1
08/08/20	12:45	15	57.0	45.8	45.2	44.0
08/08/20	13:00	15	54.8	46.2	45.5	44.6
08/08/20	13:15	15	56.1	48.4	46.8	45.0
08/08/20	13:30	15	53.2	47.0	45.8	44.5
08/08/20	13:45	15	52.9	46.4	45.4	44.3
08/08/20	14:00	15	55.5	46.2	45.6	44.3
08/08/20	14:15	15	55.2	46.3	45.5	44.4
08/08/20	14:30	15	72.1	46.2	50.2	44.2
08/08/20	14:45	15	62.1	46.7	46.2	44.4
08/08/20	15:00	15	56.8	46.1	45.2	44.0
08/08/20	15:15	15	57.9	46.4	45.2	43.4
08/08/20	15:30	15	69.8	48.7	49.7	43.7
08/08/20	15:45	15	73.6	59.2	54.9	44.2
08/08/20	16:00	15	60.4	52.7	50.8	47.9
08/08/20	16:15	15	69.3	52.9	51.3	48.9
08/08/20	16:30	15	63.1	54.0	52.1	49.9
08/08/20	16:45	15	64.8	52.5	50.8	48.3

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
08/08/20	17:00	15	60.1	52.8	51.2	48.8
08/08/20	17:15	15	62.3	53.1	51.6	49.0
08/08/20	17:30	15	60.6	52.9	51.2	49.2
08/08/20	17:45	15	58.2	52.0	50.5	48.6
08/08/20	18:00	15	57.1	51.0	49.6	47.5
08/08/20	18:15	15	61.7	51.9	50.1	47.4
08/08/20	18:30	15	56.0	50.1	48.6	46.7
08/08/20	18:45	15	54.8	49.4	47.9	46.0
08/08/20	19:00	15	59.7	50.1	48.3	46.2
08/08/20	19:15	15	60.8	48.9	47.8	45.8
08/08/20	19:30	15	52.1	48.6	47.2	45.5
08/08/20	19:45	15	54.4	49.2	47.8	45.9
08/08/20	20:00	15	57.2	48.8	47.4	45.5
08/08/20	20:15	15	57.8	48.4	47.0	45.2
08/08/20	20:30	15	54.4	48.2	46.8	45.2
08/08/20	20:45	15	51.9	46.8	45.8	44.3
08/08/20	21:00	15	69.3	48.4	47.7	44.6
08/08/20	21:15	15	50.9	47.2	45.9	44.6
08/08/20	21:30	15	58.9	47.8	46.1	43.8
08/08/20	21:45	15	52.0	45.6	44.9	43.8
08/08/20	22:00	15	53.8	45.5	44.8	43.7
08/08/20	22:15	15	50.1	45.5	44.8	44.0
08/08/20	22:30	15	52.7	47.0	45.7	44.2
08/08/20	22:45	15	51.1	46.7	45.5	44.2
	Arith. Average		59.6	48.7	47.8	45.4
	Log. Average		65.7	49.8	48.6	45.8
	Minimum		50.1	45.5	44.8	43.4
	Maximum		75.5	59.2	54.9	49.9
08/08/20	23:00	15	63.7	48.4	47.5	44.0
08/08/20	23:15	15	53.3	46.6	45.4	44.1
08/08/20	23:30	15	51.2	45.6	44.7	43.7
08/08/20	23:45	15	53.0	45.0	44.3	43.2
09/08/20	00:00	15	49.7	44.5	43.8	42.8
09/08/20	00:15	15	50.3	44.7	43.9	43.1
09/08/20	00:30	15	47.8	44.0	43.3	42.4
09/08/20	00:45	15	51.6	44.6	43.9	43.2
09/08/20	01:00	15	47.5	44.0	43.4	42.8
09/08/20	01:15	15	50.0	44.0	43.5	42.9
09/08/20	01:30	15	46.7	43.7	43.1	42.5
09/08/20	01:45	15	52.1	44.1	43.4	42.6
09/08/20	02:00	15	48.3	43.6	43.0	42.4
09/08/20	02:15	15	48.7	43.9	43.3	42.6
09/08/20	02:30	15	48.7	44.1	43.4	42.7
09/08/20	02:45	15	50.9	43.9	43.3	42.6
09/08/20	03:00	15	50.5	44.0	43.3	42.6

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
09/08/20	03:15	15	49.7	44.2	43.4	42.5
09/08/20	03:30	15	48.3	44.4	43.7	43.0
09/08/20	03:45	15	48.8	44.3	43.6	42.9
09/08/20	04:00	15	49.9	44.4	43.7	43.0
09/08/20	04:15	15	50.9	44.1	43.4	42.6
09/08/20	04:30	15	47.4	44.4	43.7	43.1
09/08/20	04:45	15	46.1	44.1	43.4	42.7
09/08/20	05:00	15	49.8	44.3	43.7	42.9
09/08/20	05:15	15	64.6	44.6	44.2	43.2
09/08/20	05:30	15	50.7	45.4	44.6	43.7
09/08/20	05:45	15	55.2	45.1	44.5	43.6
09/08/20	06:00	15	60.1	45.2	44.5	43.4
09/08/20	06:15	15	59.7	45.2	44.6	43.7
09/08/20	06:30	15	52.8	45.7	44.9	44.0
09/08/20	06:45	15	53.4	45.5	44.8	43.9
	Arith. Average		51.6	44.7	44.0	43.1
	Log. Average		55.1	44.8	44.1	43.1
	Minimum		46.1	43.6	43.0	42.4
	Maximum		64.6	48.4	47.5	44.1
09/08/20	07:00	15	51.0	45.5	44.7	44.1
09/08/20	07:15	15	59.1	46.8	45.5	44.2
09/08/20	07:30	15	67.2	46.2	46.0	44.3
09/08/20	07:45	15	70.3	46.8	47.0	44.5
09/08/20	08:00	15	63.8	46.8	46.5	44.5
09/08/20	08:15	15	66.2	48.6	47.9	44.6
09/08/20	08:30	15	62.8	46.9	46.2	44.4
09/08/20	08:45	15	58.3	47.6	46.3	44.8
09/08/20	09:00	15	57.7	47.7	46.2	44.6
09/08/20	09:15	15	57.4	47.5	46.3	44.8
09/08/20	09:30	15	68.4	49.2	48.3	44.6
09/08/20	09:45	15	63.7	47.1	47.1	44.4
09/08/20	10:00	15	78.8	47.0	49.0	44.3
09/08/20	10:15	15	70.6	46.2	49.0	44.3
09/08/20	10:30	15	69.6	45.8	47.2	44.2
09/08/20	10:45	15	52.7	45.9	45.1	44.2
09/08/20	11:00	15	55.1	47.1	45.8	44.5
09/08/20	11:15	15	55.7	46.4	45.7	44.8
09/08/20	11:30	15	53.6	47.0	45.9	44.8
09/08/20	11:45	15	51.1	47.1	46.2	45.1
09/08/20	12:00	15	55.4	47.5	46.4	45.1
09/08/20	12:15	15	61.8	49.9	47.8	44.3
09/08/20	12:30	15	60.8	50.0	47.3	44.1
09/08/20	12:45	15	61.3	52.0	48.6	44.6
09/08/20	13:00	15	78.1	48.6	49.2	44.5
09/08/20	13:15	15	72.4	47.9	50.5	45.0

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
09/08/20	13:30	15	74.3	51.3	54.5	45.1
09/08/20	13:45	15	69.3	48.3	48.5	45.7
09/08/20	14:00	15	73.6	48.4	48.2	44.8
09/08/20	14:15	15	75.3	47.9	47.8	44.7
09/08/20	14:30	15	54.2	48.8	47.3	45.6
09/08/20	14:45	15	52.5	48.5	47.2	45.7
09/08/20	15:00	15	53.5	48.3	47.0	45.6
09/08/20	15:15	15	53.3	48.9	47.5	46.0
09/08/20	15:30	15	52.0	47.6	46.5	45.3
09/08/20	15:45	15	54.8	49.7	48.0	45.8
09/08/20	16:00	15	57.0	49.6	48.1	46.1
09/08/20	16:15	15	65.5	49.7	48.6	46.7
09/08/20	16:30	15	58.9	48.9	47.1	44.8
09/08/20	16:45	15	53.0	48.0	46.7	45.3
09/08/20	17:00	15	60.0	48.0	46.6	44.8
09/08/20	17:15	15	54.0	46.9	45.9	44.7
09/08/20	17:30	15	72.8	48.5	49.7	44.6
09/08/20	17:45	15	53.1	47.8	46.5	45.0
09/08/20	18:00	15	60.0	49.1	47.5	45.5
09/08/20	18:15	15	59.1	48.0	46.7	45.0
09/08/20	18:30	15	55.7	47.5	46.6	45.3
09/08/20	18:45	15	53.2	47.5	46.2	44.7
09/08/20	19:00	15	61.4	47.8	47.3	44.8
09/08/20	19:15	15	57.5	46.6	45.7	44.6
09/08/20	19:30	15	55.8	46.4	45.5	44.4
09/08/20	19:45	15	55.0	46.4	45.4	44.4
09/08/20	20:00	15	52.6	47.0	45.8	44.2
09/08/20	20:15	15	55.4	46.9	45.8	44.7
09/08/20	20:30	15	56.0	47.2	46.0	44.6
09/08/20	20:45	15	51.3	47.0	45.9	44.6
09/08/20	21:00	15	50.0	46.4	45.4	44.2
09/08/20	21:15	15	48.4	45.8	44.9	44.0
09/08/20	21:30	15	50.8	46.0	45.1	44.1
09/08/20	21:45	15	49.9	45.8	44.8	43.8
09/08/20	22:00	15	52.6	46.3	45.3	44.1
09/08/20	22:15	15	50.9	45.7	44.7	43.7
09/08/20	22:30	15	48.3	45.1	44.4	43.6
09/08/20	22:45	15	50.1	44.9	44.1	43.3
	Arith. Average		59.1	47.6	46.8	44.7
	Log. Average		67.3	47.8	47.2	44.8
	Minimum		48.3	44.9	44.1	43.3
	Maximum		78.8	52.0	54.5	46.7
09/08/20	23:00	15	53.2	45.0	44.1	43.2
09/08/20	23:15	15	47.1	44.8	44.0	43.1
09/08/20	23:30	15	48.0	44.8	43.9	42.8

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
09/08/20	23:45	15	54.1	44.3	43.4	42.5
10/08/20	00:00	15	50.2	44.0	43.2	42.4
10/08/20	00:15	15	47.8	44.0	43.3	42.7
10/08/20	00:30	15	55.8	43.7	43.0	42.3
10/08/20	00:45	15	55.9	44.5	43.3	41.9
10/08/20	01:00	15	47.0	43.3	42.5	41.8
10/08/20	01:15	15	49.6	43.7	42.8	42.1
10/08/20	01:30	15	49.1	43.4	42.6	41.8
10/08/20	01:45	15	49.4	43.9	43.0	42.2
10/08/20	02:00	15	49.6	43.4	42.7	42.0
10/08/20	02:15	15	49.6	43.8	42.9	42.0
10/08/20	02:30	15	45.8	43.0	42.5	41.9
10/08/20	02:45	15	51.4	43.3	42.7	42.0
10/08/20	03:00	15	51.6	43.5	42.8	41.9
10/08/20	03:15	15	49.4	43.5	42.8	42.1
10/08/20	03:30	15	47.1	44.0	43.1	42.3
10/08/20	03:45	15	55.0	44.4	43.4	42.4
10/08/20	04:00	15	52.8	44.0	43.2	42.3
10/08/20	04:15	15	50.1	45.2	43.9	42.5
10/08/20	04:30	15	48.6	44.0	43.2	42.3
10/08/20	04:45	15	53.5	44.7	43.7	42.7
10/08/20	05:00	15	54.2	45.0	43.9	42.7
10/08/20	05:15	15	51.5	45.2	44.3	43.4
10/08/20	05:30	15	53.8	46.6	45.4	44.0
10/08/20	05:45	15	62.2	47.6	46.8	44.9
10/08/20	06:00	15	63.7	49.8	48.3	46.0
10/08/20	06:15	15	64.6	49.6	48.4	46.5
10/08/20	06:30	15	55.4	49.7	48.5	47.0
10/08/20	06:45	15	65.9	50.5	49.6	47.5
	Arith. Average		52.6	45.0	44.1	43.0
	Log. Average		56.7	45.6	44.6	43.4
	Minimum		45.8	43.0	42.5	41.8
	Maximum		65.9	50.5	49.6	47.5
10/08/20	07:00	15	55.4	50.9	49.8	48.5
10/08/20	07:15	15	57.3	51.6	50.1	48.2
10/08/20	07:30	15	59.7	51.1	50.1	48.8
10/08/20	07:45	15	64.9	51.4	50.1	47.9
10/08/20	08:00	15	54.0	49.9	48.5	47.1
10/08/20	08:15	15	72.9	48.9	49.7	46.5
10/08/20	08:30	15	60.4	49.8	48.2	46.0
10/08/20	08:45	15	57.7	48.4	47.3	45.8
10/08/20	09:00	15	52.5	48.1	46.7	45.1
10/08/20	09:15	15	56.4	49.6	47.5	45.4
10/08/20	09:30	15	57.1	50.2	48.2	45.6
10/08/20	09:45	15	54.7	48.3	47.2	45.6

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
10/08/20	10:00	15	70.4	47.7	46.7	44.7
10/08/20	10:15	15	69.2	50.3	48.5	45.3
10/08/20	10:30	15	57.0	50.9	49.2	47.0
10/08/20	10:45	15	57.3	51.2	49.7	47.8
10/08/20	11:00	15	56.5	50.7	49.4	47.9
10/08/20	11:15	15	59.4	49.9	48.5	46.7
10/08/20	11:30	15	54.7	50.1	48.7	47.0
10/08/20	11:45	15	53.0	48.9	47.8	46.5
10/08/20	12:00	15	58.2	50.3	49.0	47.5
10/08/20	12:15	15	59.4	51.4	50.0	48.2
10/08/20	12:30	15	71.9	51.6	50.9	48.4
10/08/20	12:45	15	71.9	51.7	51.9	48.6
10/08/20	13:00	15	67.5	51.3	50.3	48.6
10/08/20	13:15	15	76.4	52.9	52.5	48.6
10/08/20	13:30	15	72.7	51.6	52.7	47.7
10/08/20	13:45	15	55.5	51.7	50.4	48.8
10/08/20	14:00	15	57.5	52.2	50.7	48.9
10/08/20	14:15	15	65.5	52.9	51.6	49.2
10/08/20	14:30	15	55.9	53.1	51.5	49.5
10/08/20	14:45	15	58.2	53.2	51.2	49.0
10/08/20	15:00	15	57.1	52.8	51.5	49.9
10/08/20	15:15	15	63.0	54.0	52.2	49.9
10/08/20	15:30	15	57.5	53.1	51.7	50.1
10/08/20	15:45	15	57.1	53.1	51.3	49.1
10/08/20	16:00	15	57.3	53.8	52.3	50.6
10/08/20	16:15	15	61.1	54.4	52.9	51.0
10/08/20	16:30	15	59.6	53.8	52.3	50.2
10/08/20	16:45	15	69.0	54.5	53.3	51.6
10/08/20	17:00	15	73.3	55.4	54.4	52.0
10/08/20	17:15	15	61.0	55.3	54.0	52.3
10/08/20	17:30	15	74.7	56.3	55.9	52.0
10/08/20	17:45	15	58.3	54.6	53.2	51.6
10/08/20	18:00	15	60.5	54.3	53.0	51.5
10/08/20	18:15	15	67.8	54.8	53.5	51.4
10/08/20	18:30	15	65.6	54.3	52.8	50.5
10/08/20	18:45	15	61.4	53.4	51.8	49.8
10/08/20	19:00	15	70.9	53.9	53.1	49.3
10/08/20	19:15	15	65.5	53.1	51.5	48.7
10/08/20	19:30	15	64.6	52.2	50.7	48.6
10/08/20	19:45	15	57.0	51.9	50.2	47.9
10/08/20	20:00	15	59.9	51.3	49.9	47.8
10/08/20	20:15	15	56.7	51.5	49.9	47.7
10/08/20	20:30	15	72.4	50.9	49.8	47.3
10/08/20	20:45	15	57.7	50.4	48.9	46.8
10/08/20	21:00	15	60.1	49.4	48.5	46.4
10/08/20	21:15	15	53.5	49.0	47.8	46.4

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
10/08/20	21:30	15	56.0	49.2	47.7	46.0
10/08/20	21:45	15	56.9	49.8	48.6	46.8
10/08/20	22:00	15	59.2	49.2	47.9	46.0
10/08/20	22:15	15	55.7	48.8	47.2	45.3
10/08/20	22:30	15	52.3	48.8	47.3	45.5
10/08/20	22:45	15	57.6	48.2	47.2	44.9
	Arith. Average		61.1	51.5	50.3	48.1
	Log. Average		66.4	52.0	50.8	48.6
	Minimum		52.3	47.7	46.7	44.7
	Maximum		76.4	56.3	55.9	52.3
10/08/20	23:00	15	64.5	47.6	47.9	44.1
10/08/20	23:15	15	52.6	48.0	46.2	44.0
10/08/20	23:30	15	53.0	47.6	45.6	43.8
10/08/20	23:45	15	59.6	50.6	48.2	44.4
11/08/20	00:00	15	53.2	47.2	45.3	43.1
11/08/20	00:15	15	53.4	48.5	46.3	43.7
11/08/20	00:30	15	54.1	47.8	45.9	43.6
11/08/20	00:45	15	53.3	46.8	45.0	43.0
11/08/20	01:00	15	52.0	46.5	44.9	43.3
11/08/20	01:15	15	52.2	45.6	44.2	42.9
11/08/20	01:30	15	56.1	45.9	44.4	42.7
11/08/20	01:45	15	54.6	46.6	44.4	42.3
11/08/20	02:00	15	62.4	47.2	45.3	43.0
11/08/20	02:15	15	57.1	45.6	43.8	42.1
11/08/20	02:30	15	60.2	45.1	44.0	42.8
11/08/20	02:45	15	55.1	45.1	43.8	42.6
11/08/20	03:00	15	54.6	45.6	44.2	42.5
11/08/20	03:15	15	51.1	45.7	44.1	42.5
11/08/20	03:30	15	51.3	47.1	45.5	43.7
11/08/20	03:45	15	51.4	47.2	45.4	43.3
11/08/20	04:00	15	53.0	46.2	44.8	43.4
11/08/20	04:15	15	52.5	45.6	44.3	43.0
11/08/20	04:30	15	50.5	47.2	45.8	44.2
11/08/20	04:45	15	52.2	48.3	46.6	44.6
11/08/20	05:00	15	53.2	47.9	46.4	44.6
11/08/20	05:15	15	56.4	48.6	47.2	45.2
11/08/20	05:30	15	64.3	51.3	49.8	47.3
11/08/20	05:45	15	61.9	52.1	50.3	48.1
11/08/20	06:00	15	65.2	54.4	52.1	48.7
11/08/20	06:15	15	57.7	53.5	52.1	50.3
11/08/20	06:30	15	61.9	55.4	53.7	51.7
11/08/20	06:45	15	56.3	53.9	52.6	50.9
	Arith. Average		55.8	48.2	46.6	44.5
	Log. Average		58.3	49.3	47.7	45.6
	Minimum		50.5	45.1	43.8	42.1

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.			
			$L_{Amax,F}$	$L_{A10,15\ min}$	$L_{Aeq,15\ min}$	$L_{A90,15\ min}$
	Maximum		65.2	55.4	53.7	51.7
11/08/20	07:00	15	71.6	55.5	54.3	52.1
11/08/20	07:15	15	64.1	55.2	53.9	52.3
11/08/20	07:30	15	57.4	55.1	53.8	52.0
11/08/20	07:45	15	59.9	53.5	52.2	50.7
11/08/20	08:00	15	68.7	51.5	50.2	48.0
11/08/20	08:15	15	57.7	49.3	48.1	46.4
11/08/20	08:30	15	61.5	48.8	47.8	45.6
11/08/20	08:45	15	59.3	48.4	47.1	45.0
11/08/20	09:00	13	65.3	55.2	51.9	44.6
	Arith. Average		62.8	52.5	51.0	48.5
	Log. Average		65.5	53.3	51.8	49.6
	Minimum		57.4	48.4	47.1	44.6
	Maximum		71.6	55.5	54.3	52.3

TABLE B4 (CTD): UNATTENDED NOISE SURVEY RESULTS AT LT3, WEDNESDAY 29TH JULY TO TUESDAY 11TH AUGUST 2020

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Monitoring Location	Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.				Comments
				$L_{Amax,F}$	$L_{A10,T}$	$L_{Aeq,T}$	$L_{A90,T}$	
ST1	Weds 29/07/2020	13:50:00	5	59.5	54.4	52.2	49.1	Distant road traffic on A264 (51 dBA) dominating ambient and background level.
		13:55:00	5	55.7	51.8	50.2	48.2	Distant road traffic (50 dBA). HGV on Langhurst Wood Rd. Faint wildlife (insect) noise.
		14:00:00	5	61.0	56.2	54.6	52.4	Road traffic consistent (52 dBA). Faint foliage rustling.
			Cumul	*61.0*	*54.1*	*52.7*	*49.9*	
ST2		14:10:00	5	58.6	53.1	51.5	49.6	Distant road traffic (49 dBA)
		14:15:00	5	62.5	56.2	53.7	49.6	1 x passenger train (61 dBA); 1 HGV on Langhurst Wood Rd; distant road traffic (49 dBA).
		14:20:00	5	61.4	52.3	50.8	48.4	Distant road traffic (49 dBA); infrequent birds (51 dBA); 1 no. car on Mercer Road.
			Cumul	*62.5*	*53.9*	*52.2*	*49.2*	
ST3		14:45:00	5	62.6	54.2	52.0	49.6	Distant road traffic on A264 (48 dBA) dominating L90; infrequent birdsong;
		14:50:00	5	66.5	55.0	52.8	48.6	Distant road traffic (48 dBA); occasional vehicle on local roads (50 dBA).
		14:55:00	5	62.3	55.3	53.3	50.9	Distant road traffic on A264 (49 dBA); HGV on Mercer Rd (55 dBA).
			Cumul	*66.5*	*54.8*	*52.7*	*49.7*	
ST1		15:10:00	5	60.4	57.4	55.6	53.0	Road traffic on A264 consistent (53 - 56 dBA)
		15:15:00	5	70.2	58.8	58.0	53.9	1 no. train (dominating L_{Amax} level); road traffic.
		15:20:00	5	73.8	59.2	58.5	54.8	Road traffic (55 dBA); one very loud car.
			Cumul	*73.8*	*58.5*	*57.5*	*53.9*	
ST2		15:30:00	5	61.8	54.7	53.3	51.4	Road traffic (51 dBA); occasional cars on Mercer Rd (53 dBA)
		15:35:00	5	58.0	55.2	53.5	51.1	Infrequent industrial traffic on Mercer Rd (55 dBA); background L90 dominated by distant traffic.
		15:40:00	5	64.6	58.4	55.9	51.5	Road traffic (51 dBA); birds; 1 no. train (63 dBA).
			Cumul	*64.6*	*56.1*	*54.4*	*51.3*	
ST3		15:50:03	5	62.7	56.5	54.6	52.2	Distant road driving L90 (52 dBA); 1 loud motorbike (57 dBA);
		15:55:03	5	62.4	55.9	53.9	51.1	Truck on Langhurst Wood Rd (55 dBA); distant car horn.
		16:00:03	5	60.2	55.2	53.4	51.0	1 no. jet aircraft mostly masked by traffic noise.
			Cumul	*62.7*	*55.9*	*54.0*	*51.4*	

TABLE B5: ATTENDED DAYTIME NOISE SURVEY RESULTS, WEDNESDAY 29TH JULY 2020

Monitoring Location	Date of Meas.	Start Time	Dur. (mins)	Measured Noise Levels, dB re. 2 x 10^{-5} Pa.				Comments
				$L_{Amax,F}$	$L_{A10,T}$	$L_{Aeq,T}$	$L_{A90,T}$	
ST1	Weds 29/07/2020	16:15:03	5	67.1	59.4	57.4	54.0	Road traffic (54 dBA) dominating L90 levels; 1 no. train.
		16:20:03	5	62.1	58.6	56.8	54.7	van on mercer road (56 dBA); faint birdsong.
		16:25:03	5	61.7	58.3	56.6	54.0	Consistent road traffic.
			Cumul	*67.1*	*58.8*	*56.9*	*54.2*	
ST2		16:35:00	5	59.5	55.6	54.0	52.1	Traffic consistent (53 - 54 dBA); one motorbike (55 dBA).
		16:40:00	5	73.2	58.0	57.0	53.2	1 no. subjectively v. loud motorbike (70 dBA). 1 no. passenger train (64 dBA).
		16:45:00	5	62.5	56.9	54.8	51.7	Distant road traffic (53 dB).
			Cumul	*73.2*	*56.8*	*55.5*	*52.3*	
ST3		17:00:06	5	59.5	54.9	52.9	50.4	Distant road traffic (52 dBA); occasional vehicle on local roads.
		17:05:06	5	59.3	56.1	54.1	51.4	Infrequent birds (52 dBA); road traffic consistent (51 dBA) driving L90 levels; light foliage rustle
		17:10:06	5	58.9	55.9	54.1	51.8	Distant road traffic (51 - 52 dBA); infrequent local traffic; distant propeller plane faintly audible.
			Cumul	*59.5*	*55.6*	*53.7*	*51.2*	Road traffic (54 dBA) dominating L90 levels; 1 no. train.

TABLE B5 (CTD): ATTENDED DAYTIME NOISE SURVEY RESULTS, WEDNESDAY 29TH JULY 2020

Company	Source	Distance (m)	Duration (mm:ss)	dB $L_{Aeq,T}$[1]	SPL, dB $L_{eq,T}$ 1/1-Octave Band Frequency[1]								
					31.5	63	125	250	500	1k	2k	4k	8k
Britaniacrest Recycling	Breakout from industrial building	10	02:15	63.2	89.9	96.7	92.2	88.8	88.1	86.6	84.0	77.6	67.4
	HGV on weighbridge	15	02:00	65.1	89.4	105.9	97.2	96.7	94.7	90.9	88.8	80.9	74.1
	Truck Pass-by	20	00:25	67.7	107.1	107.1	103.0	103.5	99.7	96.6	92.0	84.1	76.7
	Dumper truck	25	01:30	61.0	94.0	100.6	97.5	96.1	94.4	92.6	88.4	81.2	74.2
	Luton Van	25	00:25	61.8	98.7	90.5	80.4	79.2	85.5	85.4	85.1	75.3	67.9
	JCB Grabber	25	02:50	65.5	100.1	103.3	101.4	100.1	98.6	95.6	95.3	88.9	76.9
Wienerberger	Breakout from building (north)	20	01:05	64.8	94.2	101.8	99.7	99.7	98.2	92.5	89.2	84.4	73.6
	Forklift trucks (north Yard)	20	01:00	68.1	95.0	104.5	99.4	100.6	101.0	96.7	94.2	88.2	77.1
	Dumper Truck	20	04:00	62.2	93.4	97.6	92.7	92.6	92.2	91.7	89.8	82.6	76.9
	Exhaust/Extract Flue	30	13:20	54.5	88.2	98.2	92.4	90.6	88.0	87.5	83.6	82.6	78.5
	Condenser Unit	5	02:05	55.1	88.2	88.8	83.0	76.0	76.3	72.7	62.3	58.2	52.7
	Breakout from building South #1	8	07:05	50.3	92.9	91.3	77.0	76.9	75.2	71.8	60.2	59.2	51.8
	Breakout from building South #2	5	05:00	56.2	87.8	89.1	79.7	76.7	77.0	74.4	65.6	60.8	52.8
	Breakout from building South #3	5	05:05	52.1	88.2	88.0	70.3	74.8	73.9	67.7	60.6	57.6	49.3
Panel 2 Paint	Breakout from East façade during angle grinding	2.5	02:00	54.5	67.9	67.9	67.9	66.7	69.6	60.4	63.8	60.3	47.9
RJB Commercials	Large Van	5	01:50	59.7	92.8	79.4	78.1	78.1	76.1	77.1	74.8	71.7	66.2
	Wheel Gun	3	01:40	86.9	82.0	76.5	75.9	72.8	77.1	83.8	93.9	99.8	101.5
	Van	5	01:25	62.5	84.2	83.6	78.8	78.1	79.9	80.4	78.2	73.0	64.5
	Breakout from workshop	10	02:15	62.1	91.8	89.9	85.1	82.0	80.6	78.1	88.0	72.8	67.9
	Truck	10	03:35	64.4	99.4	96.1	92.9	88.9	88.0	86.8	87.4	77.8	69.1
Greens of Horsham	Breakout at east façade	10	15:25	48.3	76.6	82.0	71.3	70.0	75.0	73.6	64.3	54.6	54.6

TABLE B6: ATTENDED SOURCE TERM NOISE SURVEY RESULTS, TUESDAY 11TH AUGUST 2020

Note: [1] $L_{eq,T}$ noise levels corrected for the influence of underlying residual ambient sound environment

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
A01	GND	57	42	<25	50.4	35	<25
A01	1st	59	44	26	51.7	37	<25
A02	GND	56	41	<25	49.1	34	<25
A02	1st	58	43	<25	50.5	36	<25
A03	GND	56	41	<25	48.9	34	<25
A03	1st	57	42	<25	50.1	35	<25
A04	GND	55	40	<25	47.5	33	<25
A04	1st	56	41	<25	49	34	<25
A05	GND	54	39	<25	47.4	32	<25
A05	1st	56	41	<25	48.6	34	<25
A06	GND	54	39	<25	46.6	32	<25
A06	1st	55	40	<25	47.7	33	<25
A07	GND	54	39	<25	46.5	32	<25
A07	1st	55	40	<25	47.8	33	<25
A08	GND	57	42	<25	50.1	35	<25
A08	1st	58	43	25	51.2	36	<25
A09	GND	53	38	<25	45.6	31	<25
A09	1st	55	40	<25	47.6	33	<25
A10	GND	52	37	<25	44.5	30	<25
A10	1st	54	39	<25	46.5	32	<25
A11	GND	57	42	<25	50.1	35	<25
A11	1st	58	43	25	51.1	36	<25
A12	GND	57	42	<25	50.1	35	<25
A12	1st	58	43	25	51.1	36	<25
A13	GND	57	42	<25	49.9	35	<25
A13	1st	58	43	<25	50.7	36	<25
A14	GND	55	40	<25	48.4	33	<25
A14	1st	57	42	<25	49.7	35	<25
A15	GND	52	37	<25	45.1	30	<25
A15	1st	54	39	<25	47.2	32	<25
A16	GND	51	36	<25	44.4	29	<25
A16	1st	54	39	<25	46.7	32	<25
A17	GND	50	35	<25	42.9	28	<25
A17	1st	53	38	<25	45.7	31	<25
A18	GND	52	37	<25	44.9	30	<25
A18	1st	54	39	<25	47.4	32	<25
B01	GND	59	44	26	52.2	37	<25
B01	1st	60	45	27	53.4	38	<25
B02	GND	59	44	26	52.5	38	<25
B02	1st	61	46	28	53.6	39	<25
B03	GND	59	44	26	52.1	37	<25
B03	1st	60	45	27	53.1	38	<25

TABLE B7: SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
B04	GND	57	42	<25	50.5	36	<25
B04	1st	58	43	25	51.6	37	<25
B05	GND	56	41	<25	48.9	34	<25
B05	1st	57	42	<25	50.1	35	<25
B06	GND	52	37	<25	45.5	31	<25
B06	1st	54	39	<25	47.3	32	<25
B07	GND	52	37	<25	44.9	30	<25
B07	1st	54	39	<25	46.7	32	<25
B08	GND	57	42	<25	50.2	35	<25
B08	1st	58	43	<25	51	36	<25
B09	GND	56	41	<25	49.3	34	<25
B09	1st	57	42	<25	50.1	35	<25
B10	GND	54	39	<25	47.2	32	<25
B10	1st	56	41	<25	48.8	34	<25
B11	GND	53	38	<25	46	31	<25
B11	1st	55	40	<25	47.9	33	<25
B12	GND	51	36	<25	44.2	29	<25
B12	1st	53	38	<25	46	31	<25
B13	GND	56	41	<25	49.7	35	<25
B13	1st	57	42	<25	50.5	36	<25
B14	GND	51	36	<25	44.4	29	<25
B14	1st	53	38	<25	46.4	31	<25
B15	GND	52	37	<25	44.6	30	<25
B15	1st	54	39	<25	46.7	32	<25
B16	GND	51	36	<25	43.9	29	<25
B16	1st	53	38	<25	46.3	31	<25
B17	GND	50	35	<25	42.8	28	<25
B17	1st	52	37	<25	45.4	30	<25
B18	GND	56	41	<25	49.1	34	<25
B18	1st	56	41	<25	49.8	35	<25
B19	GND	56	41	<25	49.3	34	<25
B19	1st	56	41	<25	49.9	35	<25
B20	GND	54	39	<25	47.7	33	<25
B20	1st	55	40	<25	48.7	34	<25
B21	GND	51	36	<25	44.4	29	<25
B21	1st	53	38	<25	46.3	31	<25
B22	GND	51	36	<25	44	29	<25
B22	1st	53	38	<25	46.1	31	<25
B23	GND	52	37	<25	44.7	30	<25
B23	1st	53	38	<25	46.4	31	<25
C01	GND	56	41	<25	49	34	<25
C01	1st	57	42	<25	49.9	35	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
C02	GND	56	41	<25	49	34	<25
C02	1st	57	42	<25	49.7	35	<25
C03	GND	56	41	<25	49.1	34	<25
C03	1st	57	42	<25	49.8	35	<25
C04	GND	56	41	<25	49.3	34	<25
C04	1st	57	42	<25	49.9	35	<25
C05	GND	56	41	<25	49.1	34	<25
C05	1st	57	42	<25	49.7	35	<25
C06	GND	56	41	<25	48.9	34	<25
C06	1st	57	42	<25	49.5	35	<25
C07	GND	52	37	<25	45.3	30	<25
C07	1st	53	38	<25	46.1	31	<25
C08	GND	50	35	<25	43.2	28	<25
C08	1st	52	37	<25	45.1	30	<25
C09	GND	49	34	<25	42.2	27	<25
C09	1st	51	36	<25	44.4	29	<25
C10	GND	50	35	<25	43.1	28	<25
C10	1st	53	38	<25	45.6	31	<25
C11	GND	50	35	<25	42.7	28	<25
C11	1st	53	38	<25	45.6	31	<25
C12	GND	50	35	<25	42.5	28	<25
C12	1st	53	38	<25	45.7	31	<25
C13	GND	51	36	<25	43.6	29	<25
C13	1st	53	38	<25	46	31	<25
C14	GND	51	36	<25	43.9	29	<25
C14	1st	53	38	<25	45.9	31	<25
C15	GND	48	33	<25	40.8	26	<25
C15	1st	51	36	<25	43.9	29	<25
C16	GND	50	35	<25	42.8	28	<25
C16	1st	52	37	<25	44.7	30	<25
C17	GND	50	35	<25	43.3	28	<25
C17	1st	52	37	<25	45.1	30	<25
C18	GND	52	37	<25	44.5	30	<25
C18	1st	53	38	<25	46.1	31	<25
C19	GND	51	36	<25	44.4	29	<25
C19	1st	53	38	<25	46	31	<25
C20	GND	53	38	<25	45.9	31	<25
C20	1st	54	39	<25	47.1	32	<25
D01	GND	54	39	<25	46.5	32	<25
D01	1st	54	39	<25	47.3	32	<25
D02	GND	53	38	<25	45.5	31	<25
D02	1st	53	38	<25	46.5	32	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
D03	GND	48	33	<25	41	26	<25
D03	1st	50	35	<25	42.7	28	<25
D04	GND	49	34	<25	42.4	27	<25
D04	1st	51	36	<25	44.4	29	<25
D05	GND	51	36	<25	43.7	29	<25
D05	1st	53	38	<25	45.5	31	<25
D06	GND	51	36	<25	44.2	29	<25
D06	1st	53	38	<25	46	31	<25
D07	GND	51	36	<25	44.1	29	<25
D07	1st	53	38	<25	45.9	31	<25
D08	GND	51	36	<25	44.2	29	<25
D08	1st	53	38	<25	46	31	<25
D09	GND	51	36	<25	44.2	29	<25
D09	1st	53	38	<25	46	31	<25
D10	GND	49	34	<25	42.1	27	<25
D10	1st	51	36	<25	44.4	29	<25
D11	GND	49	34	<25	41.7	27	<25
D11	1st	51	36	<25	44.3	29	<25
D12	GND	49	34	<25	41.5	27	<25
D12	1st	51	36	<25	43.7	29	<25
D13	GND	48	33	<25	41	26	<25
D13	1st	51	36	<25	43.6	29	<25
D14	GND	47	32	<25	40.3	25	<25
D14	1st	51	36	<25	43.5	29	<25
D15	GND	49	34	<25	41.5	27	<25
D15	1st	51	36	<25	44.1	29	<25
D16	GND	47	32	<25	40	25	<25
D16	1st	50	35	<25	42.7	28	<25
D17	GND	46	31	<25	38.6	<25	<25
D17	1st	48	33	<25	41.3	26	<25
D18	GND	48	33	<25	41.1	26	<25
D18	1st	51	36	<25	43.7	29	<25
D19	GND	46	31	<25	38.8	<25	<25
D19	1st	49	34	<25	42.2	27	<25
D20	GND	46	31	<25	39.1	<25	<25
D20	1st	50	35	<25	42.5	28	<25
D21	GND	48	33	<25	40.8	26	<25
D21	1st	51	36	<25	43.5	29	<25
D22	GND	46	31	<25	39.3	<25	<25
D22	1st	49	34	<25	42.3	27	<25
D23	GND	46	31	<25	39.3	<25	<25
D23	1st	49	34	<25	41.9	27	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
D24	GND	47	32	<25	39.7	<25	<25
D24	1st	50	35	<25	42.7	28	<25
D25	GND	47	32	<25	39.7	<25	<25
D25	1st	50	35	<25	42.7	28	<25
D26	GND	46	31	<25	39.3	<25	<25
D26	1st	49	34	<25	42.5	28	<25
D27	GND	46	31	<25	38.8	<25	<25
D27	1st	49	34	<25	42.4	27	<25
D28	GND	48	33	<25	40.6	26	<25
D28	1st	51	36	<25	43.5	29	<25
D29	GND	48	33	<25	41.2	26	<25
D29	1st	51	36	<25	43.6	29	<25
D30	GND	49	34	<25	41.6	27	<25
D30	1st	51	36	<25	44	29	<25
D31	GND	48	33	<25	41	26	<25
D31	1st	50	35	<25	42.8	28	<25
D32	GND	50	35	<25	42.8	28	<25
D32	1st	52	37	<25	44.7	30	<25
D33	GND	50	35	<25	42.7	28	<25
D33	1st	51	36	<25	44.2	29	<25
D34	GND	51	36	<25	44.4	29	<25
D34	1st	53	38	<25	45.7	31	<25
E01	GND	53	38	<25	45.9	31	<25
E01	1st	54	39	<25	47	32	<25
E02	GND	52	37	<25	45.2	30	<25
E02	1st	53	38	<25	46.6	32	<25
E03	GND	51	36	<25	44.7	30	<25
E03	1st	53	38	<25	46.2	31	<25
E04	GND	51	36	<25	44.1	29	<25
E04	1st	53	38	<25	46	31	<25
E05	GND	51	36	<25	43.9	29	<25
E05	1st	53	38	<25	45.9	31	<25
E06	GND	46	31	<25	39.8	<25	<25
E06	1st	49	34	<25	42.3	27	<25
E07	GND	47	32	<25	40.3	25	<25
E07	1st	50	35	<25	42.7	28	<25
E08	GND	47	32	<25	39.6	<25	<25
E08	1st	49	34	<25	42.3	27	<25
E09	GND	47	32	<25	39.7	<25	<25
E09	1st	50	35	<25	42.6	28	<25
E10	GND	47	32	<25	40.2	25	<25
E10	1st	50	35	<25	42.8	28	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
E11	GND	47	32	<25	40.2	25	<25
E11	1st	50	35	<25	42.8	28	<25
E12	GND	51	36	<25	43.7	29	<25
E12	1st	53	38	<25	45.8	31	<25
E13	GND	51	36	<25	43.7	29	<25
E13	1st	53	38	<25	45.9	31	<25
E14	GND	51	36	<25	43.7	29	<25
E14	1st	53	38	<25	45.9	31	<25
E15	GND	51	36	<25	44	29	<25
E15	1st	53	38	<25	45.9	31	<25
E16	GND	51	36	<25	44	29	<25
E16	1st	53	38	<25	46	31	<25
E17	GND	48	33	<25	41.1	26	<25
E17	1st	51	36	<25	43.6	29	<25
E18	GND	47	32	<25	39.6	<25	<25
E18	1st	50	35	<25	42.8	28	<25
E19	GND	46	31	<25	39.4	<25	<25
E19	1st	49	34	<25	42.4	27	<25
E20	GND	47	32	<25	39.9	<25	<25
E20	1st	50	35	<25	42.9	28	<25
E21	GND	47	32	<25	40.3	25	<25
E21	1st	50	35	<25	43.2	28	<25
E22	GND	47	32	<25	40.2	25	<25
E22	1st	50	35	<25	42.7	28	<25
F01	GND	55	40	<25	48.5	34	<25
F01	1st	55	40	<25	49	34	<25
F02	GND	54	39	<25	47.5	33	<25
F02	1st	55	40	<25	48.2	33	<25
F03	GND	53	38	<25	46.8	32	<25
F03	1st	54	39	<25	47.7	33	<25
F04	GND	50	35	<25	43.1	28	<25
F04	1st	51	36	<25	44.5	30	<25
F05	GND	50	35	<25	43.2	28	<25
F05	1st	51	36	<25	44.5	30	<25
F06	GND	51	36	<25	44.7	30	<25
F06	1st	52	37	<25	45.7	31	<25
F07	GND	53	38	<25	46.8	32	<25
F07	1st	54	39	<25	47.3	32	<25
F08	GND	51	36	<25	44.4	29	<25
F08	1st	52	37	<25	45.4	30	<25
F09	GND	48	33	<25	41.4	26	<25
F09	1st	50	35	<25	43.4	28	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
F10	GND	52	37	<25	45.4	30	<25
F10	1st	53	38	<25	46.3	31	<25
F11	GND	47	32	<25	40.4	25	<25
F11	1st	49	34	<25	42.1	27	<25
F12	GND	46	31	<25	39.4	<25	<25
F12	1st	48	33	<25	41.4	26	<25
F13	GND	46	31	<25	39.4	<25	<25
F13	1st	48	33	<25	41.5	27	<25
F14	GND	47	32	<25	40.5	26	<25
F14	1st	50	35	<25	42.9	28	<25
F15	GND	46	31	<25	39	<25	<25
F15	1st	49	34	<25	41.5	27	<25
F16	GND	47	32	<25	39.8	<25	<25
F16	1st	50	35	<25	42.6	28	<25
F17	GND	47	32	<25	40.5	26	<25
F17	1st	50	35	<25	43.1	28	<25
F18	GND	48	33	<25	40.9	26	<25
F18	1st	50	35	<25	43.1	28	<25
G01	GND	49	34	<25	42.4	27	<25
G01	1st	52	37	<25	44.7	30	<25
G02	GND	49	34	<25	42.4	27	<25
G02	1st	52	37	<25	44.5	30	<25
G03	GND	49	34	<25	42.4	27	<25
G03	1st	52	37	<25	44.6	30	<25
G04	GND	49	34	<25	42.3	27	<25
G04	1st	52	37	<25	44.7	30	<25
G05	GND	45	30	<25	38.2	<25	<25
G05	1st	49	34	<25	42.3	27	<25
G06	GND	46	31	<25	38.9	<25	<25
G06	1st	49	34	<25	41.7	27	<25
G07	GND	46	31	<25	39.2	<25	<25
G07	1st	48	33	<25	41.4	26	<25
G08	GND	48	33	<25	41.2	26	<25
G08	1st	50	35	<25	43.5	29	<25
G09	GND	46	31	<25	39.4	<25	<25
G09	1st	48	33	<25	41.2	26	<25
G10	GND	49	34	<25	42.3	27	<25
G10	1st	52	37	<25	44.7	30	<25
G11	GND	50	35	<25	43.1	28	<25
G11	1st	52	37	<25	45	30	<25
G12	GND	47	32	<25	40.5	26	<25
G12	1st	50	35	<25	43	28	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
G13	GND	48	33	<25	41.3	26	<25
G13	1st	51	36	<25	43.7	29	<25
G14	GND	48	33	<25	40.8	26	<25
G14	1st	51	36	<25	43.6	29	<25
G15	GND	48	33	<25	40.5	26	<25
G15	1st	50	35	<25	43.1	28	<25
G16	GND	47	32	<25	39.9	<25	<25
G16	1st	50	35	<25	43.4	28	<25
G17	GND	47	32	<25	40.2	25	<25
G17	1st	50	35	<25	43.4	28	<25
G18	GND	47	32	<25	40.2	25	<25
G18	1st	50	35	<25	43.3	28	<25
G19	GND	50	35	<25	43.1	28	<25
G19	1st	52	37	<25	45	30	<25
G20	GND	50	35	<25	42.5	28	<25
G20	1st	52	37	<25	44.8	30	<25
G21	GND	49	34	<25	42	27	<25
G21	1st	52	37	<25	44.6	30	<25
G22	GND	48	33	<25	40.5	26	<25
G22	1st	49	34	<25	42.4	27	<25
G23	GND	48	33	<25	40.6	26	<25
G23	1st	49	34	<25	42.3	27	<25
G24	GND	48	33	<25	40.9	26	<25
G24	1st	49	34	<25	42.4	27	<25
G25	GND	47	32	<25	40.2	25	<25
G25	1st	49	34	<25	41.7	27	<25
H01	GND	50	35	<25	42.8	28	<25
H01	1st	52	37	<25	44.9	30	<25
H02	GND	50	35	<25	42.8	28	<25
H02	1st	52	37	<25	44.7	30	<25
H03	GND	50	35	<25	42.9	28	<25
H03	1st	52	37	<25	44.7	30	<25
H04	GND	49	34	<25	41.7	27	<25
H04	1st	51	36	<25	43.9	29	<25
H05	GND	48	33	<25	40.7	26	<25
H05	1st	49	34	<25	42.2	27	<25
H06	GND	48	33	<25	40.6	26	<25
H06	1st	50	35	<25	42.5	28	<25
H07	GND	48	33	<25	40.6	26	<25
H07	1st	49	34	<25	42.3	27	<25
H08	GND	48	33	<25	41.1	26	<25
H08	1st	50	35	<25	42.5	28	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Property ID	Floor	Predicted Daytime External Free-field Noise Level $L_{Aeq,16hr}$	Predicted Internal Noise Level, dB $L_{Aeq,16hr}$		Predicted Night-Time External Free-field Noise Level $L_{Aeq,8hr}$	Predicted Internal Noise Level, dB $L_{Aeq,8hr}$	
			Windows Partially Open	Windows Closed		Windows Partially Open	Windows Closed
H09	GND	48	33	<25	41.3	26	<25
H09	1st	50	35	<25	43.3	28	<25
H10	GND	48	33	<25	41	26	<25
H10	1st	50	35	<25	43	28	<25
H11	GND	50	35	<25	42.6	28	<25
H11	1st	51	36	<25	43.9	29	<25
H12	GND	48	33	<25	40.8	26	<25
H12	1st	49	34	<25	42.3	27	<25
H13	GND	48	33	<25	41.1	26	<25
H13	1st	51	36	<25	43.5	29	<25
H09	GND	48	33	<25	41.3	26	<25
H09	1st	50	35	<25	43.3	28	<25
H10	GND	48	33	<25	41	26	<25
H10	1st	50	35	<25	43	28	<25
H11	GND	50	35	<25	42.6	28	<25
H11	1st	51	36	<25	43.9	29	<25
H12	GND	48	33	<25	40.8	26	<25
H12	1st	49	34	<25	42.3	27	<25
H13	GND	48	33	<25	41.1	26	<25
H13	1st	51	36	<25	43.5	29	<25

TABLE B7 (CTD): SUMMARY OF CALCULATED DAYTIME AND NIGHT-TIME AMBIENT NOISE LEVELS WITHIN HABITABLE ROOMS AT THE FRONT AND REAR OF THE PROPOSED DEVELOPMENT

Notes:

- *Red text indicates internal predicted noise levels which exceed the criteria.*
- *With windows closed the assumed composite façade reduction is 33 dB from the free-field noise level.*
- *With an open window, the assumed façade reduction is 15 dB from the free-field noise level.*
- *For all buildings apart from the apartment building, night-time internal noise levels are not presented at ground floor height as it is assumed all bedrooms are on upper floors.*

Company	Source	% On-time correction	
		Day-Time 07:00-23:00	Night-Time 23:00-07:00
Britaniacrest Recycling	Breakout from industrial building	100%	0%
	HGV on weighbridge	100%	0%
	Truck Pass-by	100%	0%
	Dumper truck	100%	0%
	Luton Van	100%	0%
	JCB Grabber	100%	0%
Wienerberger	Breakout from building (north)	100%	0%
	Forklift trucks (north Yard)	100%	0%
	Dumper Truck	100%	0%
	Exhaust/Extract Flue	100%	100%
	Condenser Unit	100%	0%
	Breakout from building South #1	100%	0%
	Breakout from building South #2	100%	0%
	Breakout from building South #3	100%	0%
Panel 2 Paint	Breakout from East façade during angle grinding	100%	0%
RJB Commercials	Large Van	100%	0%
	Wheel Gun	100%	0%
	Van	100%	0%
	Breakout from workshop	100%	0%
	Truck	100%	0%
Greens of Horsham	Breakout at east façade	100%	0%

TABLE B8: % ON-TIME CORRECTION FOR INDUSTRIAL/COMMERCIAL NOISE SOURCES

Receptor	Floor	Specific Sound Level, dB ($L_{Aeq,1hr}$)	Feature Correction	Rating Sound Level, dB ($L_{Ar,1hr}$)	Background Sound Level dB ($L_{A90,T}$)	Excess of rating over background sound level, dB
A01	Ground	27	3	30	49	-19
A02		27	3	30		-19
A03		22	3	25		-24
A04		30	3	33		-16
A05		22	3	25		-24
A06		30	3	33		-16
A07		30	3	33		-16
A08		27	3	30		-19
A09		31	3	34		-15
A10		28	3	31		-18
A11		26	3	29		-20
A12		31	3	34		-15
A13		31	3	34		-15
A14		31	3	34		-15
A15		31	3	34		-16
A16		28	3	31		-18
A17		26	3	29		-20
A18		31	3	34		-15

TABLE B9: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - DAYTIME – PROPERTY AREA A

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,1hr}$	Feature Correction	Rating Sound Level, dB $L_{Ar,1hr}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
B01	Ground	27	3	30	46	-16
B02		26	3	29		-17
B03		27	3	30		-16
B04		24	3	27		-19
B05		22	3	25		-21
B06		28	3	31		-15
B07		30	3	33		-13
B08		24	3	27		-19
B09		25	3	28		-18
B10		24	3	27		-19
B11		24	3	27		-19
B12		30	3	33		-13
B13		24	3	27		-19
B14		27	3	30		-16
B15		26	3	29		-17
B16		30	3	33		-14
B17		27	3	30		-16
B18		24	3	27		-19
B19		33	3	36		-10
B20		32	3	35		-11
B21		32	3	35		-11
B22		32	3	35		-11
B23		32	3	35		-12
C01	Ground	27	3	30	44	-14
C02		26	3	29		-15
C03		24	3	27		-17
C04		24	3	27		-18
C05		29	3	32		-12
C06		32	3	35		-10
C07		31	3	34		-10
C08		32	3	35		-9
C09		32	3	35		-9
C10		30	3	33		-11
C11		30	3	33		-11
C12		31	3	34		-10
C13		30	3	33		-11

TABLE B10: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - DAYTIME – PROPERTY AREAS B & C

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,1hr}$	Feature Correction	Rating Sound Level, dB $L_{Ar,1hr}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
C14	Ground	32	3	35	44	-9
C15		31	3	34		-10
C16		27	3	30		-14
C17		25	3	28		-16
C18		30	3	33		-11
C19		26	3	29		-15
C20		24	3	27		-17
D01	Ground	25	3	28	44	-16
D02		26	3	29		-15
D03		27	3	30		-15
D04		25	3	28		-16
D05		27	3	30		-14
D06		30	3	33		-12
D07		24	3	27		-17
D08		25	3	28		-16
D09		31	3	34		-10
D10		25	3	28		-17
D11		29	3	32		-12
D12		29	3	32		-12
D13		30	3	33		-11
D14		24	3	27		-17
D15		26	3	29		-15
D16		26	3	29		-15
D17		31	3	34		-10
D18		30	3	33		-11
D19		28	3	31		-13
D20		28	3	31		-13
D21		28	3	31		-13
D22		33	3	36		-8
D23		32	3	35		-9
D24		32	3	35		-10
D25		31	3	34		-10
D26		32	3	35		-9
D27		33	3	36		-9
D28		32	3	35		-9
D29		35	3	38		-6
D30		28	3	31		-13

TABLE B11: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - DAYTIME – PROPERTY AREA C & D

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,1hr}$	Feature Correction	Rating Sound Level, dB $L_{Ar,1hr}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
D31	Ground	32	3	35	44	-10
D32		28	3	31		-13
D33		29	3	32		-12
D34		29	3	32		-12
E01	Ground	31	3	34	48	-14
E02		32	3	35		-13
E03		27	3	30		-18
E04		31	3	34		-14
E05		29	3	32		-16
E06		29	3	32		-16
E07		29	3	32		-16
E08		30	3	33		-15
E09		31	3	34		-15
E10		28	3	31		-17
E11		33	3	36		-12
E12		30	3	33		-15
E13		26	3	29		-19
E14		30	3	33		-15
E15		30	3	33		-16
E16		28	3	31		-17
E17		32	3	35		-13
E18		26	3	29		-19
E19		32	3	35		-13
E20		32	3	35		-13
E21		32	3	35		-13
E22		34	3	37		-11

TABLE B12: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - DAYTIME – PROPERTY AREA E

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,1hr}$	Feature Correction	Rating Sound Level, dB $L_{Ar,1hr}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
F01	Ground	38	3	41	48	-8
F02		34	3	37		-11
F03		33	3	36		-12
F04		33	3	36		-12
F05		34	3	37		-11
F06		34	3	37		-11
F07		44	3	47		-1
F08		41	3	44		-4
F09		39	3	42		-6
F10		31	3	34		-14
F11		34	3	37		-11
F12		31	3	34		-14
F13		31	3	34		-14
F14		36	3	39		-9
F15		29	3	32		-16
F16		37	3	40		-9
F17		39	3	42		-6
F18		40	3	43		-5
G01	Ground	41	3	44	48	-4
G02		41	3	44		-4
G03		37	3	40		-8
G04		37	3	40		-8
G05		41	3	44		-4
G06		42	3	45		-3
G07		41	3	44		-4
G08		38	3	41		-7
G09		36	3	39		-9
G10		32	3	35		-13
G11		32	3	35		-13
G12		39	3	42		-6
G13		39	3	42		-6
G14		39	3	42		-6
G15		38	3	41		-7
G16		39	3	42		-6
G17		39	3	42		-6
G18		39	3	42		-6
G19		31	3	34		-14

TABLE B13: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - DAYTIME – PROPERTY AREA F & G

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,1hr}$	Feature Correction	Rating Sound Level, dB $L_{Ar,1hr}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
G20	Ground	32	3	35	48	-13
G21		30	3	33		-15
G22		30	3	33		-15
G23		37	3	40		-9
G24		38	3	41		-8
G25		39	3	42		-6
H01	Ground	36	3	39	47	-8
H02		36	3	39		-8
H03		30	3	33		-14
H04		35	3	38		-9
H05		31	3	34		-13
H06		32	3	35		-12
H07		38	3	41		-7
H08		39	3	42		-5
H09		39	3	42		-5
H10		39	3	42		-5
H11		39	3	42		-5
H12		38	3	41		-6
H13		37	3	40		-7

TABLE B14: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - DAYTIME – PROPERTY AREAS G & H

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,15min}$	Feature Correction	Rating Sound Level, dB $L_{Ar,15min}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
A01	1st	28	3	31	32	-1
A02		28	3	31		-1
A03		27	3	30		-2
A04		30	3	33		+1
A05		26	3	29		-3
A06		28	3	31		-1
A07		28	3	31		-1
A08		28	3	31		-1
A09		29	3	32		+0
A10		28	3	31		-1
A11		28	3	31		-1
A12		31	3	34		+2
A13		31	3	34		+2
A14		30	3	33		+1
A15		30	3	33		+1
A16		29	3	32		+0
A17		28	3	31		-1
A18		28	3	31		-1

TABLE B15: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - NIGHT-TIME – PROPERTY AREA A

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,15min}$	Feature Correction	Rating Sound Level, dB $L_{Ar,15min}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
B01	1st	39	3	42	32	+10
B02		33	3	36		+4
B03		38	3	41		+9
B04		36	3	39		+7
B05		34	3	37		+5
B06		40	3	43		+11
B07		40	3	43		+11
B08		36	3	39		+7
B09		37	3	40		+8
B10		36	3	39		+7
B11		36	3	39		+7
B12		39	3	42		+10
B13		36	3	39		+7
B14		39	3	42		+10
B15		38	3	41		+9
B16		42	3	45		+13
B17		38	3	41		+9
B18		36	3	39		+7
B19		45	3	48		+16
B20		45	3	48		+16
B21		42	3	45		+13
B22		42	3	45		+13
B23		41	3	44		+12
C01	1st	34	3	37	32	+5
C02		31	3	34		+2
C03		31	3	34		+2
C04		30	3	33		+1
C05		30	3	33		+1
C06		31	3	34		+2
C07		31	3	34		+2
C08		28	3	31		-1
C09		31	3	34		+2
C10		32	3	35		+3
C11		32	3	35		+3
C12		32	3	35		+3
C13		33	3	36		+4

TABLE B16: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - NIGHT-TIME – PROPERTY AREAS B & C

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,15min}$	Feature Correction	Rating Sound Level, dB $L_{Ar,15min}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
C14	1st	41	3	44	32	+12
C15		41	3	44		+12
C16		33	3	36		+4
C17		36	3	39		+7
C18		38	3	41		+9
C19		39	3	42		+10
C20		29	3	32		-0
D01	1st	29	3	32	32	0
D02		31	3	34		+2
D03		30	3	33		+1
D04		29	3	32		-1
D05		31	3	34		+2
D06		31	3	34		+2
D07		31	3	34		+2
D08		32	3	35		+3
D09		33	3	36		+4
D10		34	3	37		+5
D11		34	3	37		+5
D12		34	3	37		+5
D13		33	3	36		+4
D14		31	3	34		+2
D15		31	3	34		+2
D16		31	3	34		+2
D17		32	3	35		+3
D18		32	3	35		+3
D19		32	3	35		+3
D20		33	3	36		+4
D21		34	3	37		+5
D22		34	3	37		+5
D23		34	3	37		+5
D24		33	3	36		+4
D25		33	3	36		+4
D26		33	3	36		+4
D27		33	3	36		+4
D28		33	3	36		+4
D29		32	3	35		+3
D30		32	3	35		+3

TABLE B17: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - NIGHT-TIME – PROPERTY AREA C & D

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,15min}$	Feature Correction	Rating Sound Level, dB $L_{Ar,15min}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
D31	1st	31	3	34	32	+2
D32		30	3	33		+1
D33		30	3	33		+1
D34		30	3	33		+1
E01	1st	40	3	43	32	+11
E02		41	3	44		+12
E03		39	3	42		+10
E04		41	3	44		+12
E05		42	3	45		+13
E06		43	3	46		+14
E07		41	3	44		+12
E08		43	3	46		+14
E09		43	3	46		+14
E10		34	3	37		+5
E11		36	3	39		+7
E12		34	3	37		+5
E13		34	3	37		+5
E14		34	3	37		+5
E15		34	3	37		+5
E16		33	3	36		+4
E17		31	3	34		+2
E18		34	3	37		+5
E19		34	3	37		+5
E20		33	3	36		+4
E21		33	3	36		+4
E22		35	3	38		+6

TABLE B18: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - NIGHT-TIME – PROPERTY AREA D & E

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,15min}$	Feature Correction	Rating Sound Level, dB $L_{Ar,15min}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
F01	1st	36	3	39	32	+19
F02		41	3	44		+19
F03		45	3	48		+17
F04		46	3	49		+13
F05		46	3	49		+16
F06		45	3	48		+12
F07		36	3	39		+25
F08		43	3	46		+22
F09		43	3	46		+22
F10		49	3	52		+17
F11		36	3	39		+15
F12		42	3	45		+12
F13		42	3	45		+11
F14		43	3	46		+18
F15		46	3	49		+11
F16		36	3	39		+15
F17		36	3	39		+16
F18		41	3	44		+17
G01	1st	47	3	50	32	+18
G02		41	3	44		+12
G03		37	3	40		+8
G04		38	3	41		+9
G05		45	3	48		+16
G06		51	3	54		+22
G07		46	3	49		+17
G08		47	3	50		+18
G09		37	3	40		+8
G10		38	3	41		+9
G11		37	3	40		+8
G12		44	3	47		+15
G13		43	3	46		+14
G14		42	3	45		+13
G15		42	3	45		+13
G16		41	3	44		+12
G17		40	3	43		+11
G18		40	3	43		+11
G19		36	3	39		+7

TABLE B19: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS - NIGHT-TIME – PROPERTY AREA F & G

Receptor	Floor	Specific Sound Level, dB $L_{Aeq,15min}$	Feature Correction	Rating Sound Level, dB $L_{Ar,15min}$	Background Sound Level dB $L_{A90,T}$	Excess of rating over background sound level, dB
G20	1st	35	3	38	32	+6
G21		34	3	37		+5
G22		34	3	37		+5
G23		34	3	37		+5
G24		39	3	42		+10
G25		39	3	42		+10
H01	1st	33	3	36	32	+4
H02		34	3	37		+5
H03		34	3	37		+5
H04		33	3	36		+4
H05		33	3	36		+4
H06		33	3	36		+4
H07		33	3	36		+4
H08		39	3	42		+10
H09		40	3	43		+11
H10		37	3	40		+8
H11		37	3	40		+8
H12		37	3	40		+8
H13		36	3	39		+7

TABLE B20: CALCULATED SPECIFIC AND CUMULATIVE RATING LEVELS – NIGHT-TIME – PROPERTY AREAS G & H

APPENDIX C: EQUIPMENT CALIBRATION CERTIFICATES

CERTIFICATE OF CALIBRATION

0653

Date of Issue: 25 June 2020 **Certificate Number: UCRT20/1552**

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Approved Signatory [redacted]

K. Mistry

Customer	Southdowns Environmental Consultants Ltd Suite A3 16 Station Street Lewes East Sussex BN7 2DB			
Order No.	X_EQUIPMENT/470			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	*Manufacturer*	*Instrument*	*Type*	*Serial No. / Version*
	Rion	Sound Level Meter	NA-28	00711681
	Rion	Firmware		1.9
	Rion	Pre Amplifier	NH-23	11735
	Rion	Microphone	UC-59	02618
	Rion	Calibrator	NC-74	34625615
		Calibrator adaptor type if applicable		NC-74-002
Performance Class	1			
Test Procedure	TP 2.SLM 61672-3 TPS-49 *Procedures from IEC 61672-3:2006 were used to perform the periodic tests.*			
Type Approved to IEC 61672-1:2002	Yes	Approval Number	21.21/07.01	
	If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003			
Date Received	24 June 2020	ANV Job No.	UKAS20/06325	
Date Calibrated	25 June 2020			

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	*Dated*	*Certificate No.*	*Laboratory*
	09 July 2019	UCRT19/1780	0653

FIGURE C1: ATTENDED MONITOR CALIBRATION CERTIFICATE – NA-28 SN 00711681

CERTIFICATE OF CALIBRATION	Certificate Number UCRT20/1552
UKAS Accredited Calibration Laboratory No. 0653	Page 2 of 2 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title Sound Level Meter	NA-28		
SLM instruction manual ref / issue	06-11		
SLM instruction manual source	Manufacturer		
Internet download date if applicable	N/A		
Case corrections available	Yes		
Uncertainties of case corrections	Yes		
Source of case data	Manufacturer		
Wind screen corrections available	Yes		
Uncertainties of wind screen corrections	Yes		
Source of wind screen data	Manufacturer		
Mic pressure to free field corrections	Yes		
Uncertainties of Mic to F.F. corrections	Yes		
Source of Mic to F.F. corrections	Manufacturer		
Total expanded uncertainties within the requirements of IEC 61672-1:2002	Yes		
Specified or equivalent Calibrator	Specified		
Customer or Lab Calibrator	Customers Calibrator		
Calibrator adaptor type if applicable	NC-74-002		
Calibrator cal. date	25 June 2020		
Calibrator cert. number	UCRT20/1549		
Calibrator cal cert issued by Lab	0653		
Calibrator SPL @ STP	94.00	dB	Calibration reference sound pressure level
Calibrator frequency	1001.94	Hz	Calibration check frequency
Reference level range	20 - 120	dB	

Accessories used or corrected for during calibration - Wind Shield
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	23.51	23.66	± 0.30 °C
Humidity	61.6	57.3	± 3.00 %RH
Ambient Pressure	100.68	100.66	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.0 dB		Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise	This test is currently not performed by this Lab.		
Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	10.1	dB	UR	14.4	dB	UR	21.8	dB	UR
Uncertainty of the electrical self generated noise ±				0.12	dB				

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: B. Giles R 2

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

FIGURE C1(CTD): ATTENDED MONITOR CALIBRATION CERTIFICATE – NA-28 SN 00711681

CERTIFICATE OF CALIBRATION

Date of Issue: 08 June 2020

Certificate Number: TCRT20/1273

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Approved Signatory

[redacted]

K. Mistry

Customer	Southdowns Environmental Consultants Limited 16 Station Street Lewes BN7 2DB

Order No.	X_EQUIPMENT/427			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	*Manufacturer*	*Instrument*	*Type*	*Serial No. / Version*
	Rion	Sound Level Meter	NL-52	01043468
	Rion	Firmware		2.0
	Rion	Pre Amplifier	NH-25	43497
	Rion	Microphone	UC-59	14747
	Rion	Calibrator	NC-74	34536109
		Calibrator adaptor type if applicable		NC-74-002
Performance Class	1			
Test Procedure	TP 2.SLM 61672-3 TPS-49			
	Procedures from IEC 61672-3:2006 were used to perform the periodic tests.			
Type Approved to IEC 61672-1:2002	YES	Approval Number	21.21 / 13.02	
	If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003			
Date Received	03 June 2020	ANV Job No.	TRAC20/06159	
Date Calibrated	08 June 2020			

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. As public evidence was available, from an independent testing organisation responsible for approving the results of pattern evaluation tests performed in accordance with IEC 61672-2:2003, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002, the sound level meter submitted for testing conforms to the class 1 requirements of IEC 61672-1:2002.

Previous Certificate	*Dated*	*Certificate No.*	*Laboratory*
	20 February 2019	TCRT19/1142	ANV Measurement Systems

FIGURE C2: UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-52 SN 01043468

CERTIFICATE OF CALIBRATION

Certificate Number
TCRT20/1273

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	Sound Level Meter	NL-42 / NL-52	
SLM instruction manual ref / issue		11-03	
SLM instruction manual source		Manufacturer	
Internet download date if applicable		N/A	
Case corrections available		Yes	
Uncertainties of case corrections		Yes	
Source of case data		Manufacturer	
Wind screen corrections available		Yes	
Uncertainties of wind screen corrections		Yes	
Source of wind screen data		Manufacturer	
Mic pressure to free field corrections		Yes	
Uncertainties of Mic to F.F. corrections		Yes	
Source of Mic to F.F. corrections		Manufacturer	
Total expanded uncertainties within the requirements of IEC 61672-1:2002		Yes	
Specified or equivalent Calibrator		Specified	
Customer or Lab Calibrator		Lab Calibrator	
Calibrator adaptor type if applicable		NC-74-002	
Calibrator cal. date		06 May 2020	
Calibrator cert. number		UCRT20/1403	
Calibrator cal cert issued by		ANV Measurement Systems	
Calibrator SPL @ STP		94.04 dB	Calibration reference sound pressure level
Calibrator frequency		1001.99 Hz	Calibration check frequency
Reference level range		25 - 130 dB	

Accessories used or corrected for during calibration - Extension Cable & Wind Shield WS-15
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	22.19	22.20	± 0.30 °C
Humidity	44.1	42.9	± 3.00 %RH
Ambient Pressure	100.90	100.91	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.2	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	13.8	dB	UR	18.9	dB	UR	22.2	dB	UR
Uncertainty of the electrical self generated noise ±						0.12		dB	

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with the Guide to the Expression of Uncertainty in Measurement published by ISO.

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

..... END .....

Calibrated by: C. Hirlav R 1

Additional Comments
None

FIGURE C2 (CTD): UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-52 SN 01043468

CERTIFICATE OF CALIBRATION

0653

Date of Issue: 25 February 2020 **Certificate Number: UCRT20/1227**

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Approved Signatory [redacted]

K. Mistry

Customer	Southdowns Environmental Consultants Limited Suite A3 16 Station Street Lewes East Sussex BN7 2DB			
Order No.	X_EQUIPMENT/394			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	*Manufacturer*	*Instrument*	*Type*	*Serial No. / Version*
	Rion	Sound Level Meter	NL-31	00541660
	Rion	Firmware		1.045
	Rion	Pre Amplifier	NH-21	11646
	Rion	Microphone	UC-53A	321106
	Rion	Calibrator	NC-74	34536109
		Calibrator adaptor type if applicable		NC-74-002
Performance Class	1			
Test Procedure	TP 2.SLM 61672-3 TPS-49 *Procedures from IEC 61672-3:2006 were used to perform the periodic test.*			
Type Approved to IEC 61672-1:2002	No	Approval Number		
	If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003			
Date Received	20 February 2020	ANV Job No.	UKAS20/02128	
Date Calibrated	25 February 2020			

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2002 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002 and because the periodic tests of IEC 61672-3:2006 cover only a limited subset of the specifications in IEC 61672-1:2002.

Previous Certificate	*Dated*	*Certificate No.*	*Laboratory*
	31 October 2018	UCRT18/2098	0653

FIGURE C3: UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-31 SN 00541660

CERTIFICATE OF CALIBRATION	Certificate Number UCRT20/1227
UKAS Accredited Calibration Laboratory No. 0653	Page 2 of 3 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	NL-21 NL-31 Instruction Manual		
SLM instruction manual ref / issue	32006 09-04		
SLM instruction manual source	Manufacturer		
Internet download date if applicable	N/A		
Case corrections available	Yes		
Uncertainties of case corrections	No		See comment on page 3
Source of case data	Manufacturer		
Wind screen corrections available	Yes		
Uncertainties of wind screen corrections	No		See comment on page 3
Source of wind screen data	Manufacturer		
Mic pressure to free field corrections	Yes		
Uncertainties of Mic to F.F. corrections	No		See comment on page 3
Source of Mic to F.F. corrections	Manufacturer		
Total expanded uncertainties within the requirements of IEC 61672-1:2002	Yes		
Specified or equivalent Calibrator	Specified		
Customer or Lab Calibrator	Lab Calibrator		
Calibrator adaptor type if applicable	NC-74-002		
Calibrator cal. date	21 January 2020		
Calibrator cert. number	UCRT20/1082		
Calibrator cal cert issued by Lab.	0653		
Calibrator SPL @ STP	93.98	dB	Calibration reference sound pressure level
Calibrator frequency	1001.97	Hz	Calibration check frequency
Reference level range	30 - 120	dB	

Accessories used or corrected for during calibration - Wind Shield WS-10
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End	
Temperature	23.50	22.89	± 0.30 °C
Humidity	35.4	37.5	± 3.00 %RH
Ambient Pressure	99.00	98.96	± 0.03 kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.2	dB	Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±				0.10	dB

Self Generated Noise — This test is currently not performed by this Lab.

Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	8.6	dB	UR	13.8	dB	UR	21.7	dB	
Uncertainty of the electrical self generated noise ±						0.12		dB	

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Comments

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

FIGURE C3 (CTD): UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-31 SN 00541660

CERTIFICATE OF CALIBRATION	Certificate Number UCRT20/1227
UKAS Accredited Calibration Laboratory No. 0653	Page 3 of 3 Pages

If any of the "Uncertainties of ....." are set to NO above, then the following applies.
No information on the uncertainty of measurement, required by 11.7 of IEC 61672-3:2006, of the adjustment data given in the instruction manual or obtained from the manufacturer or supplier of the sound level meter, or the manufacturer of the microphone, or the manufacturer of the multi-frequency sound calibrator, or the manufacturer of the electrostatic actuator was published in the instruction manual or made available by the manufacturer or supplier. The uncertainty of the measurement of the adjustment data has therefore been assumed to be numerically zero for the purpose of this periodic test. If these uncertainties are not actually zero, there is a possibility that the frequency response of the sound level meter may not conform to the requirements of IEC 61672-1:2002.

Calibrated by: B. Giles R 1

..... END .....

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

FIGURE C3 (CTD): UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-31 SN 00541660

CERTIFICATE OF CALIBRATION

0653

Date of Issue: 06 January 2020 **Certificate Number: UCRT20/1012**

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Approved Signatory [redacted]

K. Mistry

Customer	Southdowns Environmental Consultants Limited Suite A3 16 Station Street Lewes East Sussex BN7 2DB			
Order No.	X_EQUIPMENT/375			
Description	Sound Level Meter / Pre-amp / Microphone / Associated Calibrator			
Identification	*Manufacturer*	*Instrument*	*Type*	*Serial No. / Version*
	Rion	Sound Level Meter	NL-31	00503851
	Rion	Firmware		1.400
	Rion	Pre Amplifier	NH-21	32627
	Rion	Microphone	UC-53A	320978
	Rion	Calibrator	NC-74	34536109
		Calibrator adaptor type if applicable		NC-74-002
Performance Class	1			
Test Procedure	TP 2.SLM 61672-3 TPS-49 *Procedures from IEC 61672-3:2006 were used to perform the periodic test.*			
Type Approved to IEC 61672-1:2002	No	Approval Number		
	If YES above there is public evidence that the SLM has successfully completed the applicable pattern evaluation tests of IEC 61672-2:2003			
Date Received	03 January 2020	ANV Job No.	UKAS20/01002	
Date Calibrated	06 January 2020			

The sound level meter submitted for testing has successfully completed the class 1 periodic tests of IEC 61672-3:2006, for the environmental conditions under which the tests were performed. However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2002 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2002 and because the periodic tests of IEC 61672-3:2006 cover only a limited subset of the specifications in IEC 61672-1:2002.

Previous Certificate	*Dated*	*Certificate No.*	*Laboratory*
	08 December 2017	TCRT17/1826	ANV Measurement Systems

FIGURE C4: UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-31 SN 00503851

CERTIFICATE OF CALIBRATION	Certificate Number UCRT20/1012
UKAS Accredited Calibration Laboratory No. 0653	Page 2 of 3 Pages

Sound Level Meter Instruction manual and data used to adjust the sound levels indicated.

SLM instruction manual title	NL-21 NL-31 Instruction Manual		
SLM instruction manual ref / issue	32006 09-04		
SLM instruction manual source	Manufacturer		
Internet download date if applicable	N/A		
Case corrections available	Yes		
Uncertainties of case corrections	No		See comment on page 3
Source of case data	Manufacturer		
Wind screen corrections available	Yes		
Uncertainties of wind screen corrections	No		See comment on page 3
Source of wind screen data	Manufacturer		
Mic pressure to free field corrections	Yes		
Uncertainties of Mic to F.F. corrections	No		See comment on page 3
Source of Mic to F.F. corrections	Manufacturer		
Total expanded uncertainties within the requirements of IEC 61672-1:2002	Yes		
Specified or equivalent Calibrator	Specified		
Customer or Lab Calibrator	Lab Calibrator		
Calibrator adaptor type if applicable	NC-74-002		
Calibrator cal. date	16 December 2019		
Calibrator cert. number	UCRT19/2361		
Calibrator cal cert issued by Lab.	0653		
Calibrator SPL @ STP	93.98	dB	Calibration reference sound pressure level
Calibrator frequency	1002.05	Hz	Calibration check frequency
Reference level range	30 - 120	dB	

Accessories used or corrected for during calibration - Wind Shield WS-10
Note - if a pre-amp extension cable is listed then it was used between the SLM and the pre-amp.

Environmental conditions during tests	Start	End		
Temperature	22.98	23.11	± 0.30	°C
Humidity	37.8	34.5	± 3.00	%RH
Ambient Pressure	100.97	100.78	± 0.03	kPa

Response to associated Calibrator at the environmental conditions above.

Initial indicated level	94.3	dB		Adjusted indicated level	94.0	dB
The uncertainty of the associated calibrator supplied with the sound level meter ±					0.10	dB

Self Generated Noise	This test is currently not performed by this Lab.		
Microphone installed (if requested by customer) = Less Than	N/A	dB	A Weighting
Uncertainty of the microphone installed self generated noise ±	N/A	dB	

Microphone replaced with electrical input device - UR = Under Range indicated

Weighting	A			C			Z		
	9.0	dB	UR	14.7	dB	UR	21.5	dB	
Uncertainty of the electrical self generated noise ±						0.12		dB	

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a coverage probability of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.

Comments

For the test of the frequency weightings as per paragraph 12. of IEC 61672-3:2006 the actual microphone free field response was used.

The acoustical frequency tests of a frequency weighting as per paragraph 11 of IEC 61672-3:2006 were carried out using an electrostatic actuator.

FIGURE C4 (CTD): UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-31 SN 00503851

CERTIFICATE OF CALIBRATION	Certificate Number UCRT20/1012
UKAS Accredited Calibration Laboratory No. 0653	Page 3 of 3 Pages

If any of the "Uncertainties of ....." are set to NO above, then the following applies.
No information on the uncertainty of measurement, required by 11.7 of IEC 61672-3:2006, of the adjustment data given in the instruction manual or obtained from the manufacturer or supplier of the sound level meter, or the manufacturer of the microphone, or the manufacturer of the multi-frequency sound calibrator, or the manufacturer of the electrostatic actuator was published in the instruction manual or made available by the manufacturer or supplier. The uncertainty of the measurement of the adjustment data has therefore been assumed to be numerically zero for the purpose of this periodic test. If these uncertainties are not actually zero, there is a possibility that the frequency response of the sound level meter may not conform to the requirements of IEC 61672-1:2002.

Calibrated by: A.Escalona R 1

..... END .....

Additional Comments The results on this certificate only relate to the items calibrated as identified above.
None

FIGURE C4 (CTD): UNATTENDED MONITOR CALIBRATION CERTIFICATE – NL-31 SN 00503851

CERTIFICATE OF CALIBRATION

Date of Issue: 22 July 2020

Certificate Number: TCRT20/1407

Issued by:
ANV Measurement Systems
Beaufort Court
17 Roebuck Way
Milton Keynes MK5 8HL
Telephone 01908 642846 Fax 01908 642814
E-Mail: info@noise-and-vibration.co.uk
Web: www.noise-and-vibration.co.uk
Acoustics Noise and Vibration Ltd trading as ANV Measurement Systems

Approved Signatory

K. Mistry

[redacted]

Client	Southdowns Environmental Consultants Ltd Suite A3, 16 Station Street, Lewes East Sussex BN7 2DB
Purchase Order No.	X_EQUIPMENT/496
Instrument	Rion VM-54 Tri-Axial Vibration Meter
Serial No.	00970225
Accelerometer Type	PV-83CW
Accelerometer Serial No.	74864
Program	VX-54WB1
Client Asset No.	N/A
Procedure ID.	VM-54 Issue 5
Job Number	TRAC20/07239
Date of Calibration	22 Jul 2020
Previous Cert. number	N/A
Date of Previous Cert.	N/A
Rig Number	6
Kit Number	24
Calibration Status	**Passed Calibration**

This calibration is traceable to National Standards. ANV Measurement Systems sources used to perform calibrations are calibrated at the National Physical Laboratory or by UKAS laboratories accredited for the purpose.

The performance of the system (the meter, accelerometer and program cards) was found to be within the manufacturer's specification.

Comment
This certificate reports recorded values for the instrument 'As Received'.

FIGURE C5: UNATTENDED MONITOR CALIBRATION CERTIFICATE – VM-54 SN 00970225

CERTIFICATE OF CALIBRATION

Certificate Number
TCRT20/1407
Page 2 of 3 Pages

Environment
The ambient environmental conditions at the time of the calibration were;
Temperature: 24.8 ± 1°C, Humidity: 40 ± 5%RH, Atmospheric pressure 101.2 ± 1 kPa

Test results
Each accelerometer axis was mounted co-axially with a Rion LS-10C servo accelerometer, and tests conducted for the dynamic range and frequency response of the complete system. Additional electrical tests were carried out on the amplitude linearity of the instrument.

Linearity errors in dB measured electrically at 40 Hz on the 100 m/s^2 range, Wd(a) weighting for the X & Y channels, Wb(a) weighting for the Z channel. Ref. level was set at approximately half of nominal range. Signal level changes in dB; reading error in dB given for each axis. "m/s^2" is actual reading in m/s^2.

Level dB	Error (X) dB	m/s^2 (X)	Error (Y) dB	m/s^2 (Y)	Error (Z) dB	m/s^2 (Z)
0	0.06	158.388	0.01	159.814	0.01	159.901
-10	REF	49.739	REF	50.453	REF	50.482
-20	0.04	15.802	0.04	16.020	0.04	16.029
-30	0.04	4.999	0.04	5.066	0.03	5.066
-40	0.05	1.582	0.04	1.602	0.03	1.602
-50	-0.09	0.492	0.03	0.506	0.03	0.507
-60	0.09	0.159	0.24	0.164	0.23	0.164

Permitted tolerance ±1.0 dB.

Inter-Range accuracy.
Measured using an electrical signal at 40 Hz using the same weighting as for the test of linearity.

Range m/s^2	Error (X) dB	Error (Y) dB	Error (Z) dB
0.3	0.05	0.07	0.05
1.0	0.05	0.09	0.04
3.0	0.07	0.06	0.05
10	0.10	0.05	0.04
30	0.07	0.05	0.05
100	REF	REF	REF
300	0.06	0.02	0.02
1000	0.04	0.01	0.02

FIGURE C5 (CTD): UNATTENDED MONITOR CALIBRATION CERTIFICATE – VM-54 SN 00970225

CERTIFICATE OF CALIBRATION

Certificate Number
TCRT20/1407
Page 3 of 3 Pages

Frequency Responses For Complete System
Measured on the 1000 m/s2 range with PV-83CW serial number 74864 and weighting network Wd for X & Y axis, Wb for Z axis.

Frequency Hz	Applied Acc. m/s^2	X (Wd) rms m/s^2	Error X %	VDV (X) $m/s^{1.75}$	Error X %
3.981	0.285	0.1526	2.9	0.3002	4.0
5.012	0.355	0.1504	2.6	0.2951	3.4
6.310	0.355	0.1187	2.6	0.2325	3.1
7.943	0.355	0.0941	2.8	0.1843	3.3
10.00	0.355	0.0751	3.4	0.1465	3.6
12.59	0.355	0.0602	5.0	0.1188	6.3
15.85	0.355	0.0482	6.1	0.0952	7.5
19.95	0.550	0.0605	8.3	0.1194	9.6

Frequency Hz	Applied Acc. m/s^2	Y (Wd) rms m/s^2	Error Y %	VDV (Y) $m/s^{1.75}$	Error Y %
3.981	0.285	0.1506	1.6	0.2964	2.6
5.012	0.355	0.1491	1.7	0.2925	2.5
6.310	0.355	0.1169	1.0	0.2291	1.6
7.943	0.355	0.0929	1.4	0.1815	1.8
10.00	0.355	0.0739	1.7	0.1446	2.3
12.59	0.355	0.0586	2.2	0.1159	3.7
15.85	0.355	0.0475	4.4	0.0934	5.4
19.95	0.550	0.0591	5.8	0.1162	6.7

Frequency Hz	Applied Acc. m/s^2	Z (Wb) rms m/s^2	Error Z %	VDV (Z) $m/s^{1.75}$	Error Z %
3.981	0.285	0.2652	4.0	0.5299	6.6
5.012	0.355	0.3813	3.5	0.7664	6.8
6.310	0.355	0.3908	3.2	0.7853	6.4
7.943	0.355	0.3809	3.4	0.7611	6.1
10.00	0.355	0.3621	3.3	0.7193	5.3
12.59	0.355	0.3342	2.9	0.6609	4.5
15.85	0.355	0.3015	3.1	0.5945	4.4
19.95	0.550	0.4047	2.6	0.7969	3.7

Tolerance required +12%/-11%

All results meet the manufacturer's specification.

END OF CALIBRATION **CALIBRATED BY :- A. Lloyd**

FIGURE C5 (CTD): UNATTENDED MONITOR CALIBRATION CERTIFICATE – VM-54 SN 00970225