ENVIRONMENTAL NOISE ASSESSMENT

Normanby Road, Scunthorpe, Lincolnshire, DN15 8QZ

Overhall Contractors Ltd

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Version	Issue date	Author	Checked	Description
1.0	11/12/2020	TB	RS	Internal draft
1.2	05/03/2021	TB	RS	Application submission

CONTENTS

List of Tables and Figures:

List of Appendices:

1 Introduction

1.1.1 Oaktree Environmental have been commissioned by Overhall Contractors Ltd to undertake an environmental noise assessment for the site at Normanby Road, Scunthorpe, Lincolnshire, DN15 8QZ.

1.1.2 The purpose of this noise assessment is to quantify the impacts associated with the application and to put forward relevant mitigation in order to reduce any such impacts associated with the proposed operation of the site.

1.2 Facility Overview

1.2.1 Overhall Contractors Ltd are seeking planning permission for the continuation of crushing and screening operations and to allow importation of inert and excavation wastes for manufacture of secondary aggregates and soils on Land off Normanby Road, Scunthorpe, DN15 8QZ.

1.2.2 Site operations will comprise the acceptance and storage of inert and excavation wastes, received from the applicant's own collections and from other hauliers in the surrounding area for the purpose of manufacturing recovered aggregates and soils. No hazardous, liquid or clinical wastes will be accepted at the site and strict identification and quarantine procedures will ensure any non-conforming wastes are dealt with appropriately and without risk to human health or the environment.

1.2.3 As the proposed development involves the acceptance, storage, transfer and treatment of inert and excavation wastes, the operation of the site will be subject to a number of stringent management techniques which are detailed in later sections of this statement. The site operator will require an Environmental Permit (EP) which will be issued and regulated by the Environment Agency (EA) to ensure the site is operated with due consideration for the environment and the amenity of the surrounding area. In accordance with national planning policy, there should be no duplication of this regulation. As such,

when outlining suitable mitigation in this report, reference is made to controls that will be required to be in place under the EP.

1.2.4 The location of the site is shown on the Site Location Plan which has been included in Appendix I of this document and all references to 'the site' in this statement shall mean the red line planning application boundary.

1.2.5 Typical operations are to primarily comprise the operation of the loading shovel/excavator with the operation of mobile crushers, scalpers etc. generally only expected to run 3/5 days a month.

1.3 Hours of Operation

1.3.1 The site will be open during the following hours for the delivery and receipt of waste on

Monday to Friday	07:00 – 17.00
Saturday	07:00 – 14.00
Sundays, Bank/Public holidays	Closed

1.4 Environmental Regulation

1.4.1 As the operations on site will be regulated under an Environmental Permit, potential emissions, including noise, dust and odour, will be regulated by the EA under the EP. In accordance with national planning policy, there should be no duplication of this regulation.

1.4.2 As such, when outlining suitable mitigation in this report, reference is made to controls on operations at the site; including depositing, sorting, moving, storing and removing waste that will be required to be in place under the EP.

2 Planning Policy

2.1 Noise Policy Statement for England

2.1.1 The Noise Policy Statement for England (NPSE), March 2010, sets out the Government's long-term noise policy, the aims of which are: "Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:

- Avoid significant adverse effects on health and quality of life:
- Mitigate and minimise adverse effects on health and quality of life;
- Where possible, contribute to the improvement of health and quality of life."

2.1.2 The first aim of the NPSE is to avoid significant adverse effects, considering the shared UK principles of sustainable development.

2.1.3 The second aim provides guidance on the scenario when the potential noise impact falls between the LOAEL (Lowest Observed Adverse Effect Level) and the SOAEL (Significant Observed Adverse Effect Level). In which case it is stated; "all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development". However, it is also stated "This does not mean that such adverse effects cannot occur".

2.1.4 With regards to the SOAEL, the document states; "It is not possible to have a single objective noise-base

2.1.5 d measure that defines SOAEL that is applicable to all sources of noise in all situations", acknowledging that this is very much dependent on the noise source, the receptor and the time of day. Therefore, the NPSE provides the necessary policy flexibility until further guidance / evidence is available.

2.1.6 Other guidance will need to be taken into account when applying the principles of the NPSE, as well the nature of the proposed development and its specific circumstances.

2.2 National Planning Policy Framework

2.2.1 The NPPF, revised in 2019, replaces the Planning Policy Guidance Note 24 (PPG 24) and does not make reference to any other relevant noise guidance, other than the NPSE.

2.2.2 With regards to noise, the NPPF states the planning process should "contribute and enhance the natural and local environment", with regards to noise this means "preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affect by unacceptable levels" of, amongst other things, noise.

2.2.3 The NPPF states that 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:

a) mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life,

b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

2.3 Planning Practice Guidance – Noise

2.3.1 Further to the guidance set out in the NPPF, a Planning Practice Guidance with regards to noise was issued in 2014. This guidance advises that the Local Authority should consider the following when decision making:

- 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.
- Whether or not a good standard of amenity can be achieved.

2.3.2 As previously discussed within the NPSE, the guidance discusses the LOAEL and SOAEL and provides scenarios that could be expected for the perception level of noise, plus the associated activities that may be required to bring about the desired outcome. Again, as with the NPSE, no objective noise levels are provided for LOAEL or SOAEL.

2.3.3 It is stated that "the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation". These factors include:

- The absolute noise level of the source and the time of day it occurs.
- Where the noise is non-continuous (intermittent), the number of noise events along with any patterns of occurrence.
- The frequency of content and acoustic characteristics (tonality etc.) of the noise.
- The effects of noise on the surrounding wildlife.
- The acoustic environment of external amenity areas provided as an intrinsic part of the overall design.
- The impact of noise from certain commercial developments such as night clubs and pubs where activities are often at their peak during the evening and night.

3 Noise Assessment Criteria

3.1.1 In order to assess the impacts of existing road traffic and industrial noise on the proposed development, the following documents have been used:

- BS8233:2014
- BS4142:2014
- World Health Organisation (WHO) Guidelines on Community Noise

3.2 BS8283:2014

3.2.1 This document provides guidance on the relevant level of sound insulation required by a variety of building types affected by general environmental noise and provides recommendations for appropriate internal ambient noise level criteria for a variety of different situations including residential dwellings. The table below includes the proposed noise criteria within BS8283:2014 with regards to residential properties:

Table 3.1 - BS8233:2014 Internal Criteria

Activity	Location	07:00 – 23:00	23:00 – 7:00
Resting	Living rooms	35 $L_{Aeq, 16hour}$	-
Dining	Dining room	40 $L_{Aeq, 16hour}$	-
Sleeping	Bedroom	35 $L_{Aeq, 16hour}$	30 $L_{Aeq, 16hour}$

3.3 BS4142:2014

3.3.1 BS4142:2014 provides a method for "assessing and rating industrial sound" of an industrial/commercial nature. The method described in the standard uses the rating level from a noise source and the existing background noise level to assess the potential effects of sound on the residential premises upon which sound is incident.

3.3.2 Using this method the background sound level is subtracted from the rating level. The resulting figure is assessed using the following guidance from the document:

- The greater the difference between the background sound level and the rating level, the greater the impact on the receptor.
- An exceedance of the background level of around 10dB or more is likely to be an indication of a significant adverse impact, dependent on the context.
- An exceedance of the background level of around 5dB is likely to be an indication of an adverse impact, dependent on the context.
- The lower the rating level compared to the existing background level, the less likely an adverse impact or a significant adverse impact. Where the rating level does not exceed the background level, this is indicative of a low impact, dependent on context.

3.3.3 The document introduces a requirement to consider and report the uncertainty in the data as well as also including guidance for applying a correction/penalty for certain adverse acoustic features such as tonality, impulsivity or intermittency. The following table summarises the corrections based on the subjective assessment of the noise.

Table 3.2 - BS4142:2014 Corrections and Penalties

	Tonality	**Impulsivity**	**Other characteristics**
Just perceptible	+ 2dB	+ 3dB	
Clearly perceptible	+ 4dB	+ 6dB	
Highly perceptible	+ 6dB	+ 9dB	
Readily Distinctive against Residual Environment			+ 3dB

3.4 WHO Guidelines for Community Noise

3.4.1 The WHO Guidelines (1999) recommends indoor night-time guidelines in order to avoid sleep disturbance, the document states these to be 30 dB (LAeq) and 45 dB (LA_{fmax}) for continuous and individual noise events respectively.

3.4.2 The document states that the number of noise events should also be considered and that individual noise events should not exceed 45 dB (LA_{fmax}) more than 10 – 15 times per night.

3.4.3 The WHO document also recommends that steady, continuous noise levels should not exceed 55 dB (LAeq) on outdoor living areas (balconies, terraces etc.). However, in order protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB (LAeq).

4 Background Noise Survey

4.1 Procedure and Monitoring Locations

4.1.1 A noise survey was completed between approximately 07:00 and 15:30 hrs on Wednesday 29th July 2020 in accordance with BS 7445-1: 2003 by Thomas Benson of Oaktree Environmental Ltd. Attended background level measurements were taken at locations representative of the nearest noise sensitive receptors within the vicinity of the site. The measurement locations are presented in Figure 4.1, below:

Figure 4.1 - Site location and noise monitoring position

4.1.2 The weather during the survey was primarily sunny with cloudy intervals and a gentle breeze. The wind speed varied throughout the day with a maximum observed gust of 4.8m/s recorded whilst the temperature ranged from 12 ^{o}C to 22^{o}C. No precipitation was observed throughout the day.

4.2 Equipment Used During the Survey

4.2.1 Details of the equipment used during the survey are shown in the table overleaf:

Table 4.1 - Survey Equipment

Description	*Model*	Manufacturer	Serial No.	Calibration Date
Class 1 Sound Analyser	*NOR 150*	Norsonic	15030504	03/03/2020
Microphone	Norsonic Type 1225	Norsonic	305208	03/03/2020
Field Calibrator	NOR 1251	Norsonic	35205	03/03/2020

4.3 Results

4.3.1 The results of the background noise monitoring survey are tabulated overleaf in tables 4.2 and 4.3. The L(t) graph for the measurements is displayed in figures 4.2 to 4.7. Commentary on the background level is included further in Section 4.4.

Table 4.2 - Measurement Results for High St, Dragonby

Measurement Time	LA_{eq}	LA_{90}	LA_{10}	LA_{max}
29/07/2020 07:00-08:00	49.1	41.4	47.3	80.3
29/07/2020 09:20-10:20	49.8	44.0	51.5	70.6
29/07/2020 13:02-14:02	51.2	44.7	51.4	77.0

Figure 4.2 - L(t) graph for 7:00 – 08:00 measurement at High St, Dragonby

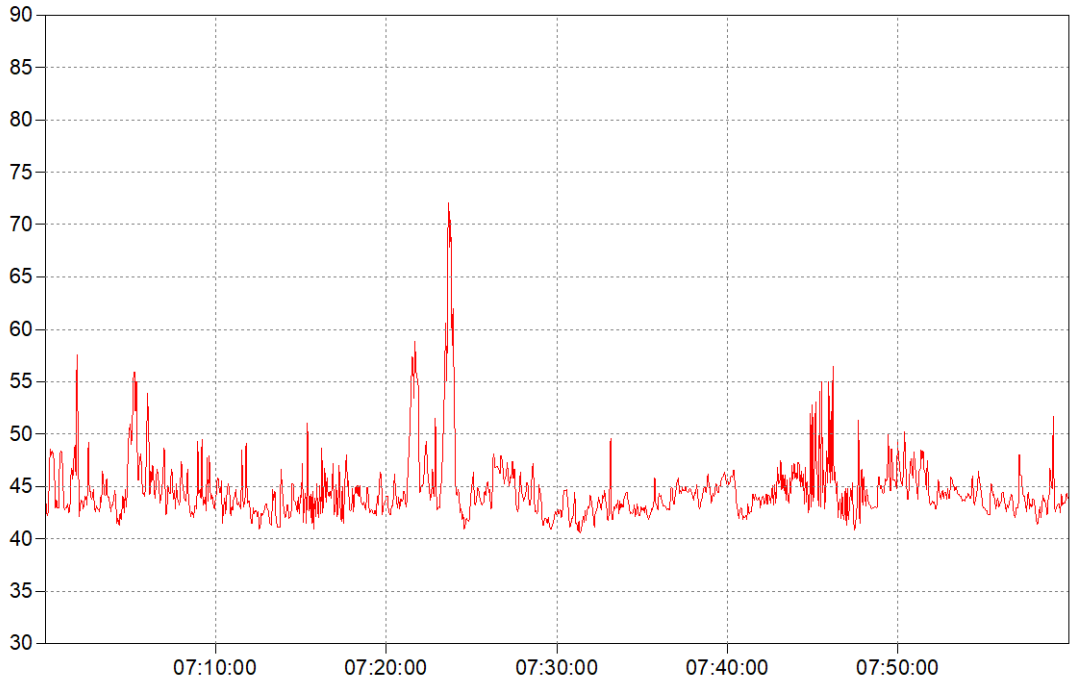


Figure 4.3 - L(t) graph for 09:20 – 10:20 measurement at High St, Dragonby

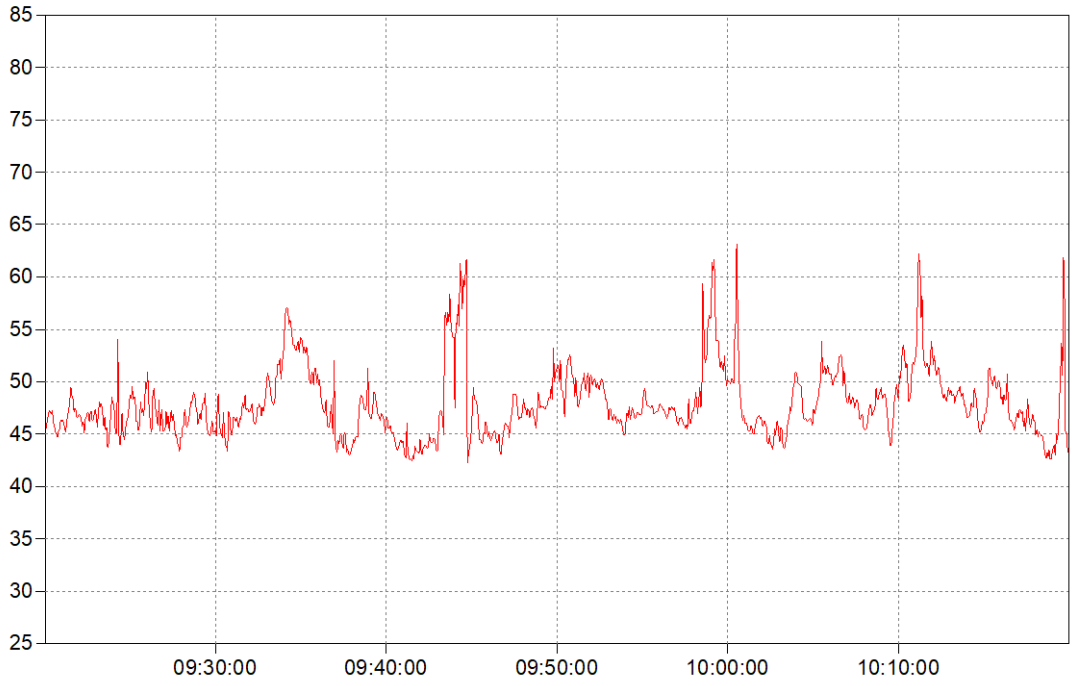
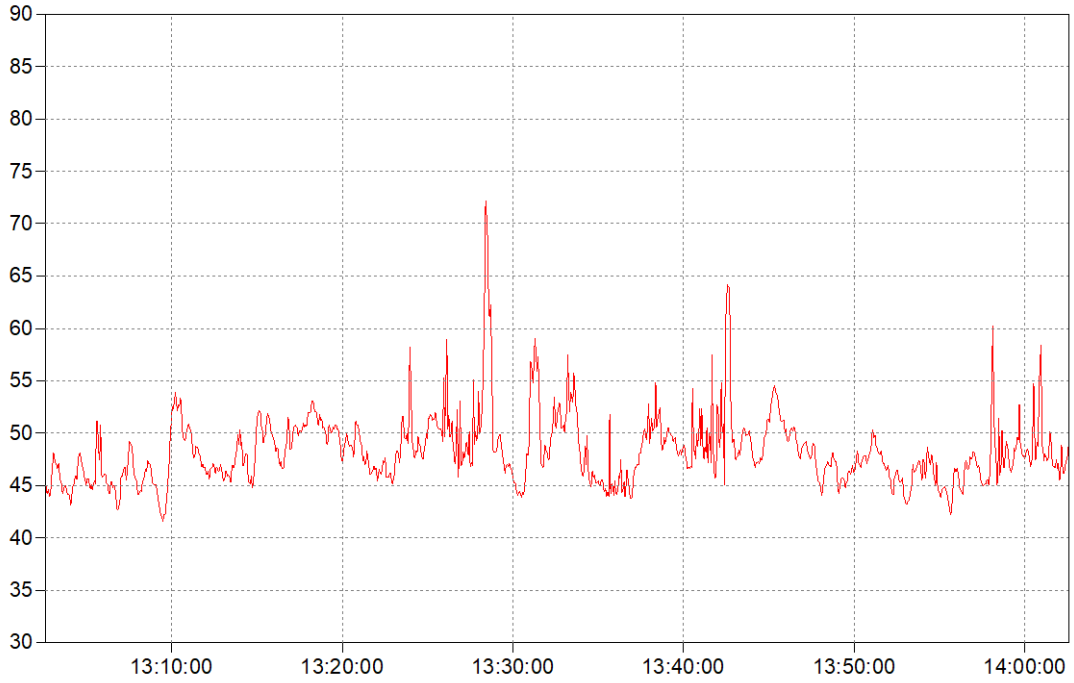


Figure 4.4 - L(t) graph for 13:02 – 14:02 measurement at High St, Dragonby



4.4 Existing Noise Climate at High St, Dragonby

4.4.1 During the early monitoring period (07:00 - 08:00) noise sources generally comprised birdsong and distant industrial noise as well as noise arising from local residents (such as vehicles setting off at the start of “rush hour” etc.).

4.4.2 The noise climate generally remained consistent at these receptors with birdsong and distant industrial noise audible throughout the day with additional contributions from local residents, courier deliveries etc.

5 Noise Impact Assessment

5.1 Introduction

5.1.1 It is considered the most significant noise sources associated with the proposed extension of working hours at the development are as follows:

- Operation of power screen and mobile scalping screens,
- Movement and handling of waste/aggregates using the sites loading shovel/excavator,
- Loading of HGVs with aggregates using the loading shovel/excavator.

5.1.2 Table 5.1 below includes the sound power levels for these activities, which have been either measured by Oaktree Environmental at a similar site, taken from relevant literature or provided by the supplier.

Table 5.1 – Noise levels Associated with Proposed Operations

Noise Source	Noise Level (LAeq)	Data Source	Comments
Movement of wastes/aggregates using loading shovel	77.4dB (A) at 3m	Oaktree measurement at a similar site	Whilst this measurement has been at similar site, both the material and size of the loading shovel is comparable.
XR400S Powerscreen	68.0-72.8dB (A) at 10m dependent on orientation	Provided by the supplier	
2 X Sandvik QE341	71.7 – 85.3dB (A) at 7m dependent on orientation	Provided by the supplier	
Loading of material/wastes into HGV	76.4dB (A) at 3m	Oaktree measurement at a similar site	
Unloading of wastes/aggregates via dumper truck	80dB (A) at 10m	B BS5228:2011 - Table C.1, Ref: 11	This value corresponds to the dumping of brick wastes, a value for the dumping and therefore this is considered to be a worst-case scenario figure.

5.1.3 As these noise sources will not be constant, correction has been applied for averaged fraction of the hour these are expected to occupy. These times have been based on discussions with the site management team.

5.1.4 Screening is provided to the receptors via the adjacent bunding to a height of between 6-8m which completely screens the plant/equipment onsite. In order to simplify the value attributed to screening, a figure of 10dB may be applied in this instance (as per BS5228). Of course, given the height of the bund and the fact that plant will be located as close to the bund as possible, the real figure of attenuation may be considerably higher.

5.2 **BS4142:2014 Assessment**

5.2.1 Table 5.3 overleaf includes the assessment of the worst-case noise levels associated with the proposed development against the background noise levels as per table 4.1.

5.2.2 All distances used in the calculations presented in Table 5.3 have been produced based on the location of the activity on the revised proposed site layout drawing which details the location of certain activities.

5.2.3 As stated in Section 1.2.6, typical operations are to primarily comprise the operation of the loading shovel/excavators and tipping. The operation of the mobile crushers, scalpers etc. is generally only expected to run 3/5 days a month. However, as these will be the days on which noise associated with the proposed development is at its highest, the noise assessment within this section is representative of this scenario.

5.2.4 The crusher and screening plant will be orientated in such a way to reduce noise levels as much as possible.

5.2.5 As stated in Section 5.1.1, typical noisy operations to be carried out in include:

- Operation of power screen and mobile scalping screens,
- Movement and handling of waste/aggregates using the sites loading shovel,
- Loading of HGVs with aggregates using the loading shovel.
- Unloading of inert material from HGVs.

5.2.6 As there is a limited amount of loading shovel/excavators onsite (combined total of 3no.) it is reasonable to assume not all operations will take place within the same hourly reference period. Therefore, in order to provide the most representative worst-case-scenario assessment a matrix approach has been utilised (overleaf) in order to provide a more descriptive assessment of the proposed operations, with the resultant noise level from a combination of activities being calculated. The combinations of activities have been produced based on conversations with site management.

5.2.7 As per BS4142:2014, an acoustic correction feature of 3dB may be applied as it is considered that the impulsivity of the operations is just perceptible from the existing noise climate.

Table 5.2 – Matrix Assessment of External Noise Levels based on Likely Operation of the Site for a 1hour reference period

	Calculated noise level at High St, Dragonby (dB A)	**Calculated noise level at High St, Dragonby (dB A)**	**Calculated noise level at High St, Dragonby (dB A)**	**Comment**
Operation	**Scenario 1 (Typical noise levels)**	**Scenario 2**	**Scenario 3 (Worst-case)**	
Movement of wastes/aggregates using loading shovel/excavator	**77.4 + 10log (45/60) = 76.2** **76.2 - 20log (685/3) = 29.0**	**77.4 - 20log (685/3) = 30.2**	**77.4 + 10log (45/60) = 76.2** **76.2 - 20log (685/3) = 29.0**	**Average location assumed for loading shovel (i.e. centre of the site).**
XR400S Powerscreen		**72.5 + 10log (30/60) = 69.5** **69.5 – 20log (645/10) = 33.3**	**72.5 + 10log (30/60) = 69.5** **69.5 – 20log (645/10) = 33.3**	**Based on orientation of plant observed during the site visit. This should be considered a worst-case as this is the highest noise level associated with the plant.**
Sandvik QE341			**71.7+10log(30/60)= 68.7** **68.7-20log(680/10) = 32.0**	**Based on orientation of plant observed during the site visit.**
Loading of material/wastes into HGV via loading shovel	**76.4 + 10log (15/60) = 70.4** **70.4 – 20log (740/10) = 33.0**		**76.4 + 10log (15/60) = 70.4** **70.4 - 20log (740/10) = 33.0**	
Tipping of inert material from HGVs	**80 + 10log(5/60) = 69.2** **69.2 – 20log (685/3) = 22.0**		**80 + 10log(5/60) = 69.2** **69.2 – 20log (685/3) = 22.0**	**Average location assumed for loading shovel (i.e. centre of the site).**

	Calculated noise level at High St, Dragonby **(dB A)**	**Calculated noise level at High St, Dragonby** **(dB A)**	**Calculated noise level at High St, Dragonby** **(dB A)**	**Comment**
Operation	**Scenario 1** **(Typical noise levels)**	**Scenario 2**	**Scenario 3** **(Worst-case)**	
Calculated sound level from typical site activity	**10log ($10^{29.0/10}$ + $10^{33.0/10}$ + $10^{22.0/10}$) = 34.7dB**	**10log ($10^{30.2/10}$ + $10^{33.3/10}$) = 35.0dB**	**10log ($10^{29.010}$ + $10^{33.3/10}$ + $10^{33.0/10}$ + $10^{22/10}$) = 36.1dB**	
Acoustic Correction Feature (BS4142:2014)	**+3**	**+3**	**+3**	
Rating Level	**37.7**	**38.0**	**39.1**	
Impact of screening	**-10 = 27.7**	**-10 = 28.0**	**-10 = 29.1**	
Excess over over worst case measured background	**41.4-27.7 = 13.7dB (A) below**	**41.4-28.0 = 13.4dB (A) below**	**41.4-29.1 = 12.3dB (A) below**	**Indicative of a low impact as per BS4142:2014**

5.2.8 As can be seen from Table 5.2, the noise levels associated with the proposed development are calculated as being significantly below the lowest measured background level at the nearest sensitive receptor and therefore is indicative of a low impact as per BS4142:2014.

5.2.9 It should be noted that scenarios 2 and 3 will only occasionally be experienced. Scenario 1 may therefore be considered the typical noise level associated with the site.

5.2.10 It should be noted that the noise levels calculated within the assessment likely comprise an over-estimation. Considering the large distance of soft ground between the source and receptor up to an additional 3dB (A) attenuation may be likely.

5.2.11 In addition, it may also be possible that a greater level of screening may be provided by the adjacent bunds rather than the figure used within the assessment. Whilst it is possible to calculate the figure based on height of machinery, receptor height etc., given the low level of the calculated noise source when compared to the background level it is not considered necessary in this instance.

6 Conclusion

6.1 Summary & Recommendations

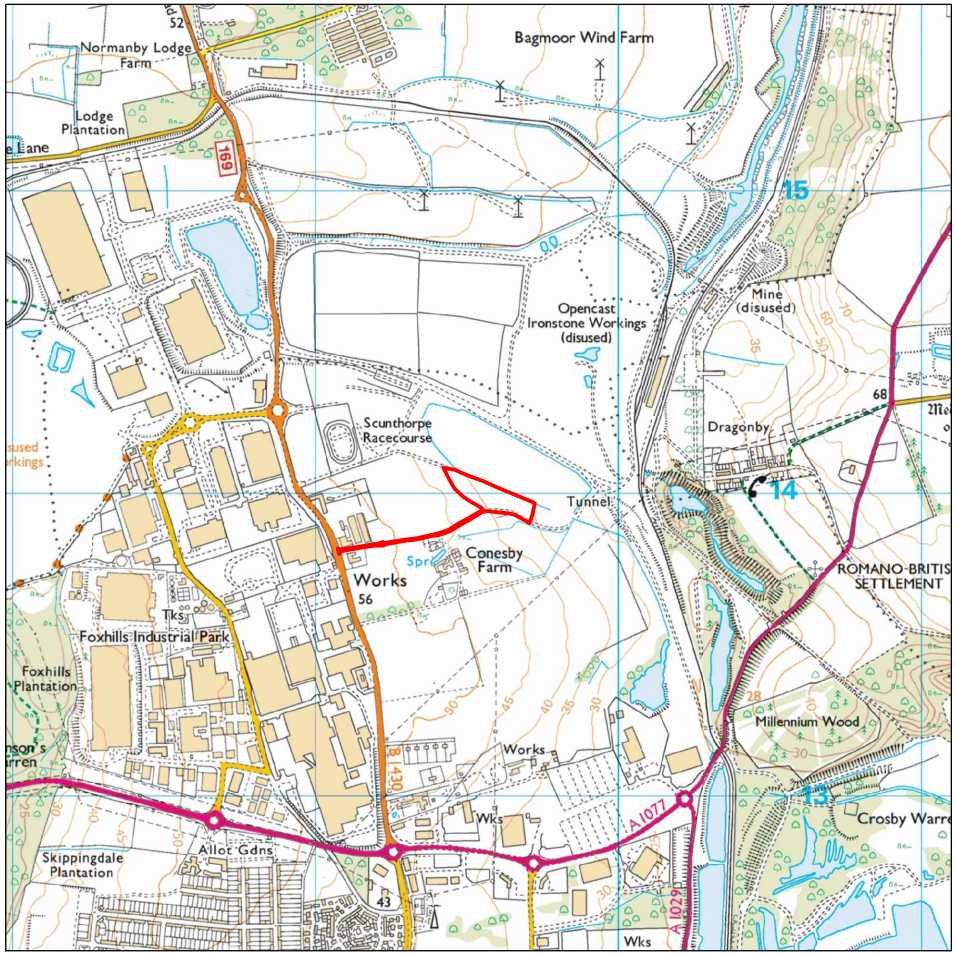
6.1.1 Oaktree Environmental have undertaken a Noise Impact Assessment based on the Guidance with BS4142:2014 and BS8233:2014 for the proposed development at Normanby Road, Scunthorpe, Lincolnshire, DN15 8QZ.

6.1.2 The noise levels associated with the proposed development are considered as having a negligible impact on the nearest residential receptors based on the lack of a significant exceedance over the measured background level.

6.1.3 Considering that noise emissions will be controlled and regulated by the Environmental Permit issued by the Environment Agency who will require a detailed Noise and Vibration Management Plan (NVMP) prior to the grant of the permit, there is no reason why the application be refused with regards to noise issues.

APPENDIX I

DRAWINGS



Scale Bar (1:25,000)

0 km 1 km 2 km

NOTES

REVISION HISTORY

Rev	Date	Init:	Description:
-	14.1.21	RS	Initial Drawing
A	21.1.21	RS	Application submission

KEY:

Site location

Oaktree Environmental Ltd
Waste, Planning and Environmental Consultants

DRAWING TITLE
SITE LOCATION MAP

CLIENT
Overhall Aggregates Ltd

PROJECT/SITE
Land off Normanby Road, Scunthorpe

SCALE @ A4	JOB NO	CLIENT NO
1:25,000	003	2715

DRAWING NUMBER	REV	STATUS
2715-003-01	A	Issued

DRAWN	CHECKED	DATE
RS	RS	21.1.21

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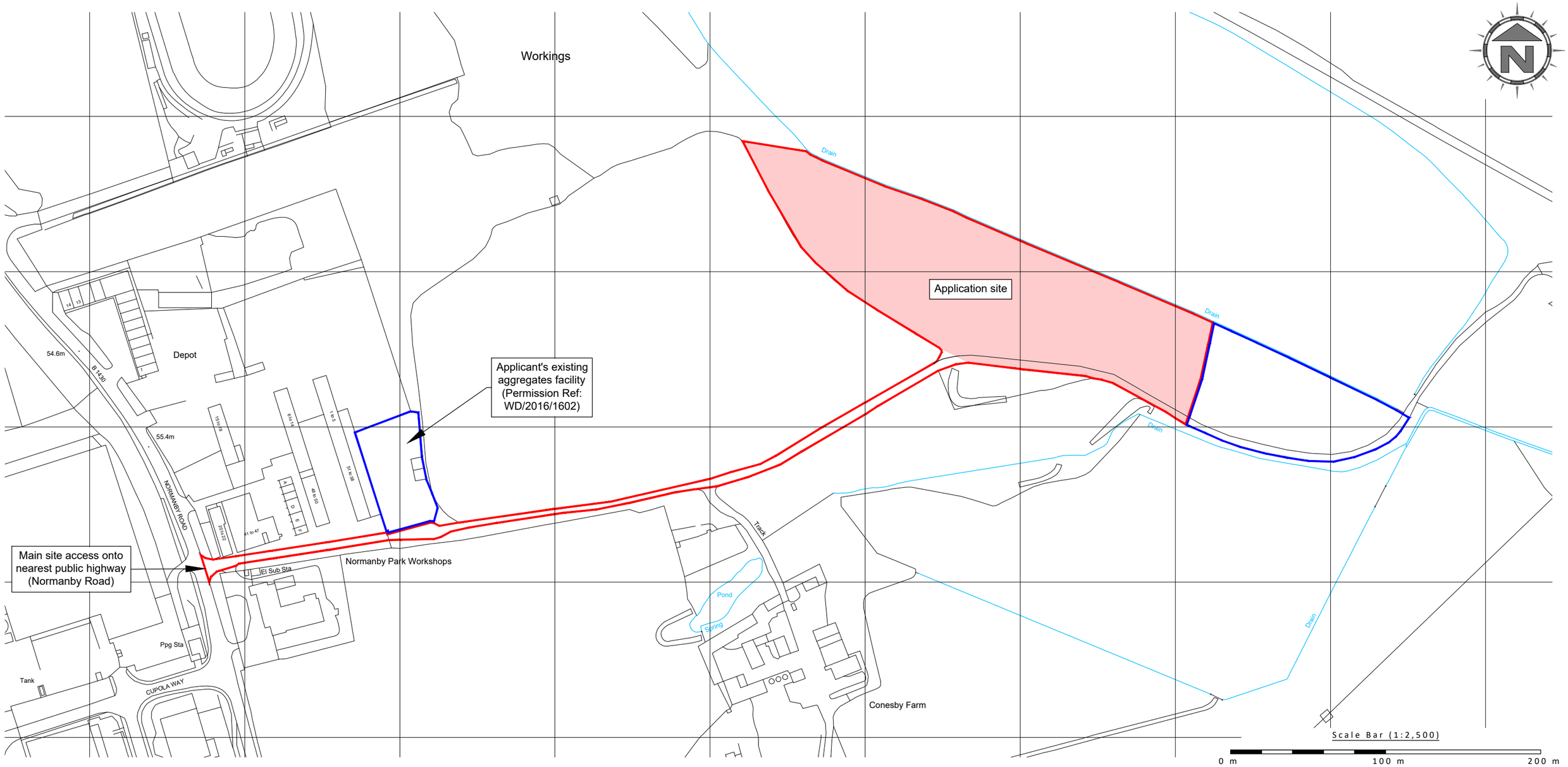

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DRAWING TITLE
SITE LOCATION PLAN

CLIENT
Overhall Aggregates Ltd

PROJECT/SITE
Land off Normanby Road, Scunthorpe

SCALE @ A3	JOB NO	CLIENT NO
1:2,500	003	2715
DRAWING NUMBER	**REV**	**STATUS**
2715-003-02	B	Issued
DRAWN	**CHECKED**	**DATE**
RS	RS	21.01.21

KEY:

- Planning application boundary
- Other land within the control of the applicant

NOTES
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REVISION HISTORY

Rev	Date	Init:	Description:
-	14.1.21	RS	Initial drawing
A	19.1.21	RS	Planning application submission
B	21.1.21	RS	Minor amendment