

Brocklebank & Co. (Demolition) Limited
Brocklebank Material Recycling Facility
Noise Management Plan

Document Ref: 203381/NMP

September 2023



AA Environmental Limited
Units 4 to 8 Cholswell Court
Shippon
Abingdon
OX13 6HX
T01235 536042
F01235 532849
info@aae-ltd.co.uk
www.aae-ltd.co.uk

Report for:

Brocklebank & Co. (Demolition) Ltd
Allende Way
Darnall
S9 5AP

Issue Date

September 2023

Document Reference

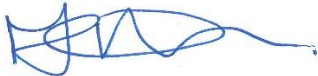
203381/NMP

Issued By

.....
Kristian Wood MSc BSc (Hons)

Reviewed By

.....
Ed Brown BSc (Hons)

Approved By

.....
Matthew Lawman MSc BSc (Hons)

AA Environmental Limited (Registered Office)

Unit 4 to 8
Cholswell Court
Shippon
Abingdon
OX13 6HX

T 01235 536042

F 01235 532849

E info@aae-ltd.co.uk

W www.aae-ltd.co.uk

Company No. 8474322

Table of Revisions

Issue	Description of status
1	Final

Contents

- 1.0 INTRODUCTION
- 2.0 SENSITIVE RECEPTORS
- 3.0 ASSESSMENT AND MITIGATION
- 4.0 MONITORING AND RECORDS

DRAWINGS

- 203381/D/001 Site Location Plan
- 203381/D/002 Site Receptor Plan
- 203381/D/003 Site Layout Plan
- 203381/D/005 Monitoring Location Plan

APPENDICES

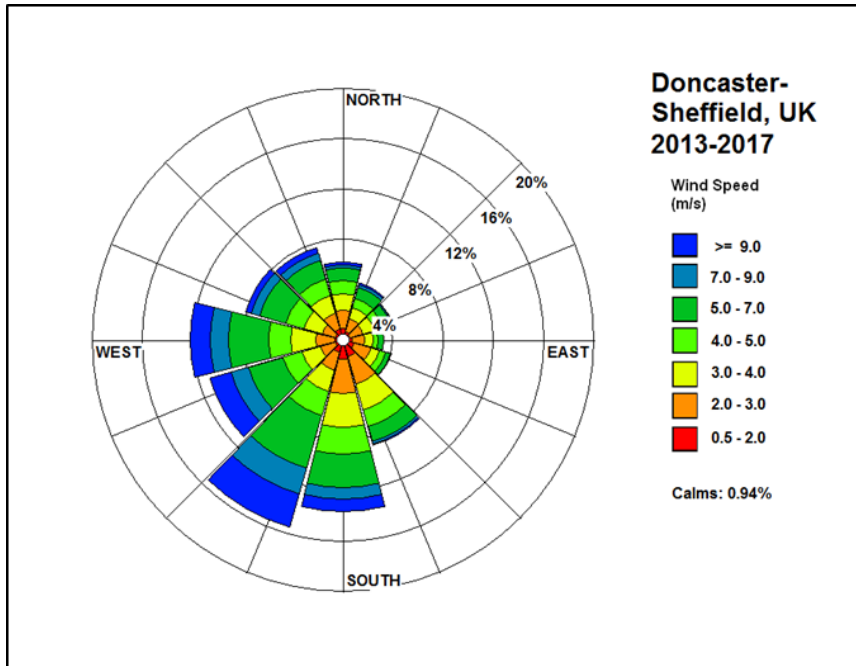
- Appendix A Noise Impact Assessment (S&D Garritt, September 2023)
- Appendix B Complaints Procedure and Form

1.0 INTRODUCTION

- 1.1 This Noise and Vibration Management Plan (NMP) has been produced as part of the Environmental Management System operated by Brocklebank & Co. (Demolition) Ltd (the Operator). It is the responsibility of the Operator, specifically the Site Manager, to implement this plan.
- 1.2 The site is on an industrial estate that extends to the north and west, with Sheffield City centre beyond. A housing estate has been developed to the east of the site, extending to Allende Way. The site is located alongside a large waste transfer station and there is unsurfaced land to the south used for car sales and open air storage.. The site location is presented in 203381/D/001.
- 1.3 The operations on site involve treatment and storage of non-hazardous, inert waste to produce segregated waste streams for onward recovery by manual and mechanical segregation, screening and washing. The washing process is a continuous process throughout the operational hours.
- 1.4 Management and control measures will be in accordance with the EA's online guidance 'Noise and vibration management: environmental permits' (January 2022). In September 2023 a BS4142 noise impact assessment was undertaken as part of the environmental risk assessment to assess impact of the soil wash plant. The assessment identified a low impact from the operational changes that had been implemented.
- 1.5 Vibration has been assessed however, its impact is considered low given the type, intensity and number of plant in operation.
- 1.6 This NMP plan has been developed and updated to detail the appropriate measures being, and require to be continuously, applied to minimise and control noise emissions.
- 1.7 It should be recognised that there are other noise emitters within the existing industrial estate which contribute to the noise environment and can give rise to potential loss of amenity. There are two other waste facilities operational by different Operators within the industrial estate and there are haulage operations associated with the industrial estate users.
- 1.8 This plan established the sensitive receptors surrounding the site, identifies the noise impacts by activity and outlines appropriate management and control measures to be implemented to ensure loss of amenity does not occur.

2.0 SENSITIVE RECEPTORS

- 2.1 The nearest receptors who are susceptible to noise emissions are the residents in the properties on the east of the site. The site and surrounding sensitive receptors are shown on drawing 203381/D/002.
- 2.2 Meteorological wind data for five years, has been acquired from the Met Office for the weather station in Doncaster Airport, which is considered representative of the site. The wind rose is presented below. The prevailing wind direction is from the west south west.



- 2.3 A BS4142 noise impact assessment was undertaken by S&D Garritt in September 2023. The activities are 3 dB or less than background noise confirming that the activities are not causing significant or adverse noise risk. The activities are considered low risk. Furthermore, when considering the risk with context, the assessment confirms the risk is low. Although the assessed low risk, a Noise Management Plan has been provided to maintain appropriate measures in line with EA guidance.

3.0 ASSESSMENT AND MITIGATION

Overview of operations and plant

- 3.1 The operations on site involve treatment and storage of non-hazardous, inert waste to produce segregated waste streams for onward recovery by manual and mechanical segregation, screening and washing. The washing process is a continuous process throughout the operational hours.
- 3.2 The site is afforded considerable screening at site boundary by a curved profile imperforate wall along the full length of the site boundary facing the nearest dwellings. There is also a 6 m high curved steel imperforate structure on top. The acoustic screening is shown in drawing 203381/D/003.

Impact assessment

3.3 The BS4142 assessment demonstrated that the noise levels over the operational period at the nearest sensitive receptors were monitored slightly above the background noise level. The mitigation was included within the assessment. Working controls, in line with best appropriate measures, were also in place as part of the site's existing management systems. The assessment concluded that the site operations do not have a significant or adverse impact to any receptors and the operations are considered low impact. Furthermore, there is considerable context to the site and the surrounding locale.

3.4 The sections below set out the controls to minimise noise emissions at the site.

General working controls

General appreciation of noise impact

3.5 As part of the site induction the importance of noise control will be stipulated along with the general working controls set out below, starting with working hours but also covering all aspects of this plan.

Working hours

3.6 The ambient noise level reduces outside the general working hours and emissions from the site can readily become the dominant noise source if they occur outside of these. To ensure the site operations do not cause nuisance the site will operate to strict working hours (in accordance with their Planning Permission). All operations are restricted to what is termed normal operating hours which are presented in Table 3.2.

Days	Hours
Monday to Friday	07:00 – 18:00 hrs
Saturday	07:00 – 13:00 hrs
Sunday and Public Holidays	No operations

3.7 A site policy has been rolled out to all staff regarding working hours. These hours are policed by the site manager.

Perimeter acoustic screens

3.8 The eastern boundary of the site along Allende Way benefits from a curved profile imperforate wall which acts as an acoustic barrier for the dwellings along Allende Way and Tudor Close. There is also an angled steel imperforate structure on top of this which provides additional screening by reflecting sound back down towards the site and increasing the effective height of the barrier. The whole site is afforded solid metal sheet perimeter fencing and all processing is below the screen heights.

Minimising drop heights and impact noise during loading

3.9 A source of impact and impulse noise relates to waste falling into the hopper or being loaded by front loader into vehicles. The plant operators are all trained to minimise drop heights, especially when loading minerals including aggregates with dense materials.

Traffic/plant general management requirements

3.10 All vehicles are instructed/managed by the Site Manager and weighbridge operator. All vehicles within the site will not exceed 10 mph. This reduces the risk of impact noise from vehicles moving during transport.

3.11 The site has a fully surfaced area, creating a smooth operational surface which reduces the risk of impact noise as plant moves across a rutted surface.

3.12 All machines and vehicles in intermittent use are shut down in the intervening period between work and throttled down to a minimum. There is a no idling policy on site and this is policed by the Site Manager.

- 3.13 In the event replacement or additional plant is authorised, the Operator will assess the noise profile and ensure it is consistent with those on site or less noisy. This is required to ensure the noise impact from the operations does not change.

The following additional controls will be implemented when operating plant:

- Only plant conforming with relevant national or international standards, directives or recommendations on noise emissions will be used;
- The operation seeks to reduce double handling of processed waste, ensuring duration and intensity of works is as efficient as possible;
- Site coordinate the acceptance of delivery/collection HGVs to reduce the amount of plant on site and to facilitate vehicle movement around site; and
- Daily inspection of plant, machinery and generators is undertaken in accordance with supplier's recommendations. Any faulty machinery will not be used until replaced and/or repaired.

Complaints process

- 3.14 Any complaint received will be reviewed. If substantiated it will be acted upon through liaison with the complainant and dealt with appropriately. The Site Manager will review all complaints received and directly seek to resolve them. The complaints procedure and form are shown in Appendix B.

Management of noise related incidents

- 3.15 Incidents (not involving complaints) and/or unexpected events will be undertaken in accordance with the Environmental Management System and corrective measures implemented as necessary. Non-compliance with the controls set out in this plan will be treated as an incident.
- 3.16 Where unacceptable noise from an item of plant has been identified, the cause will be assessed and additional mitigation implemented to appropriate attenuate levels consistent with those in the Noise Impact Assessment. If appropriate measures cannot be made the plant's operation will be suspended until such a time as corrections can be implemented or a further Noise Impact Assessment and management plan have been undertaken and concludes no significant impact.

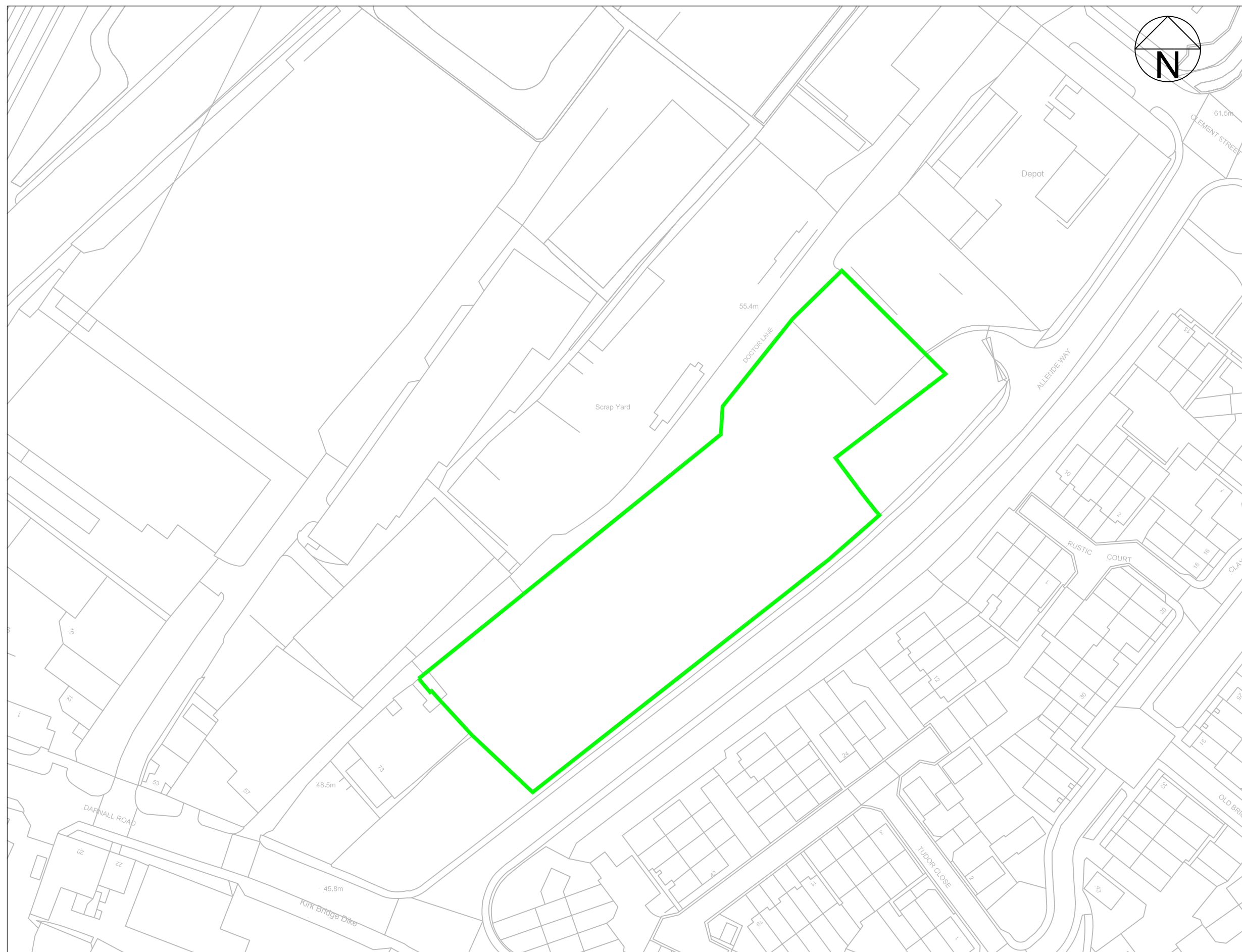
4.0 MONITORING AND RECORDS

- 4.1 Internal qualitative noise monitoring is to be undertaken on a daily basis during the routine site inspection. The monitoring positions are at the northern, eastern, southern and western boundary to the site (as shown on drawing 203381/D/005). This is undertaken by the Site Manager or a nominated operative. If a noise complaint is logged with the Site Team, further monitoring and inspection of works will be undertaken.
- 4.2 Further to the complaints procedure, a full review of operations is to be undertaken in the event that the site receives 2 substantiated complaints within 1 week. Substantiated complaints are defined as, either investigated by the Site Team and agreed; and/or a complaint and investigation brought by the Local Authority or Environment Agency. In the event the review identifies the need for noise monitoring, it will be undertaken by a competent third-party independent consultant.
- 4.3 The following general procedure will apply for the monitoring exercise:
- The noise survey will be carried out during standard working hours for a minimum of 15 minutes to measure representative noise levels of worst case construction operations;
 - Measurements will be undertaken in accordance with British Standard BS 7445-1:2003 '*Description and measurement of environmental noise. Guide to quantities and procedures*', with instrumentation meeting the standards set out in BS EN 61672-1: 2013 '*Electroacoustics – Sound level meters. Specifications*';
 - Measurements will comprise of broadband indices L_{Aeq} , L_{A10} , L_{Amax} and L_{A90} . The equipment chosen will be a Class 1 noise level meter with a suitable traceable calibration certificate. Field calibration will also be undertaken and documented prior to and after measurements; and
 - When possible, the measurement position should be chosen to best represent the noise levels at the most exposed façade of the sensitive building to the operations. Alternatively, a free field

location with direct line of sight to the works should be sought in order to facilitate the calculation of noise levels at the receptor assuming a reasonable distance correction factor.

- 4.4 In the event of sustained noise issues or substantiated complaints, this NMP is reviewed and updated. The NMP would be issued to the Environment Agency for approval.

DRAWINGS



Key:
— Permit Boundary

Rev.	Details	Drawn	Date
		Chkd.	

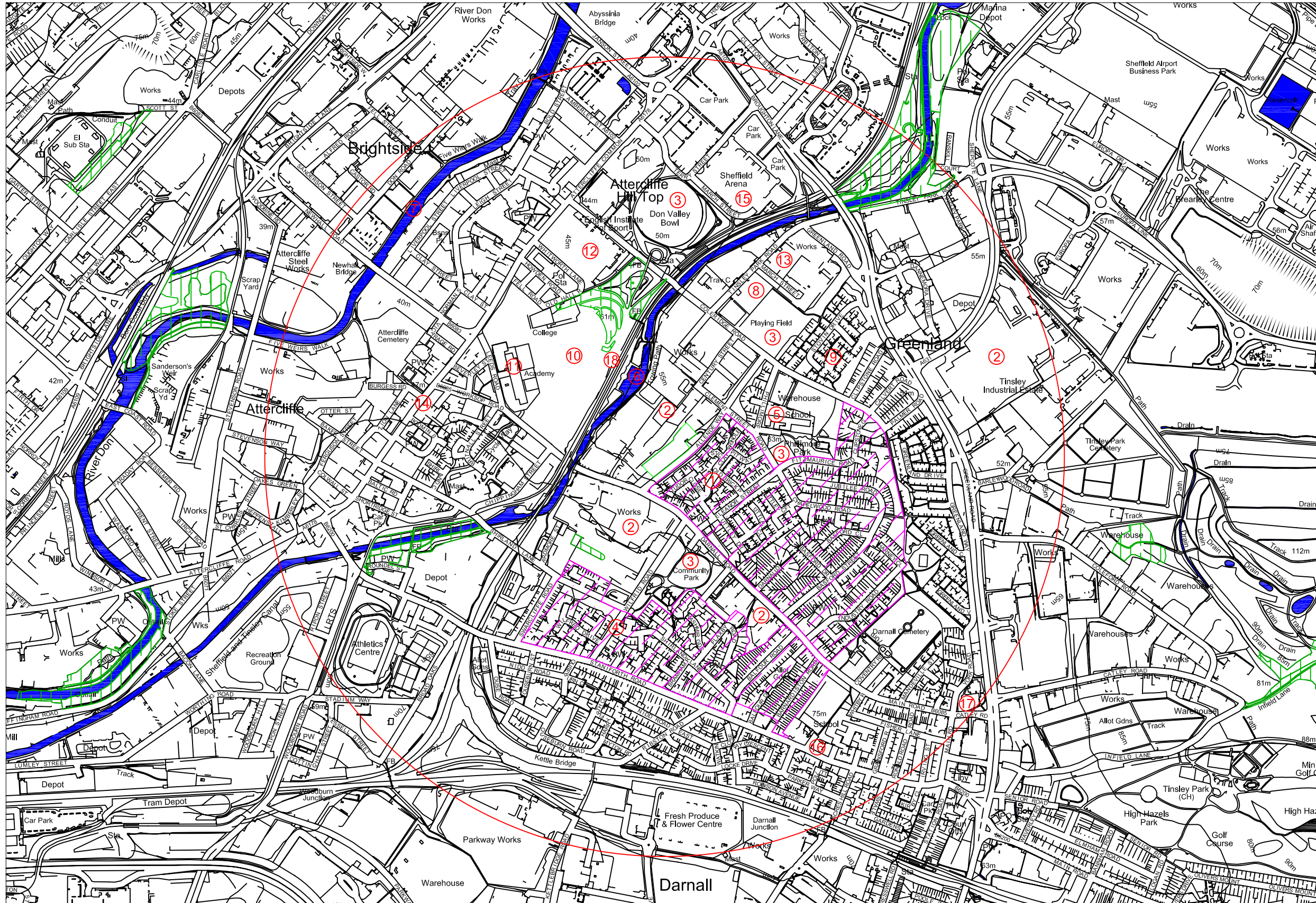
Project
203381
 Brocklebank Soil Washing Facility

Title
 Permit Boundary Plan

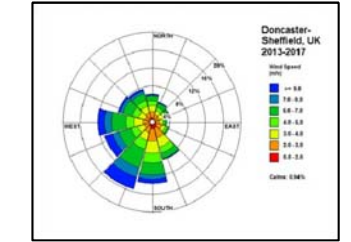


AA Environmental Ltd
 Units 4-8
 Cholswell Court
 Shippon Abingdon
 Oxon OX13 6HX
 T: (01235) 536042
 F: (01235) 523849
 info@aae-ltd.co.uk
 www.aae-ltd.co.uk

Scale	Date	Nov'23	Drng. No.	Rev.
1:1000@A3	Drawn	EB	203381/D/001	
	Chkd.	ML		



- Key:**
- Site Boundary
 - 1km Radius
 - RECEPTORS:**
 - ① Residential area North of Darnall Rd
 - ② Industrial Area
 - ③ Recreational Park
 - ④ Residential area South of Darnall Rd
 - ⑤ Phillimore Community Primary School
 - ⑥ Sheffield & Tinsley Canal
 - ⑦ River Don
 - ⑧ Avicenna Academy
 - ⑨ Residential area off Stovin Drive
 - ⑩ Sheffield Olympic Legacy Park
 - ⑪ Oasis Academy Don Valley
 - ⑫ English Institute of Sport Sheffield
 - ⑬ Bounce Sheffield Recreational
 - ⑭ Commercial / Industrial area off Attercliffe Rd
 - ⑮ Utilita Arena Sheffield
 - ⑯ Al-Mahad Al-Islami Girls School
 - ⑰ Darnall Health Centre
 - ⑱ Critical Infrastructure
 - ▭ Priority Habitats - Deciduous Woodland
 - ▭ Residential Receptors
 - ▭ Surface Water Bodies



Rev.	Details	Drawn	Date
		Chkd.	

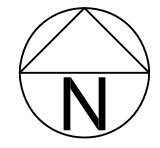
Project
 203381
 Brocklebank Soil Washing Facility

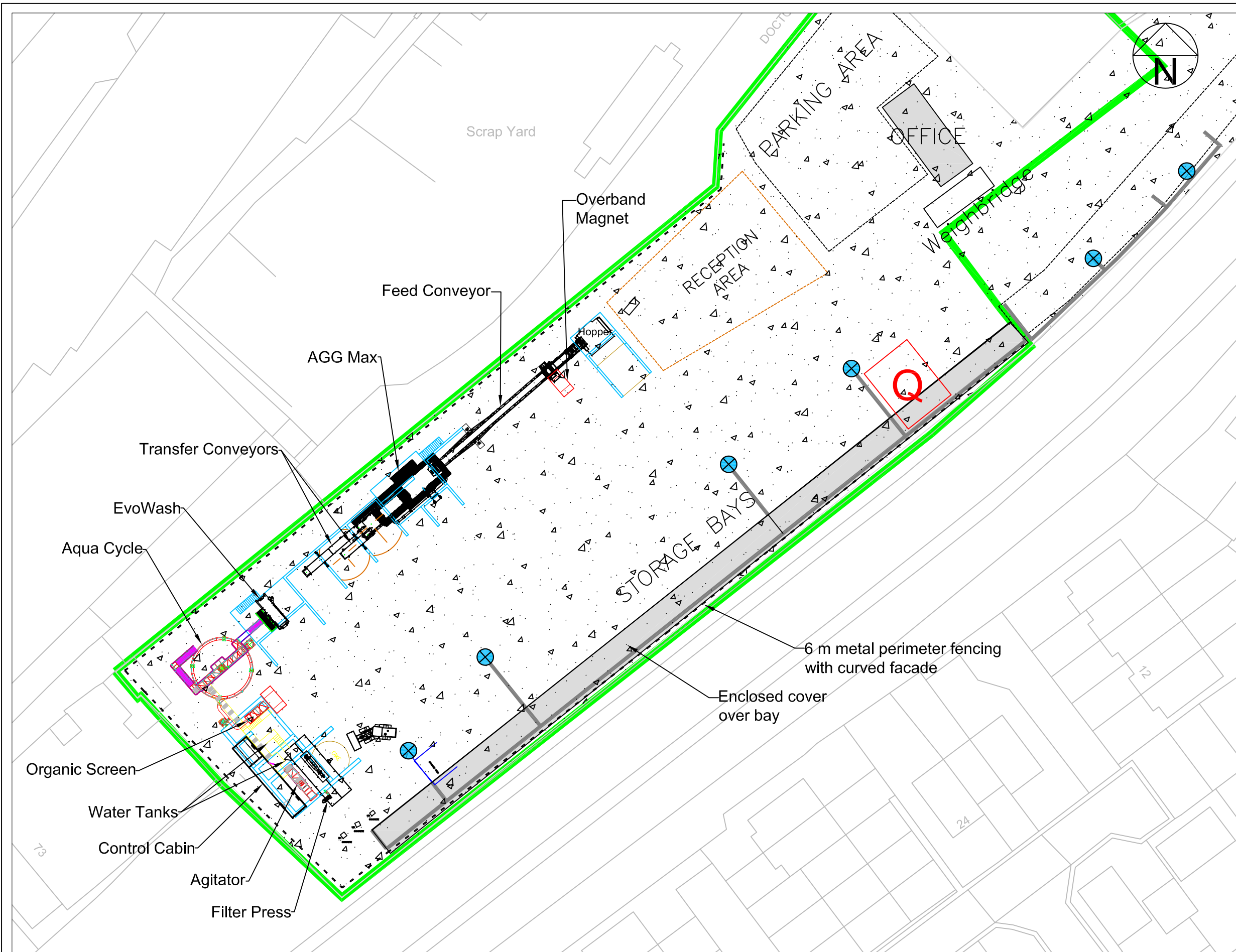
Title
 Receptor Plan



AA Environmental Ltd
 Units 4-8
 Cholswell Court
 Shippon Abingdon
 Oxon OX13 6HX
 T: (01235) 536042
 F: (01235) 523849
 info@aae-ltd.co.uk
 www.aae-ltd.co.uk

Scale	Date	Nov'23	Drg. No.	Rev.
1:10,000@A3	Drawn	Chkd.	203381/D/002	
	KE	EB		





- Key:**
- Permit Boundary
 - ◻ Skip Container
 - Q Quarantine Area
 - ⊗ Fixed Nozzle Misting System
 - - - 6 m high metal perimeter fencing

Rev.	Details	Drawn Chkd.	Date
------	---------	-------------	------

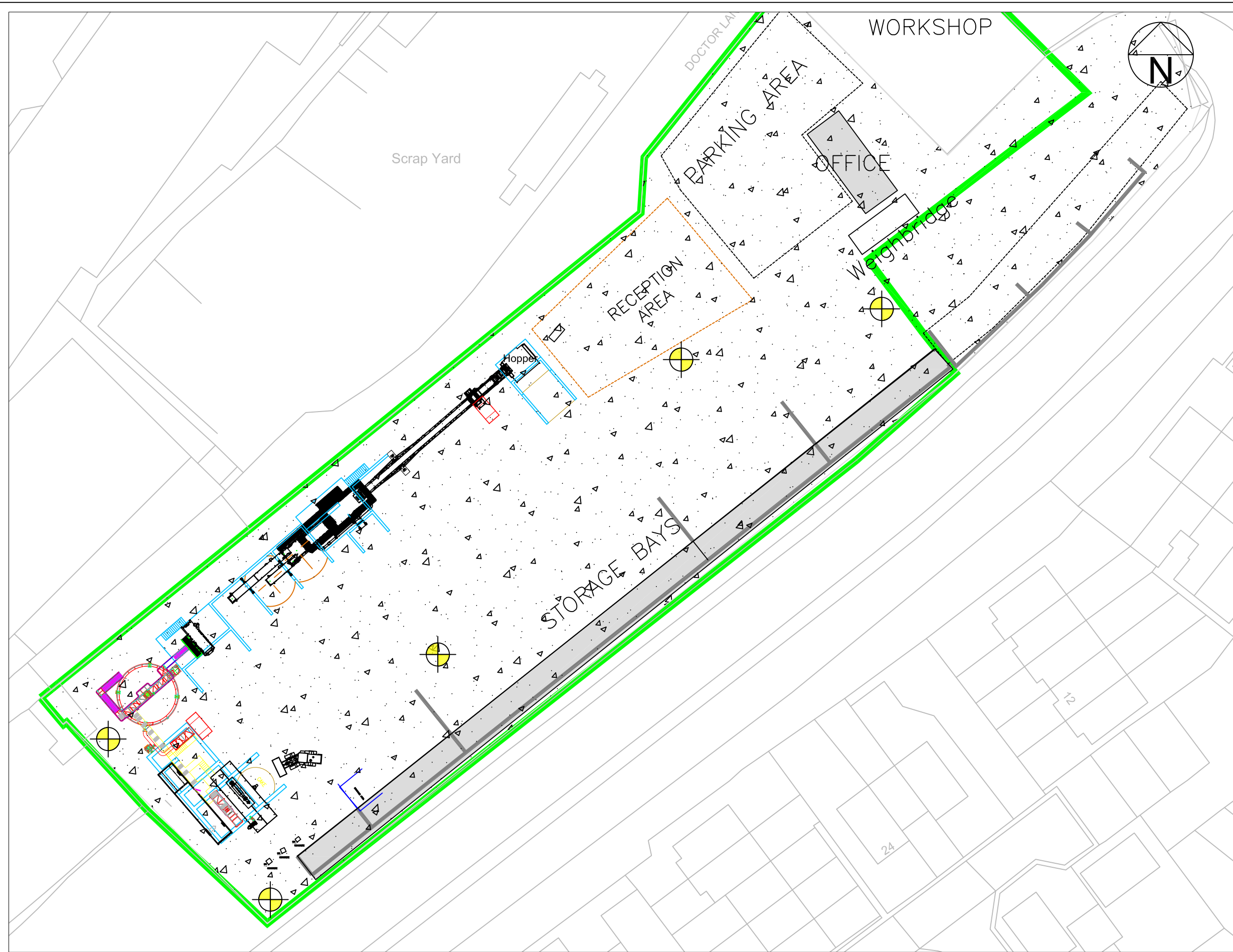
Project
 203381
 Brocklebank Soil Washing Facility



Title
 Site Layout Plan

AA Environmental Ltd
 Units 4-8
 Cholswell Court
 Shippon Abingdon
 Oxon OX13 6HX

T: (01235) 536042
 F: (01235) 523849
 info@aae-ltd.co.uk
 www.aae-ltd.co.uk

Scale	Date	Nov'23	Org. No.	Rev.
1:500@A3	Drawn	KE	Chkd.	EB
			203381/D/003	



- Key:**
-  Permit Boundary
 -  Dust / Noise Qualitative Monitoring Points

Rev.	Details	Drawn	Date
		Chkd.	

Project
 203381
 Brocklebank Soil Washing Facility

Title
 Site Monitoring Plan



AA Environmental Ltd
 Units 4-8
 Cholswell Court
 Shippon Abingdon
 Oxon OX13 6HX
 T:(01235) 536042
 F:(01235) 523849
 info@aae-ltd.co.uk
 www.aae-ltd.co.uk

Scale	Date	Nov'23	Drg. No.	Rev.
1:500@A3	Drawn	KE	203381/D/005	
	Chkd.	EB		

Appendix A
Noise Impact Assessment

NOISE IMPACT ASSESSMENT

of

EXISTING SOIL & AGGREGATE WASHING FACILITY

at

**BROCKLEBANK & CO DEMOLITION,
DOCTOR LANE,
SHEFFIELD**

Date of measurements: 9th & 17th to 22nd August 2023

Date of this report: 14th September 2023

Prepared for: Brocklebank & Co Demolition Ltd, AAE Environmental

Prepared by: David Garritt, BEng, MIOA

Members of the Association of Noise Consultants (ANC) & Institute of Acoustics (IOA)
Originally established in 1981. Company number 4688174.



CONTENTS

1.0	Introduction	3
1.1	Summary and Conclusions	3
1.2	Central Government Policies	5
1.3	BS 4142 'Methods for Rating and Assessing Industrial and Commercial Sound'	5
2.0	Site Location, Layout & Photographs	7
3.0	BS 4142: 2014	9
	(a) Qualifications and Experience	9
	(b) Sources Being Assessed	9
	(c) Subjective Impressions	12
	(d) Existing Context	13
	(e) Measurement Locations	14
	(f) Instrumentation	17
	(g) Operational Tests	17
	(h) Weather Conditions	27
	(i) Date and Time of Measurements	18
	(j) Measurement Time Intervals	18
	(k) Reference Time Interval	18
	(l) Specific Sound Levels	18
	Noise Contours / Maps	20
	(m) Background Sound Level	22
	(n) Rating Levels	24
	(o) Background Comparisons	26
	(p) BS 4142 Conclusions	26
	(q) Uncertainty	27
	Appendix 1 – Background Sound Level Measurements	29
	Appendix 2 – Sound Level Calculations	44

1.0 **Introduction**

Brocklebank & Co Demolition Ltd have an existing site at Doctor Lane, Sheffield. The site has been used for the processing and recycling of inert materials for many years with relevant permissions in place. In 2016 planning permission was granted for installation of a soil washing plant that did not fundamentally change the use of the site, but provided an improvement in efficiency and quality of output of material.

The site operates with a permit issued by the Environment Agency, who have requested an up-to-date noise impact assessment of the site operation.

The grid reference of the site is SK 38579 88715, Latitude 53.393867, Longitude -1.4213321. A site location plan, layout and photographs are shown later in this report.

This report has been prepared using the methodology and guidance of BS 4142: 2014 'Methods for and assessing industrial and commercial sound.' This is the most relevant standard and is usually called for by Local Planning Authorities and the Environment Agency for premises such as this. Information is also given on the overarching aims of the National Planning Policy Framework (NPPF).

1.1 **Summary and Conclusions**

Two different methods have been used to quantify sound output from the site. One method was to take sound levels at fixed distances from each area of plant and model their propagation to the nearest dwellings separately. The second method used was to measure the overall operation as a roaming measurement around the site, then use the results in calculations that assume the plant to be a line source of the full installation dimensions.

The nearest dwellings to the site are on Allende Way, Tudor Close and Rustic Court. They are relatively new build (circa 2009-2015 according to satellite imagery). The area to the north, west and south-west of the residential development is predominantly industrial. The various industrial premises are well established, and feature on the earliest available Google Earth imagery from 1999. Indeed, part of the closest residential development was previously occupied by industrial premises.

Given this existing context, it is perhaps unsurprising that the sound climate includes significant contributions from various existing industrial premises, which along with road traffic form the baseline against which Brocklebank sound is assessed.

Sources from Brocklebank were audible and contributed to the overall soundscape, but it appeared that the combination of other industrial sources had greater audibility and overall the sound climate was very much of mixed activity, with significant non-environmental sources.

Detailed calculations have been undertaken using a bespoke spreadsheet that gives sound level predictions at a large number of data points, so that noise contours/maps can be produced to illustrate predicted sound levels. In addition to this, three of the closest dwellings to Brocklebank have been selected for numerical predictions and individual assessment.

The specific sound levels from Brocklebank at the nearest dwellings are:

Specific Sound Level, dB LA_{eq,1hour}

Dwelling	Individual Source Measurement Method	Roaming Measurement Method
52 Allende Way	51.9	51.2
Tudor Close	53.2	51.1
Rustic Court	52.2	51.3

The typical background sound level at the nearest dwellings has been ascertained using attended and unattended sound measurements. The typical background level is 53 dB LA_{90,15mins}, caused by a combination of the mixed sources that this area is subject to.

The BS 4142 Rating Levels including appropriate corrections / penalties for acoustic character detailed in the main body of this report are:

BS 4142 Rating Levels, dB

Dwelling	Individual Source Measurement Method	Roaming Measurement Method
52 Allende Way	55	54
Tudor Close	56	54
Rustic Court	55	54

The Rating Levels described in this report are between 1 dB and 3 dB above the typical background, calculated to represent a reasonable worst-case but still accurate scenario. At other times, the Rating Level may approximate to the existing background.

Before the consideration of context, the numerical conclusions are that sound from Brocklebank is lower than what would be deemed to cause adverse impact. Given the context, historical use of this site and the very mixed source soundscape, it is judged that these exceedances above background are likely to be acceptable, being unlikely to cause further adverse impact than other existing sources, and that Brocklebank causes low impact in isolation when considering the mixed-use nature of the area.

1.2 **Central Government Policies**

The government's planning policies are described in the National Planning Policy Framework (NPPF) which includes consideration of potential adverse impacts of noise caused by new development. The NPPF makes reference to the Noise Policy Statement for England (NPSE) which includes an Explanatory Note describing three incremental categories of noise impact:

- No Observed Effect Level (NOEL) being the situation below which no effect caused by noise can be detected,
- Lowest Observable Adverse Effect Level (LOAEL) being the situation above which adverse effects caused by noise can be detected,
- Significant Observed Adverse Effect Level (SOAEL) being the level above which significant adverse effects caused by noise occur.

Stated objectives of the NPSE are:

1. Avoid significant adverse impacts, usually interpreted as calling for sound levels above SOAEL to be avoided.
2. Mitigate and minimise adverse impacts, usually interpreted as calling for noise mitigation to be used within the bounds of practicality for situations between LOAEL and SOAEL.
3. Where possible contribute to the improvement of health and quality of life, usually interpreted as calling for noise reductions to be made where possible for situations between NOEL and LOAEL.

Although introducing these subjective concepts for the assessment of noise impact, the NPPF and NPSE documents do not provide quantitative values against which the suitability of a site for development can be assessed in terms of sound levels.

BS 4142: 2014 'Methods for rating and assessing industrial and commercial sound' represents the most current and applicable quantitative guidance for demonstrating compliance with the overarching aims of the NPPF and NPSE for sound affecting dwellings.

1.3 **BS 4142 'Methods for Rating and Assessing Industrial and Commercial Sound'**

The noise rating method of BS 4142 is to measure the outdoor sound levels at noise-sensitive premises during the emission of noise from the industrial or commercial premises under investigation and measure the background sound level typical of that location in the absence of the industrial or commercial noise. A correction factor is applied if appropriate to the

measured levels for some acoustic features which affect its acceptability, described as tonal, impulsive or other characteristic features which are distinctive against the residual acoustic environment. The corrected measured level, the rating level, is compared with the background.

- If the rating level exceeds the background by around +10 dB or more then this is an indication of a significant adverse impact, depending on the context.
- A difference of around +5 dB is an indication of an adverse impact, depending on the context.
- The lower the rating level is relative to the background, the less likely it is that the industrial / commercial source will have an adverse impact.
- Where the rating level does not exceed the background, this is an indication of the industrial / commercial source having a low impact, depending on the context.

Situations where a noise impact assessment may need to be modified due to the context include those where:

- The residual sound levels in the absence of the industrial / commercial source are particularly high or low.
- The character of the residual sound has acoustic features comparable to those of the industrial / commercial sound.
- The sensitivity of the receptor is significant, and whether residential properties incorporate design measures that secure good internal or outdoor acoustic conditions.

2.0 Site Location, Layout & Photographs



View of Site From Top of Tank (Looking West)



View of Adjacent Site (North)



Vibrating Screen



View From High Level Walkway, Looking South



Material Stockpile and Noise Barrier (Looking South)

View Into Site from Entrance



3.0 **BS 4142: 2014 Survey**

BS 4142 is prescriptive in its requirements and methodology; Section 12 of the standard lists the information that is to be reported. This report adopts the same references and order as Section 12 of BS 4142.

The assessment is undertaken for the proposed site in its current operational condition.

(a) **Qualifications and Experience**

S & D Garritt Ltd are members of the Association of Noise Consultants (ANC). All work related to this report was undertaken by David Garritt.

David Garritt has been a member of the Institute of Acoustics since 2005 and holds an honours degree in Electronic and Computer Systems Engineering. David teaches acoustics at post graduate level on a part time basis for the Institute of Acoustics, sits on the Marketing and PR committee for the Association of Noise Consultants and is one of their media spokespeople. David has extensive experience in the preparation of surveys involving industrial sound sources directly comparable to the subject of this report.

(b) **Sources Being Assessed**

1. The source being assessed is a soil and aggregates washing plant that comprises several elements. The operational process is:
 - Waste products are transported into site via HGVs or smaller vans, the most common vehicle is an HGV tipper wagon.
 - The raw materials are deposited to the east end of the processing plant and loaded into a hopper by tracked excavator.
 - The products make their way through the processing plant via a series of conveyors, sizing and vibrating screens from east to west.
 - Organic waste products are removed by a floating process using a tank to the west of the site.
 - Processed clean soil is recovered at the end of the process via compaction machinery.
 - The various finished, cleaned and sorted products are loaded into

various storage bays or directly into HGVs for transportation out of site using a wheel loader. Approximately 25 vehicles per day are loaded, most of which are eight wheel tipper HGVs at an average rate of around three per hour. To maximise efficiency, where possible the HGVs enter site fully loaded with raw materials for tipping, then the same vehicles are reloaded with processed product before leaving site.

Two different methods have been used to quantify sound output from the site:

One method was to take sound levels at fixed distances from each area of plant and model their propagation to the nearest dwellings separately, with overall sound levels calculated by logarithmic addition of the different sources (i.e. on an energy basis). Measurements were taken at a distance where the source being measured would behave as a point source, but with contributions from other plant areas minimised as far as practicable.

This method allows for the accurate calculation of sound levels from each area including their relative heights and proximity to each dwelling. The contributions from each source can be seen separately and rating level corrections or penalties applied on a per-source basis. On a site such as this with several noise sources in close proximity to each other, it is inevitable that each measurement will include some contribution from adjacent sources, so this method represents the worst-case scenario.

The second method used was to measure the overall operation as a roaming measurement around the site, then use the results in calculations that assume the plant to be a line source of the full installation dimensions. This method captures all of the sound sources on site, removes uncertainty from sound bleed between separate fixed measurement positions and provides a useful overall average of sound across the operation. The disadvantage of this method is that contributions from each source cannot be separated and some overall averaging is required for distance decay and effective barrier height calculations.

The predictions at the nearest dwellings using each of these two methods can be compared to reduce uncertainty in the survey conclusions. In addition to this, measurements were taken at the nearest dwellings along with observations of audible sources to provide an additional data point for comparison.

The measurements taken on the operational site are shown below as overall dB LA_{eq,T} quantities with each item in continual operation. The predictions of sound level at the nearest dwellings have been undertaken using third octave data for more accurate calculations of noise propagation, details of which are shown in the appendices of this report.

Source Sound Pressure Levels, dBA

Measurement Description & Distance	Latitude	Longitude	Sound Level, dB LA_{eq}
Excavator & East Machinery, 10m	53.39392	-1.421416	81.1
Aggmax 83sr Screen, 10m	53.39374	-1.421882	77.0
Vibrating Screen, 2m	53.39361	-1.422155	78.4
Vibrating Screen, 5m	53.39361	-1.422155	73.7
In Front of Vibrating Screen, 10m	53.39361	-1.422155	74.3
Main Water Top Up Pump, 1m	53.3935	-1.422275	74.9
Tracked Loader, Loading Rubble (South Facing Dwellings), 10m	53.3936	-1.42181	80.2
All Activity, Roaming			76.4
All Activity Except Loading, Roaming			73.5

Note that measurements of the vibrating screen taken at the close distances of 2 m and 5 m were on a walkway slightly above the vibrating elements. The measurement used in the prediction of sound levels affecting dwellings were the more worst-case measurements taken at 10m in front of the vibrating screen, at a position that faces the dwellings and where the vibrating screen installation will behave as a point source.

2. The soil and aggregates washing plant is in operation Monday – Friday from 07.00 to 16.30. Site gates are generally opened at around 06.00, operation does not commence until 07.00. After the processing plant stops at 16.30, cleaning and maintenance generally takes place until around 18.00. Saturday mornings are used for further cleaning and maintenance as required with no processing operation. There is no night-time operation of the plant.

3. The operation will be continuous throughout the assessment period of one hour during the daytime. The loading activity we measured and have used in the calculation process includes some movement and loading of large boulders/rocks into HGV tipper wagons before loading of finer aggregate, which provides a worst case scenario. This loading activity is not continuous. For the purpose of assessment, an on-time of this loading activity of 45 minutes per hour has been assumed.

Our on site observations and discussion suggests this represents the reasonable worst case. We observed the wheeled loader undertaking some other loading / sorting activities, but these produced lower overall sound levels that also would not attract the same level of penalty for acoustic character and so would give more favourable overall results.

4. All plant items, machinery and aspects of the operation were operating at their normal full load / duty. It may be noted that the loader was being used

with significant revs and throttle openings in order to move large amounts of heavy material in the most time efficient manner practicable since the site was busy during our visit. Again, this serves to provide a reasonable worst-case scenario .

The excavator was being used on top of a material stockpile, which does occur as needed but is generally not typical. This serves to slightly reduce the overall effective barrier height of the perimeter fence, so gives a slightly higher prediction of sound level at dwellings than when the excavator is closer to ground level.

5. All of the sound sources are situated outdoors. There is a noise barrier constructed along the site perimeter, details of which are given in section e) of this report.

(c) **Subjective Impressions**

Attended measurements and subjective impressions were taken at the nearest dwellings to the site. The sound climate at the nearest dwellings comprises mixed sources, with some contribution to the baseline from environmental road traffic, but also significant audibility of various industrial sources.

There are many industrial premises in the vicinity of the nearest dwellings and attention was paid to the character of the industrial sources to try and ascertain the subjective audibility of Brocklebank.

It was judged that contributions from Brocklebank could be heard against the baseline provided by other industrial premises and road traffic, with reasonably low-level audibility of process and typical operational sound given the close proximity of the site. We believe that when the loader was loading rubble into an empty wagon, the peaks from bangs and crashes was clearly audible, with some subjective impulsivity noted.

While sources from Brocklebank were audible and contributed to the overall soundscape, it appeared that the combination of other industrial sources had greater audibility and overall the sound climate was very much of mixed activity with significant non-environmental sources.

Some measurements of sound were taken at the nearest dwellings, which the calculated specific sound levels from Brocklebank can be compared to later in this report to provide quantitative comments on their contribution to the overall soundscape.

(d) **Existing Context**

The nearest dwellings on Allende Way, Tudor Close and Rustic Court are relatively new build. Internet satellite imagery suggests they were constructed at some point between 2009 and 2015, showing the beginnings of a building site in 2009 and completed dwellings in 2015.

There are older more established dwellings to the east at a distance of 200m – 300m from the Brocklebank site, where sound from the site will be considerably lower than the closest dwellings forming this assessment.

The area to the north, west and south-west of the residential development is predominantly industrial.

The various industrial premises are well established, and feature on the earliest available Google Earth imagery from 1999. Indeed, part of the closest residential development was previously occupied by industrial premises.

The Brocklebank site has been in use for many years and was previously used for heavy duty crushing and screening of inert materials. The newer, currently installed plant represents an improvement in efficiency and quality of finished product. It is highly likely that a decrease in overall sound levels has been achieved by installation of this new equipment and construction of the perimeter noise barrier.

Our investigation of the area revealed a large number of active industrial premises, many with audible sound output at the closest accessible public land to them.

The boundary of the new residential development with Allende Way includes an earth bund and fairly dense tree/shrub planting to provide visual screening between the housing estate and the surrounding industrial uses. The industrial nature of the surrounding area is however visible from nearby roads around the area.

Given this existing context, it is perhaps unsurprising that the sound climate includes significant contributions from various existing industrial premises, which along with road traffic form the baseline against which Brocklebank sound is assessed.

The site location means that significant contribution to the sound climate from various industrial premises should be expected and may indeed have been anticipated by the Local Planning Authority when granting permission for the residential development. Nevertheless, it is desirable for Brocklebank sources to not be overly and separately dominant above all others, with noise impact to the nearest dwellings practicably controlled.

(e) **Measurement Locations**

Detailed calculations have been undertaken using a bespoke spreadsheet that gives sound level predictions at a large number of data points, so that noise contours/maps can be produced to illustrate predicted sound levels. In addition to this, three of the closest dwellings to Brocklebank have been selected for numerical predictions and individual assessment. Two of these are the positions used in the noise report prepared by others that was submitted as part of the planning application, the third position lies between these two and is the closest dwelling to the site.

These individual receptor locations and their latitude / longitude details are shown in the table below.

Dwelling	Latitude	Longitude
52 Allende Way	53.393084	-1.421936
Tudor Close	53.393399	-1.421077
Rustic Court	53.393835	-1.420231

Allende Way



Rustic Court



Some of the sources at site are very large and so the distance between the receptors and the sources varies depending on which part of the sources is being considered.

The method used in this assessment is to take measurements of each source at a distance where they will behave as point sources, enabling accurate calculation of sound decay due to distance from the centre of each source. The second set of measurements was taken roaming around the operational site, with the source then being treated as one large source with major dimension of around 60m. These two sets of predictions can be compared to minimise uncertainty.

The distances between each section of the overall installation and the nearest dwellings are shown overleaf.

Distance Between Source and Receiver, metres

Source	Allende Way	Tudor Close	Rustic Court
Front of Vibrating Screen	59	75	130
Main Water Top Up Pump	51	80	140
Aggmax 83sr Screen	73	65	110
Tracked Loader, Loading Rubble	62	45	62
Excavator, East Machinery	99	62	79

Decay due to distance has been calculated using the correct formula for hard ground, being $\text{Decay} = 20 * \text{Log} (\text{Distance Ratio}), \text{dB}$.

Site photographs and location plans are shown in section 2 of this report.

The site boundary benefits from an imperforate noise barrier comprising two parts. There is a curved profile imperforate wall that runs the full length of the site boundary facing the nearest dwellings, which we are informed was designed to have improved sound attenuation properties and forms part of the original planning consent. There is also a taller profile steel imperforate structure with angled, diagonal towards horizontal extension at the top of the vertical element, of height approximately 6m. This extension will improve the efficiency of the profile steel barrier, reflecting sound back down towards the site and increasing the effective height of the barrier.

The land profile has a very slight downward gradient from east to west, which becomes slightly steeper at the far west near the dwelling at 52 Allende Way. This means that the barrier effect to this dwelling at the far West will be slightly greater at other positions. The dwelling to the far east at Rustic Court occupies a position around 1 m higher in elevation than the site boundary. For this reason, the height of this receptor used in the calculations has been increased by 1m (i.e. making the results less favourable) to take account of this change in land elevation.

The site boundary where the barrier is located is generally at a very slightly higher land elevation than the land on site where the closest part of the washing plant is located perpendicular to it. This also has the effect of slightly increasing the overall effective height of the barrier.

For the purposes of calculation, the treatment to the boundary of the site facing the nearest dwellings modelled as a single imperforate noise barrier with no absorption of height 6m, which considering the above factors appears likely to be reasonably conservative.

The different parts of the soil washing plant are of various heights, with the dominant source of sound often being around half of the overall equipment height. For the purposes of calculation, the height of the dominant source above ground level has been selected by analysis of each different part of the

equipment and a reasonable worst-case height selected, generally higher than the mid point.

Curved Profile Acoustic Wall



Profile Steel with Angled Top



Background Measurements

Background sound levels were measured using an unattended survey, with the equipment located at the west edge of the site as far away from other existing industrial sources as practicable, mounted on a tripod above the west perimeter stone wall, with a clear view of the receptor at 52 Allende Way.

Additional short duration attended measurements were taken at the nearest dwellings.

The background measurement methodology chosen is designed to be as representative of the background climate at the nearest dwellings as possible. The important quantity when measuring background sound levels is the dB LA_{90,15mins}, which is defined as the sound level that is exceeded for 90% of each 15 minute measurement period, thereby being less affected by precise proximity to the nearest local roads.

Considerable analysis has been undertaken to eliminate unattended measurements that were adversely affected by their proximity to the Brocklebank and other industrial sources.

Analysis has been undertaken of background sound levels in the period immediately before and after Brocklebank operating hours, also with analysis of levels on a Saturday when the Brocklebank plant is not operational.

These various data points have been used in conjunction with those given in the original report submitted for planning to arrive at a representative, typical background sound level at dwellings located in this mixed source environment.

(f) **Instrumentation**

The equipment used is shown in the table below.

Equipment Description	Type number	Manufacturer	Date of expiration of Calibration	Calibration Certificate Number
Sound Level Meter	XL2 TA s/n A2A-10019-E0	NTi Audio	14.08.2024	178637
Microphone	MK 224 s/n 213144A	Cirrus Research	14.08.2024	178634
Calibrator	4231 s/n 2402706	Bruel & Kjaer	24.07.2024	196005

(g) **Operational Tests**

The reference level of the calibrator is 94 dB SPL at 1000 Hz.

The meter readings with the calibrator before and after measurements were consistent at 94.0 dB SPL.

(h) **Weather Conditions**

The weather conditions were suitable for the monitoring of outdoor sound. There were no conditions likely to lead to inaccurate background sound measurements through temperature inversions, fog, frozen ground or snow. Wind speeds were generally within the desirable 5 ms⁻¹ target with only brief periods exceeding this for peak speeds on each day.

The summary of weather conditions is given below:

Date	Temperature °C		Wind Speed (m/s)			Direction	Precipitation mm	Cloud Cover %
	Min	Max	Lowest	Typical	Highest			
09/08/2023	10	20	0.9	3.3	6.0	W	0.0	50 - 75
10/08/2023	16	26	0.8	2.7	5.4	S	0.0	25 - 50
17/08/2023	14	21	3.0	4.6	6.0	E	0.0	50 - 75
18/08/2023	13	18	1.6	4.5	8.3	E	2.2	75 - 100
19/08/2023	16	21	3.2	5.0	7.5	SSW	2.8	50 - 75
20/08/2023	14	21	1.5	2.3	6.6	SW	0.0	25 - 50
21/08/2023	13	21	1.8	2.9	5.8	SW	0.0	25 - 50
22/08/2023	14	19	1.9	3.9	6.6	WSW	0.0	50 - 75

(i) **Date of Measurements**

Sound levels were measured in the form of continuous sound monitoring for a period of 7 days from 17.00 hours on Wednesday 9th August to 19:15 on Thursday 10th August, then 14:00 on Thursday 17th August to 09:00 on Tuesday 22nd August. The break was due to a power outage on site that cause the sound level meter to switch off until we attended site and restarted the equipment.

Additional attended monitoring and measurements of the sound sources was undertaken on Wednesday 9th August and Tuesday 22nd August.

(j) **Measurement Time Intervals**

Background sound levels were measured over continuous 15 minute intervals in accordance with BS 4142: 2014

(k) **Reference Time Interval**

The reference time interval is 1 hour during the daytime in accordance with 3.8 of BS 4142. There is no night time working.

(l) **Specific Sound Levels**

1. Measured sound levels for each source are shown in table below, reproduced from section b).

Measurement Description	Sound Level, dB LA_{eq}
Excavator & East Machinery, 10m	81.1
Aggmax 83sr Screen, 10m	77.0
Vibrating Screen, 2m	78.4
Vibrating Screen, 5m	73.7
In Front of Vibrating Screen, 10m	74.3
Main Water Top Up Pump, 1m	74.9
Tracked Loader, Loading Rubble (South), 10m	80.2
All Activity, Roaming	76.4
All Activity Except Loading, Roaming	73.5

Measurements taken at the nearest dwellings showed ambient (time averaged) sound levels that included all sources including environmental and other industrial premises of:

- 65 – 68 dB LA_{eq,15min} at 52 Allende Way. The dominant source contributing to this time averaged level at this location was road traffic passing immediately adjacent to the measurement position.
- 55 – 57 dB LA_{eq,15min} at Tudor Close. The sound climate at this position and at Rustic Court was mixed, comprising some audibility of environmental sources such as road traffic, with contributions from various industrial premises being subjectively slightly more dominant. Sound from Brocklebank was audible, but subjectively lower in level than other existing industrial premises.
- 54 – 56 dB LA_{eq,15min} at Rustic Court with sources as noted above.

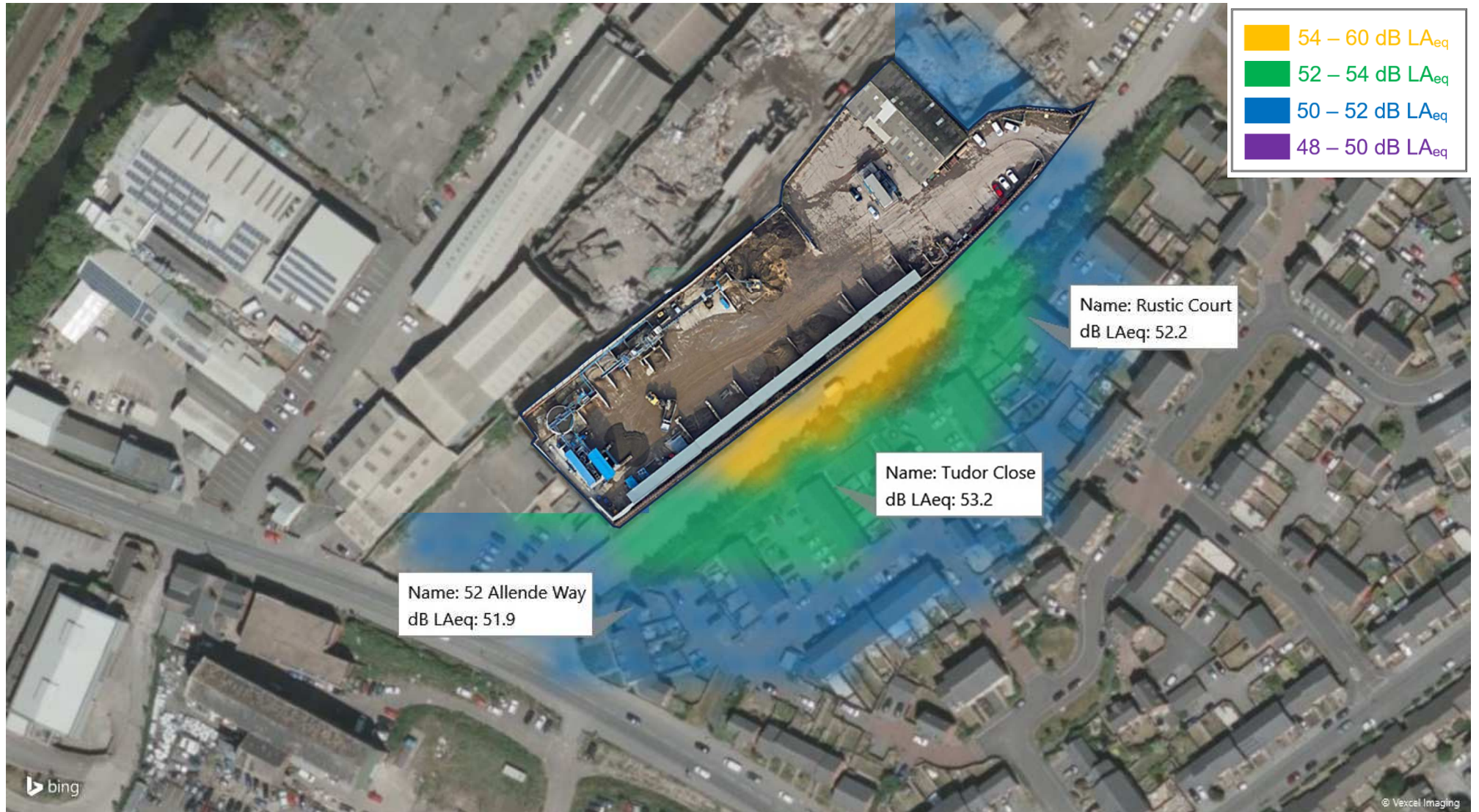
Residual sound levels do not form part of this calculation process since the specific sound levels from Brocklebank have been calculated using measurements taken at source, where residual levels do not affect the results. The time average sound levels measured at the nearest dwellings with observations on relative audibility of Brocklebank can be used as a datapoint in the commentary of sound levels later in this section.

The specific sound levels of the overall Brocklebank activities inclusive of all sound sources are calculated in the appendices of this report. Noise maps or contours for the area are shown overleaf.

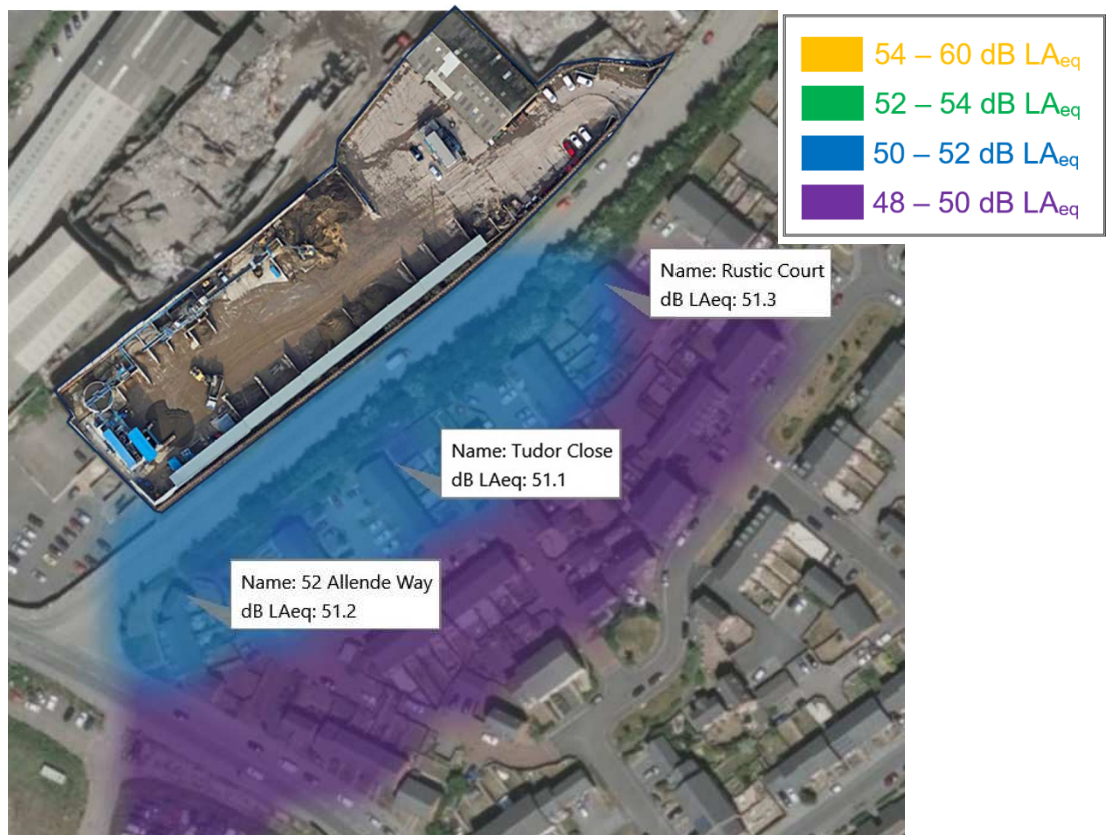
The specific sound levels at three of the closest receptors selected for individual commentary and comparison are summarised below for the two different methods of using individual source measurements and overall roaming measurements on site:

Specific Sound Level, dB LA_{eq,1hour}

Dwelling	Individual Source Measurement Method	Roaming Measurement Method
52 Allende Way	51.9	51.2
Tudor Close	53.2	51.1
Rustic Court	52.2	51.3



Method Using Roaming Measurements of Sources



Measurements using the two different methods of production are in broad agreement with each other. The predictions using measurements of each source individually are slightly higher (i.e. worse). This may be expected due to some contributions from other sources on site and that each of the sources was operating under reasonable worst-case scenario. The roaming measurements may be more indicative of typical operation.

The measurements of overall sound climate taken directly at Tudor Close and Rustic Court were 55 – 57 dB LA_{eq,15min} and 54 – 56 dB LA_{eq,15min} respectively, with the notes that sound from Brocklebank was audible but not dominant. This suggests that the predictions of specific sound level being 51 – 53 dB LA_{eq,15min} are accurate or perhaps slightly onerous / worst case depending on position and level of activity at the site.

5. The methods of determining the specific sound are in accordance with section F.2.1 of BS 5228-1 which describes methods of quantifying the sound levels of sources on a site. Three alternative means of obtaining the necessary data on source sound levels are described in BS 5228 as:
 - (a) Carry out sound measurements on similar plant items operating in the same mode as those proposed at the application site.

- (b) Use data on typical sound levels of various plant items as provided in Annexes C and D of BS 5288-1.
- (c) Use data on the maximum permitted sound levels of plant items under EC Directive 2000/14/EC[11].

Section F.2.1 advises that “The method given in item (a) is likely to provide the most accurate prediction” and is used in this assessment for determination of the specific sound levels, with measurements taken directly from the sources in operation at the site.

(m) **Background Sound Level**

Sound levels were measured in the form of continuous sound monitoring for a period of 7 days from 17.00 hours on Wednesday 9th August to 19:15 on Thursday 10th August, then 14:00 on Thursday 17th August to 09:00 on Tuesday 22nd August. The time intervals of background measurements were 15 minutes.

The full results are shown in tabular form in the Appendices to this report. The requirements of BS 4142 : 2014 are that typical, representative values are used for background sound level in the assessment, not the lowest or necessarily modal values.

During our attended measurements at the nearest dwellings, the background sound levels were: *Allende Way* 52 – 54 dB LA_{90,15min}, *Tudor Close* 52 – 54 dB LA_{90,15min} and *Rustic Way* 51 – 54 dB LA_{90,15min}. These background sound levels were taken during the normal working daytime and included contributions from all sources including environmental, other industrial premises and to a lesser extent Brocklebank. Given that sound source associated with Brocklebank were not dominant at these positions, it appears that these attended measurements are likely to be representative of the typical sound climate at the dwellings.

The unattended measurements were taken at a position on the south-west boundary of the Brocklebank site as far from industrial sources as possible above a stone wall with a clear view of Allende Way. This location was chosen as being the most useful, representative location that could be chosen for unattended measurement that was also secure enough for this purpose (clearly monitoring equipment could not be left unattended at the nearest dwellings).

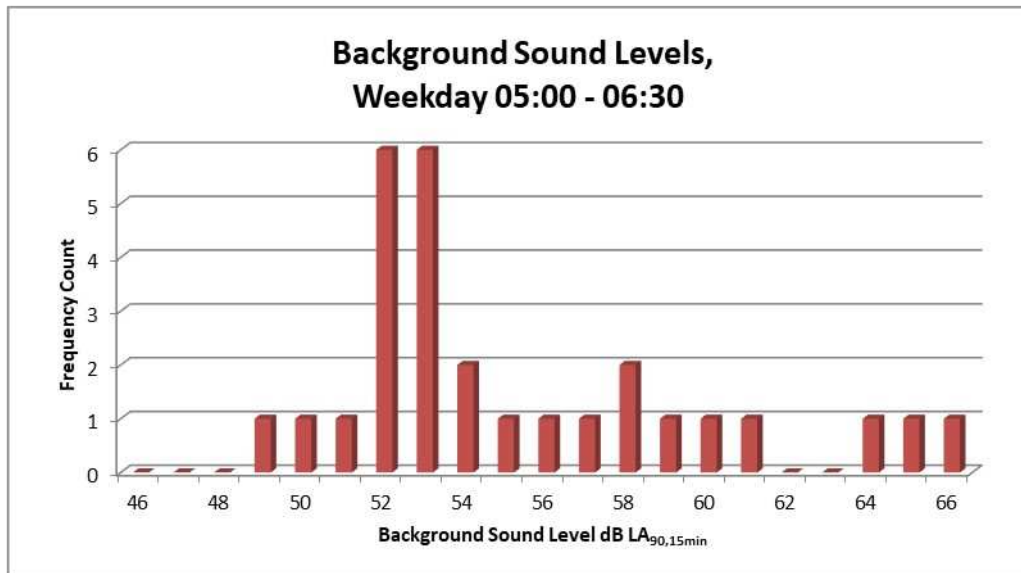
During periods of Brocklebank being operational, the unattended measurements will be dominated by sound from the site due to the location.

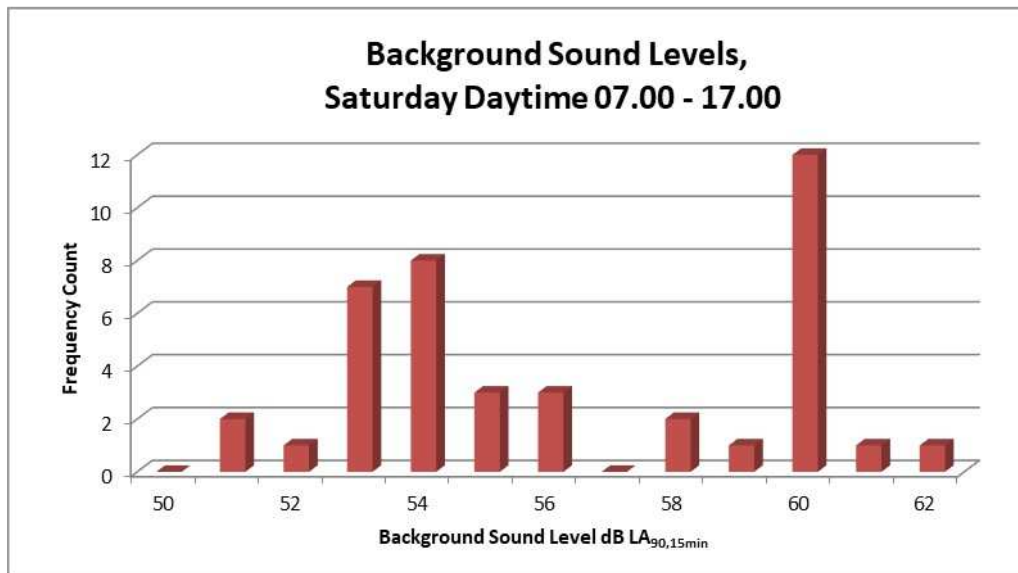
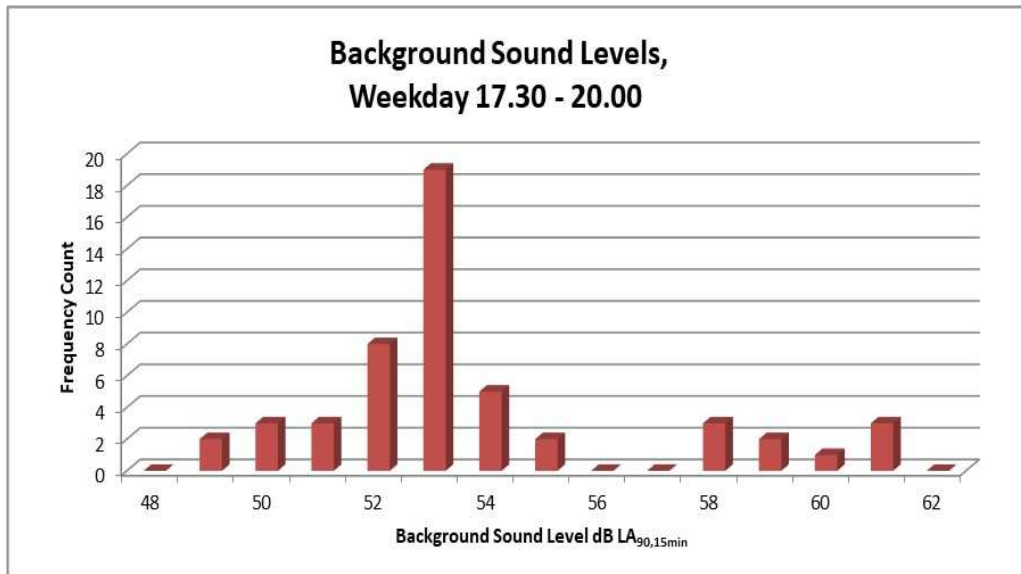
For this reason, background sound levels measured in the times immediately before and after operation, and also on a Saturday when the plant is not working are used in the determination of background sound level. This position is slightly less sheltered from environmental sources than Tudor Close and Rustic Way, but the times of measurement are likely to be slightly quieter than times of Brocklebank operation, so this may be self cancelling. Nevertheless, this provides an additional useful datapoint of the prevailing background sound climate at this location.

Full monitoring data is shown in the appendices of this report. The summarising the results are shown in this section. The results of the unattended monitoring shows typical background sound levels of:

Early Morning	0500 – 0630	52 - 53 dB LA _{90,15mins}
Late Afternoon / Evening	1730 – 2000	53 dB LA _{90,15mins}
Saturday	0700 – 1700	54 dB LA _{90,15mins}

The original report contained a short sample of background sound levels (1 hour duration at two positions). It concluded that the background sound level during sound emissions from various industrial premises was 53 dB LA_{90,15min}. during periods of no industrial activity, the background sound level at that time was 50 dB LA_{90,15min}. These measurements were of course taken a number of years ago and we cannot be sure of sources that existed during that time, but this provides another data point for consideration.





The information contained in this section suggests that a sensible, typical background sound level at the nearest dwellings is 53 dB LA_{90,15mins}, caused by the mixed sources that this area is subject to.

(n) **Rating Levels**

The procedure for finding the BS 4142 Rating Level requires certain penalties or corrections to be added to the time-averaged sound level to take account of the character of sound. These penalties are:

Tonality

The rating method of BS 4142 adds penalties of 2 dB, 4 dB and 6 dB to the actual sound levels at dwellings if tonal characteristics are “just”, “clearly” or “highly” perceptible (respectively).

Impulsivity

Penalties of up to 9 dB are added to take account of the impulsivity of sound received at receptors.

Intermittency

If a sound source operates intermittently its noise output is averaged over the assessment period time frames. Sound of this nature attracts a 3 dB penalty for intermittency.

Other sound characteristics

BS 4142 allows for the addition of 3 dB if the sources are not tonal or impulsive, but are readily distinctive against the acoustic environment.

These corrections are penalties should be applied for how the sound is perceived at the nearest receptors. For predictions of sound from this site, undertaken using measurements of individual sources, the corrections applied are as follows:

Tonality. Quantitative assessment of the frequency spectra received at the nearest dwellings shows no corrections required for tonality. Full details of this are given in the appendices of the report.

Impulsivity. The only source judged to have impulsivity perceptible at the dwellings was for the loading of rubble and some of the larger finished materials into HGVs. A correction of 6 dB is applied to sound from this loading operation.

Intermittency. All of the process noise is continuous and there are no repeated identifiable on/off conditions, so no corrections for intermittency are needed.

Other Sound Characteristics. As discussed in this report, the soundscape features significantly audible other industrial sources, some of a very similar nature. It is judged that the sources at the site generally do not require the penalty of 3 dB available under the category of 'other sound characteristics.' The exception to this may be the vibrating screen, which features low-frequency sound energy, if and when audible may be considered of a different character to the remaining soundscape. For this reason a 3 dB correction is applied to sound from the vibrating screen.

For predictions of sound calculated using roaming measurements of the overall operation, a 3 dB correction is applied to the overall measurement to take account of any of those elements that may be deemed to warrant correction for their character. It is worthy of note that this overall correction has a similar effect on the result as the separate corrections applied to individual sources described above, further reducing uncertainty.

The BS 4142 Rating Levels are:

BS 4142 Rating Levels, dB

Dwelling	Individual Source Measurement Method	Roaming Measurement Method
52 Allende Way	55	54
Tudor Close	56	54
Rustic Court	55	54

(o) **Background Comparisons**

Comparisons between the predicted Rating Levels and the measured background levels are shown in the table below. A positive number shows the predicted exceedances of Rating Level above background and a negative number represents the Rating Level being below background.

Comparison of Rating Levels to Background, dB

Dwelling	Individual Source Measurement Method	Roaming Measurement Method
52 Allende Way	+2	+1
Tudor Close	+3	+1
Rustic Court	+2	+1

These assessments have been undertaken for the closest dwellings to the site. The sound levels from proposed operations received at dwellings further from the site will be progressively lower. The comparison of predicted sound against existing background will also be progressively more favourable.

The initial estimation of impacts without taking context into account is that sound from the proposed development is below that of adverse impact.

(p) **BS 4142 Conclusions**

As discussed earlier in this report, the context of this site is that the numerous industrial sources in this area are very well established and that the existing soundscape at the newer build closest dwellings is very much mixed, with various sources contributing.

The Rating Levels described in this report are between 1 dB and 3 dB above the typical background, calculated to represent a reasonable worst-case but still accurate scenario. At other times, the Rating Level may approximate to the existing background.

The site has been in use for many years, significantly predating the construction of the nearest dwellings and was historically used for heavy duty screening and crushing operations, which are likely to have created higher sound levels than the current operation.

Before the consideration of context, the numerical conclusions are that sound from Brocklebank is lower than what would be deemed to cause adverse impact. Given the context, historical use of this site and the very mixed source soundscape, it is judged that these exceedances above background are likely to be acceptable, being unlikely to cause further adverse impact than other existing sources, and that Brocklebank causes low impact in isolation when considering the mixed-use nature of the area.

(q) **Uncertainty**

It is a requirement of BS 4142: 2014 that the level of uncertainty in data and calculations should be considered. There is commentary throughout the report on uncertainties, but additional information and how they have been minimised is considered in this section.

Sound measurements of sources have been undertaken directly at the site of the operation being assessed.

The procedures used for the calculation of specific sound levels at the nearest noise-sensitive receptors are based on basic, fundamental principles of acoustics. Sound decay with distance from the sources has been calculated using the principles and methods recommended in BS 5228. Barrier effect has been calculated using the accurate method of Maekawa. Different approaches to the calculation of specific sound level have been taken, and the results compared with a high level of agreement and certainty.

The addition and subtraction of sound levels was done logarithmically on an energy basis, which is the correct method for decibel calculations. It is anticipated that this method would be considered by other suitably qualified acousticians to be relevant, correct and appropriate for this survey and is a method examined by the Institute of Acoustics on their post graduate diploma course.

All sound level measurements were taken with a calibrated type 1 sound level meter, which represents the most accurate type of SLM available. Sound levels were measured to the nearest 0.1 dB, time periods were measured and recorded to the nearest second. No rounding was done in any calculations, the only rounding being done on final results, in compliance with BS 4142 : 2014. The sound level meter was calibrated before and after each survey period and no drift was apparent.

Background sound data was obtained using both attended and unattended measurements, and the typical results were used in the assessment of noise impact.

It is concluded that the uncertainty in this survey has been minimised as far as possible and is believed to be below the level at which it would have an impact on the assessment conclusions contained in this report.

APPENDIX 1

BACKGROUND SOUND LEVEL MEASUREMENTS

Attended:

Position	Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
Allende Way	09/08/2023	10:13:00	68.2	84.2	51.6	53.6
	09/08/2023	10:28:00	66.6	82.3	50.6	52.9
	09/08/2023	10:43:00	67.9	86.4	51.5	54.4
	09/08/2023	10:58:00	65.0	85.7	51.1	52.2
Tudor Close	09/08/2023	11:19:00	56.9	73.2	53.6	54.3
	09/08/2023	11:34:00	55.4	65.0	49.7	51.9
	09/08/2023	11:49:00	56.6	71.6	50.9	52.0
	09/08/2023	12:04:00	57.1	66.8	52.1	54.1
Rustic Court	24/08/2023	10:05:00	55.8	63.3	50.8	53.8
	24/08/2023	10:20:00	54.4	70.0	49.4	52.2
	24/08/2023	10:35:00	55.0	64.2	48.9	51.4
	24/08/2023	10:50:00	56.4	67.4	50.4	52.7

Unattended:

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
09/08/2023	16:48:58	68.0	74.2	58.1	60.6
09/08/2023	17:00:00	68.0	71.7	57.8	60.2
09/08/2023	17:15:00	67.8	76.6	57.1	59.6
09/08/2023	17:30:00	65.8	73.5	52.6	57.8
09/08/2023	17:45:00	67.7	72.2	56.9	59.0
09/08/2023	18:00:00	62.5	71.9	47.0	50.1
09/08/2023	18:15:00	54.8	67.2	48.8	51.0
09/08/2023	18:30:00	55.2	63.0	51.5	53.1
09/08/2023	18:45:00	54.6	66.9	51.1	52.6
09/08/2023	19:00:00	54.4	63.3	50.9	52.3
09/08/2023	19:15:00	60.6	84.8	51.1	52.6
09/08/2023	19:30:00	54.9	71.2	50.8	52.2
09/08/2023	19:45:00	54.2	64.2	47.7	51.5
09/08/2023	20:00:00	52.3	63.3	46.7	48.7

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
09/08/2023	20:15:00	52.8	64.6	47.0	48.8
09/08/2023	20:30:00	53.6	66.5	47.7	50.1
09/08/2023	20:45:00	54.1	62.8	50.5	51.8
09/08/2023	21:00:00	53.6	60.6	50.4	51.5
09/08/2023	21:15:00	53.8	61.9	50.2	51.5
09/08/2023	21:30:00	54.0	68.9	50.1	51.4
09/08/2023	21:45:00	53.5	63.5	49.5	51.2
09/08/2023	22:00:00	54.4	75.7	47.5	50.8
09/08/2023	22:15:00	52.0	68.7	45.3	47.9
09/08/2023	22:30:00	51.8	66.9	45.8	48.0
09/08/2023	22:45:00	52.2	61.0	46.7	49.1
09/08/2023	23:00:00	53.5	60.7	49.9	51.4
09/08/2023	23:15:00	52.9	68.2	49.8	51.0
09/08/2023	23:30:00	53.5	59.5	50.1	51.6
09/08/2023	23:45:00	53.4	68.7	50.1	51.3
10/08/2023	00:00:00	52.9	62.8	49.6	50.9
10/08/2023	00:15:00	52.0	62.5	45.9	48.7
10/08/2023	00:30:00	50.6	60.7	45.4	47.3
10/08/2023	00:45:00	49.9	59.7	46.2	47.8
10/08/2023	01:00:00	52.1	60.9	46.8	49.0
10/08/2023	01:15:00	52.3	59.1	49.8	50.8
10/08/2023	01:30:00	52.1	60.6	49.5	50.5
10/08/2023	01:45:00	52.2	60.9	49.2	50.4
10/08/2023	02:00:00	51.5	61.7	49.1	50.1
10/08/2023	02:15:00	51.6	61.7	48.2	49.8
10/08/2023	02:30:00	50.6	62.5	45.8	48.1
10/08/2023	02:45:00	50.0	65.3	45.7	47.8
10/08/2023	03:00:00	50.7	60.2	46.2	47.8
10/08/2023	03:15:00	52.6	69.9	49.6	50.8
10/08/2023	03:30:00	51.9	57.9	49.7	50.7
10/08/2023	03:45:00	52.0	58.5	49.4	50.7
10/08/2023	04:00:00	51.8	59.1	49.2	50.4
10/08/2023	04:15:00	51.6	60.4	49.1	50.3
10/08/2023	04:30:00	52.8	63.9	48.0	51.0
10/08/2023	04:45:00	51.9	69.1	47.4	50.3
10/08/2023	05:00:00	52.5	61.5	48.1	51.0
10/08/2023	05:15:00	54.3	72.3	49.2	52.0
10/08/2023	05:30:00	55.3	62.6	51.8	53.1
10/08/2023	05:45:00	56.4	68.9	51.9	53.3
10/08/2023	06:00:00	56.6	70.1	51.0	52.3

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
10/08/2023	06:15:00	56.4	65.9	50.8	52.2
10/08/2023	06:30:00	56.2	70.2	49.6	51.8
10/08/2023	06:45:00	55.2	67.9	49.9	52.0
10/08/2023	07:00:00	54.6	64.6	49.7	51.2
10/08/2023	07:15:00	61.5	74.9	50.7	53.1
10/08/2023	07:30:00	65.3	71.2	63.6	64.4
10/08/2023	07:45:00	65.4	76.6	63.6	64.5
10/08/2023	08:00:00	65.8	72.7	63.9	64.7
10/08/2023	08:15:00	65.7	80.1	63.7	64.6
10/08/2023	08:30:00	65.2	73.9	63.4	64.3
10/08/2023	08:45:00	65.0	73.7	62.9	64.1
10/08/2023	09:00:00	64.8	71.1	63.2	64.1
10/08/2023	09:15:00	64.9	77.0	62.9	63.8
10/08/2023	09:30:00	65.6	75.1	63.9	64.6
10/08/2023	09:45:00	65.2	71.3	63.5	64.3
10/08/2023	10:00:00	65.7	72.1	63.5	64.4
10/08/2023	10:15:00	66.0	79.3	63.8	64.7
10/08/2023	10:30:00	65.7	73.5	63.9	64.8
10/08/2023	10:45:00	65.6	75.2	63.5	64.5
10/08/2023	11:00:00	65.7	85.4	63.7	64.8
10/08/2023	11:15:00	66.1	74.8	64.1	64.9
10/08/2023	11:30:00	65.7	78.5	64.0	64.7
10/08/2023	11:45:00	65.3	73.4	63.6	64.5
10/08/2023	12:00:00	65.9	77.3	63.9	64.8
10/08/2023	12:15:00	65.9	75.6	63.8	64.6
10/08/2023	12:30:00	65.7	73.2	64.2	64.9
10/08/2023	12:45:00	65.8	73.9	64.0	64.9
10/08/2023	13:00:00	66.4	77.1	64.5	65.3
10/08/2023	13:15:00	66.2	73.8	63.9	64.8
10/08/2023	13:30:00	65.9	76.6	63.6	64.6
10/08/2023	13:45:00	65.7	74.1	64.3	64.9
10/08/2023	14:00:00	65.8	71.6	64.0	64.8
10/08/2023	14:15:00	66.3	75.5	64.6	65.4
10/08/2023	14:30:00	66.1	74.9	64.4	65.2
10/08/2023	14:45:00	66.4	80.6	64.3	65.2
10/08/2023	15:00:00	65.8	76.9	64.0	64.9
10/08/2023	15:15:00	65.5	79.6	63.5	64.3
10/08/2023	15:30:00	65.8	75.7	63.9	64.7
10/08/2023	15:45:00	65.8	75.8	63.6	64.6
10/08/2023	16:00:00	65.7	77.7	62.8	64.1

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
10/08/2023	16:15:00	68.0	78.3	59.9	64.5
10/08/2023	16:30:00	67.4	79.2	58.9	60.6
10/08/2023	16:45:00	67.0	70.9	58.9	60.3
10/08/2023	17:00:00	67.6	80.7	57.7	60.2
10/08/2023	17:15:00	67.3	71.1	57.3	59.6
10/08/2023	17:30:00	65.9	73.7	52.6	57.8
10/08/2023	17:45:00	68.1	78.1	56.8	59.0
10/08/2023	18:00:00	63.9	71.7	51.7	53.8
10/08/2023	18:15:00	57.0	74.5	51.2	52.6
10/08/2023	18:30:00	55.4	65.7	51.1	52.3
10/08/2023	18:45:00	55.9	74.7	51.2	52.7
10/08/2023	19:00:00	54.4	61.9	51.0	52.2
17/08/2023	14:00:00	66.8	83.9	64.2	64.9
17/08/2023	14:15:00	67.2	78.7	64.4	65.1
17/08/2023	14:30:00	68.3	74.5	58.9	60.6
17/08/2023	14:45:00	63.6	73.9	53.1	55.2
17/08/2023	15:00:00	62.5	74.2	53.4	55.0
17/08/2023	15:15:00	66.1	77.0	53.8	55.9
17/08/2023	15:30:00	67.3	71.2	58.1	60.3
17/08/2023	15:45:00	67.8	75.3	57.3	59.8
17/08/2023	16:00:00	68.0	77.8	57.1	60.1
17/08/2023	16:15:00	66.8	75.4	54.4	58.1
17/08/2023	16:30:00	69.3	76.6	61.4	65.0
17/08/2023	16:45:00	61.9	71.8	55.5	57.4
17/08/2023	17:00:00	58.7	72.7	56.2	57.5
17/08/2023	17:15:00	58.5	77.7	52.2	54.3
17/08/2023	17:30:00	55.6	62.4	51.4	53.4
17/08/2023	17:45:00	55.1	71.6	51.1	52.5
17/08/2023	18:00:00	55.2	69.1	52.0	53.2
17/08/2023	18:15:00	55.1	67.2	52.0	53.0
17/08/2023	18:30:00	56.1	78.3	51.7	52.8
17/08/2023	18:45:00	55.6	66.9	51.6	52.9
17/08/2023	19:00:00	53.9	60.7	50.7	51.8
17/08/2023	19:15:00	53.9	64.6	50.1	51.5
17/08/2023	19:30:00	53.4	64.5	47.8	49.5
17/08/2023	19:45:00	54.1	69.9	48.1	49.6
17/08/2023	20:00:00	52.7	60.9	47.8	49.3
17/08/2023	20:15:00	53.9	60.1	51.2	52.2
17/08/2023	20:30:00	54.1	59.9	51.4	52.3

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
17/08/2023	20:45:00	54.0	63.2	51.0	52.3
17/08/2023	21:00:00	54.3	62.2	50.9	52.1
17/08/2023	21:15:00	53.7	59.1	50.8	51.7
17/08/2023	21:30:00	52.7	61.1	47.5	49.2
17/08/2023	21:45:00	53.2	74.9	47.9	49.3
17/08/2023	22:00:00	51.9	63.0	47.2	48.7
17/08/2023	22:15:00	52.7	68.6	47.8	49.2
17/08/2023	22:30:00	52.6	70.6	47.6	48.9
17/08/2023	22:45:00	51.3	61.3	47.3	48.5
17/08/2023	23:00:00	52.0	63.4	47.5	48.9
17/08/2023	23:15:00	51.3	60.0	47.5	48.8
17/08/2023	23:30:00	51.4	60.4	47.3	48.9
17/08/2023	23:45:00	51.7	61.5	47.6	48.7
18/08/2023	00:00:00	56.6	80.5	47.6	48.7
18/08/2023	00:15:00	51.2	63.0	47.4	48.6
18/08/2023	00:30:00	50.4	60.0	47.1	48.4
18/08/2023	00:45:00	50.5	63.6	47.2	48.3
18/08/2023	01:00:00	50.1	58.1	47.3	48.3
18/08/2023	01:15:00	50.0	61.6	47.3	48.3
18/08/2023	01:30:00	50.3	59.5	46.9	48.4
18/08/2023	01:45:00	49.6	57.9	47.4	48.3
18/08/2023	02:00:00	49.6	59.5	47.3	48.3
18/08/2023	02:15:00	50.3	62.5	47.1	48.4
18/08/2023	02:30:00	49.5	62.6	47.4	48.5
18/08/2023	02:45:00	49.4	57.5	47.5	48.4
18/08/2023	03:00:00	49.7	61.8	47.2	48.3
18/08/2023	03:15:00	49.4	57.8	47.6	48.5
18/08/2023	03:30:00	49.6	56.6	47.4	48.6
18/08/2023	03:45:00	\	65.3	48.3	49.6
18/08/2023	04:00:00	50.7	59.1	48.6	49.6
18/08/2023	04:15:00	52.1	61.9	49.5	50.6
18/08/2023	04:30:00	49.6	56.5	47.3	48.4
18/08/2023	04:45:00	51.4	63.8	48.4	49.6
18/08/2023	05:00:00	51.8	64.6	48.5	49.7
18/08/2023	05:15:00	51.6	65.3	47.4	48.9
18/08/2023	05:30:00	60.7	72.5	50.1	54.2
18/08/2023	05:45:00	62.9	80.1	60.2	61.1
18/08/2023	06:00:00	61.7	78.6	56.6	59.7
18/08/2023	06:15:00	64.9	81.5	55.7	58.3
18/08/2023	06:30:00	67.3	78.9	64.7	66.1

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
18/08/2023	06:45:00	67.1	84.4	64.1	65.1
18/08/2023	07:00:00	66.8	83.6	64.0	64.9
18/08/2023	07:15:00	65.9	74.3	63.8	64.5
18/08/2023	07:30:00	66.9	79.6	63.9	65.0
18/08/2023	07:45:00	66.2	81.2	63.9	64.7
18/08/2023	08:00:00	66.3	75.0	63.9	64.8
18/08/2023	08:15:00	66.1	80.7	63.8	64.6
18/08/2023	08:30:00	66.0	77.6	63.8	64.5
18/08/2023	08:45:00	66.3	78.3	63.5	64.6
18/08/2023	09:00:00	66.7	75.9	64.0	64.9
18/08/2023	09:15:00	66.5	75.4	63.9	64.7
18/08/2023	09:30:00	66.7	78.7	63.8	64.8
18/08/2023	09:45:00	66.4	80.2	63.9	64.6
18/08/2023	10:00:00	66.7	78.3	64.0	65.0
18/08/2023	10:15:00	66.1	83.0	61.7	64.0
18/08/2023	10:30:00	66.6	77.7	64.2	65.1
18/08/2023	10:45:00	66.7	79.2	64.1	64.9
18/08/2023	11:00:00	66.5	77.1	64.2	65.1
18/08/2023	11:15:00	66.8	79.3	64.2	65.2
18/08/2023	11:30:00	66.6	78.0	64.3	65.2
18/08/2023	11:45:00	66.2	75.8	64.1	64.9
18/08/2023	12:00:00	66.4	78.8	64.4	65.2
18/08/2023	12:15:00	66.6	75.1	64.2	65.1
18/08/2023	12:30:00	66.9	79.6	64.1	65.1
18/08/2023	12:45:00	66.5	80.0	64.3	65.0
18/08/2023	13:00:00	66.2	74.1	64.2	64.9
18/08/2023	13:15:00	66.6	78.4	64.0	65.0
18/08/2023	13:30:00	66.1	77.0	63.9	64.7
18/08/2023	13:45:00	66.1	77.8	64.0	64.8
18/08/2023	14:00:00	66.4	76.6	64.1	65.0
18/08/2023	14:15:00	66.0	83.0	64.0	64.8
18/08/2023	14:30:00	66.1	79.3	64.0	64.8
18/08/2023	14:45:00	66.4	77.2	64.1	64.9
18/08/2023	15:00:00	65.9	75.6	64.0	64.8
18/08/2023	15:15:00	65.7	76.0	63.7	64.4
18/08/2023	15:30:00	66.2	78.4	63.7	64.7
18/08/2023	15:45:00	66.1	71.3	63.9	65.0
18/08/2023	16:00:00	65.5	71.6	63.8	64.5
18/08/2023	16:15:00	66.7	78.0	64.0	65.2
18/08/2023	16:30:00	62.5	72.8	54.5	58.8

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
18/08/2023	16:45:00	61.1	82.8	57.8	58.7
18/08/2023	17:00:00	59.3	70.1	54.9	57.6
18/08/2023	17:15:00	58.1	75.5	52.1	53.7
18/08/2023	17:30:00	56.1	76.0	51.3	52.9
18/08/2023	17:45:00	55.8	67.7	50.9	52.6
18/08/2023	18:00:00	54.8	64.5	50.8	52.5
18/08/2023	18:15:00	54.4	62.1	49.3	51.3
18/08/2023	18:30:00	53.9	60.6	49.9	51.3
18/08/2023	18:45:00	55.5	65.5	50.7	52.9
18/08/2023	19:00:00	55.6	65.2	52.0	53.3
18/08/2023	19:15:00	55.1	62.2	51.7	52.9
18/08/2023	19:30:00	54.4	60.2	51.4	52.6
18/08/2023	19:45:00	54.7	63.2	51.3	52.5
18/08/2023	20:00:00	54.5	61.2	51.2	52.3
18/08/2023	20:15:00	53.4	60.4	49.1	50.6
18/08/2023	20:30:00	53.5	74.9	48.8	50.4
18/08/2023	20:45:00	54.4	72.1	49.0	51.2
18/08/2023	21:00:00	54.6	69.4	51.1	52.5
18/08/2023	21:15:00	55.3	67.3	51.6	53.1
18/08/2023	21:30:00	54.6	63.0	51.3	52.5
18/08/2023	21:45:00	54.3	65.3	49.5	51.2
18/08/2023	22:00:00	55.2	62.6	50.3	51.8
18/08/2023	22:15:00	54.9	66.5	50.1	51.5
18/08/2023	22:30:00	54.3	60.8	49.6	51.2
18/08/2023	22:45:00	53.5	61.0	49.5	50.6
18/08/2023	23:00:00	53.4	61.3	48.9	50.2
18/08/2023	23:15:00	53.6	65.6	48.7	50.0
18/08/2023	23:30:00	53.7	68.0	49.0	50.2
18/08/2023	23:45:00	53.3	64.2	48.7	50.2
19/08/2023	00:00:00	54.2	67.0	48.9	50.6
19/08/2023	00:15:00	54.2	65.4	49.6	51.0
19/08/2023	00:30:00	53.5	63.9	49.3	50.9
19/08/2023	00:45:00	55.1	64.6	50.6	52.5
19/08/2023	01:00:00	52.8	60.4	49.0	50.3
19/08/2023	01:15:00	52.1	61.6	48.7	49.9
19/08/2023	01:30:00	52.6	62.0	48.7	49.9
19/08/2023	01:45:00	52.2	60.0	48.4	49.7
19/08/2023	02:00:00	51.9	65.4	48.4	49.7
19/08/2023	02:15:00	51.3	59.7	48.4	49.5
19/08/2023	02:30:00	51.8	63.4	48.8	49.9

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
19/08/2023	02:45:00	52.0	59.4	48.8	50.1
19/08/2023	03:00:00	51.1	59.6	48.7	49.8
19/08/2023	03:15:00	52.6	69.3	48.5	49.8
19/08/2023	03:30:00	50.8	59.1	48.7	49.7
19/08/2023	03:45:00	51.0	62.8	48.3	49.3
19/08/2023	04:00:00	50.2	60.3	48.1	49.0
19/08/2023	04:15:00	51.1	59.7	48.2	49.4
19/08/2023	04:30:00	51.6	65.6	48.3	49.4
19/08/2023	04:45:00	51.0	62.5	48.0	49.4
19/08/2023	05:00:00	52.2	67.7	48.7	50.1
19/08/2023	05:15:00	52.2	63.1	48.8	50.2
19/08/2023	05:30:00	52.7	60.2	49.3	50.6
19/08/2023	05:45:00	53.2	62.3	49.0	50.4
19/08/2023	06:00:00	52.3	63.5	49.3	50.3
19/08/2023	06:15:00	53.2	68.1	49.2	50.6
19/08/2023	06:30:00	54.7	67.4	49.7	51.3
19/08/2023	06:45:00	58.2	78.2	49.4	51.3
19/08/2023	07:00:00	57.0	61.8	54.8	55.6
19/08/2023	07:15:00	56.3	64.0	54.5	55.2
19/08/2023	07:30:00	59.8	79.6	53.5	55.8
19/08/2023	07:45:00	60.5	66.3	53.4	55.5
19/08/2023	08:00:00	60.7	63.1	59.0	59.8
19/08/2023	08:15:00	60.2	75.5	57.0	58.6
19/08/2023	08:30:00	62.3	77.2	55.2	57.6
19/08/2023	08:45:00	67.6	70.7	58.5	60.0
19/08/2023	09:00:00	67.7	71.2	58.4	60.3
19/08/2023	09:15:00	67.7	76.0	58.3	60.8
19/08/2023	09:30:00	68.5	76.0	59.7	61.7
19/08/2023	09:45:00	68.0	74.6	55.5	60.4
19/08/2023	10:00:00	66.8	74.7	56.1	60.0
19/08/2023	10:15:00	67.7	74.4	57.5	60.3
19/08/2023	10:30:00	57.7	77.5	53.7	55.4
19/08/2023	10:45:00	58.6	85.4	53.2	54.8
19/08/2023	11:00:00	56.9	66.0	52.7	54.2
19/08/2023	11:15:00	56.4	64.4	52.4	53.8
19/08/2023	11:30:00	56.3	67.3	52.2	53.8
19/08/2023	11:45:00	58.0	78.6	52.0	53.5
19/08/2023	12:00:00	57.6	75.5	51.9	53.4
19/08/2023	12:15:00	56.6	69.5	51.5	53.2
19/08/2023	12:30:00	56.0	75.8	51.1	52.5

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
19/08/2023	12:45:00	61.4	74.8	51.3	53.4
19/08/2023	13:00:00	67.7	73.6	58.1	60.3
19/08/2023	13:15:00	67.8	70.9	58.4	60.3
19/08/2023	13:30:00	67.7	71.5	57.4	60.1
19/08/2023	13:45:00	67.8	72.5	57.5	60.0
19/08/2023	14:00:00	67.8	78.9	57.4	60.1
19/08/2023	14:15:00	66.0	73.7	52.3	58.2
19/08/2023	14:30:00	68.4	72.9	57.6	59.8
19/08/2023	14:45:00	58.9	71.4	52.4	53.8
19/08/2023	15:00:00	56.1	64.9	52.4	53.7
19/08/2023	15:15:00	55.9	65.4	52.0	53.4
19/08/2023	15:30:00	57.0	76.4	52.2	53.7
19/08/2023	15:45:00	56.5	80.4	49.3	51.8
19/08/2023	16:00:00	56.0	75.7	48.8	51.3
19/08/2023	16:15:00	56.2	77.7	49.2	51.1
19/08/2023	16:30:00	56.1	64.9	52.1	53.7
19/08/2023	16:45:00	56.5	72.6	51.9	53.4
19/08/2023	17:00:00	56.7	72.5	51.2	53.2
19/08/2023	17:15:00	56.9	68.6	51.9	53.3
19/08/2023	17:30:00	56.3	71.6	51.6	53.0
19/08/2023	17:45:00	54.9	63.8	51.1	52.5
19/08/2023	18:00:00	53.5	66.1	48.0	49.8
19/08/2023	18:15:00	53.1	65.8	47.7	49.3
19/08/2023	18:30:00	54.1	64.6	48.4	50.3
19/08/2023	18:45:00	55.0	65.8	51.4	52.8
19/08/2023	19:00:00	55.4	64.6	51.4	52.8
19/08/2023	19:15:00	54.4	66.9	50.9	52.1
19/08/2023	19:30:00	55.1	70.2	50.9	52.2
19/08/2023	19:45:00	54.0	62.4	50.4	51.5
19/08/2023	20:00:00	54.0	66.1	50.1	51.4
19/08/2023	20:15:00	53.1	65.6	48.2	49.7
19/08/2023	20:30:00	52.6	62.6	47.7	49.3
19/08/2023	20:45:00	54.4	75.7	47.3	49.2
19/08/2023	21:00:00	54.2	64.4	51.0	52.0
19/08/2023	21:15:00	53.9	61.2	50.9	51.9
19/08/2023	21:30:00	53.9	64.6	50.5	51.6
19/08/2023	21:45:00	54.0	73.2	50.1	51.5
19/08/2023	22:00:00	53.7	64.2	50.0	51.2
19/08/2023	22:15:00	53.6	69.2	46.7	49.4
19/08/2023	22:30:00	53.2	76.0	47.2	48.6

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
19/08/2023	22:45:00	52.3	66.6	47.0	48.7
19/08/2023	23:00:00	54.0	64.8	50.4	51.7
19/08/2023	23:15:00	53.5	61.5	50.4	51.5
19/08/2023	23:30:00	53.4	61.7	47.1	50.5
19/08/2023	23:45:00	54.0	77.4	46.9	48.6
20/08/2023	00:00:00	52.3	63.5	46.5	48.2
20/08/2023	00:15:00	52.3	66.8	45.7	48.0
20/08/2023	00:30:00	52.4	75.3	46.2	47.9
20/08/2023	00:45:00	51.2	66.6	45.4	47.6
20/08/2023	01:00:00	50.5	66.6	44.9	47.0
20/08/2023	01:15:00	50.4	63.5	45.6	47.1
20/08/2023	01:30:00	50.4	61.1	44.9	47.0
20/08/2023	01:45:00	49.6	60.0	45.3	46.9
20/08/2023	02:00:00	49.0	73.5	45.0	46.5
20/08/2023	02:15:00	49.2	60.7	45.0	46.6
20/08/2023	02:30:00	50.2	63.4	44.8	46.6
20/08/2023	02:45:00	48.1	58.6	44.9	46.4
20/08/2023	03:00:00	48.8	58.9	44.6	46.5
20/08/2023	03:15:00	50.0	66.7	45.3	47.0
20/08/2023	03:30:00	50.8	62.9	46.1	47.5
20/08/2023	03:45:00	49.9	61.6	45.3	47.1
20/08/2023	04:00:00	49.8	62.6	45.4	47.1
20/08/2023	04:15:00	49.0	62.4	44.9	46.5
20/08/2023	04:30:00	49.4	64.9	45.0	46.8
20/08/2023	04:45:00	49.4	59.3	45.1	46.7
20/08/2023	05:00:00	48.6	57.2	45.2	46.9
20/08/2023	05:15:00	49.9	60.5	45.3	47.3
20/08/2023	05:30:00	51.1	60.4	46.3	47.8
20/08/2023	05:45:00	53.3	74.0	46.3	47.7
20/08/2023	06:00:00	49.5	59.0	45.9	47.5
20/08/2023	06:15:00	49.9	61.2	46.0	47.4
20/08/2023	06:30:00	49.8	59.8	45.9	47.3
20/08/2023	06:45:00	50.8	61.7	46.2	47.8
20/08/2023	07:00:00	50.2	63.3	46.2	47.8
20/08/2023	07:15:00	50.5	62.5	47.0	48.4
20/08/2023	07:30:00	51.0	64.7	47.5	48.7
20/08/2023	07:45:00	51.5	63.6	47.4	48.7
20/08/2023	08:00:00	50.6	59.8	46.8	48.3
20/08/2023	08:15:00	50.6	63.7	46.8	48.3
20/08/2023	08:30:00	51.2	62.2	46.6	48.6

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
20/08/2023	08:45:00	51.0	65.3	47.1	48.5
20/08/2023	09:00:00	51.3	62.1	46.9	48.5
20/08/2023	09:15:00	54.9	79.0	47.1	49.3
20/08/2023	09:30:00	53.3	69.9	47.5	50.0
20/08/2023	09:45:00	51.3	60.5	47.0	48.7
20/08/2023	10:00:00	52.5	63.6	45.8	48.4
20/08/2023	10:15:00	51.9	61.1	46.1	47.9
20/08/2023	10:30:00	52.3	62.5	46.8	48.3
20/08/2023	10:45:00	52.4	61.1	47.2	48.8
20/08/2023	11:00:00	53.1	68.6	46.9	48.5
20/08/2023	11:15:00	53.2	77.1	46.7	48.5
20/08/2023	11:30:00	52.5	62.0	46.8	48.5
20/08/2023	11:45:00	53.3	63.0	47.6	49.2
20/08/2023	12:00:00	52.6	72.7	47.1	48.6
20/08/2023	12:15:00	52.8	63.5	47.3	49.0
20/08/2023	12:30:00	53.1	64.8	46.6	49.1
20/08/2023	12:45:00	52.1	63.2	46.3	48.3
20/08/2023	13:00:00	52.8	64.1	46.9	48.8
20/08/2023	13:15:00	53.5	72.1	46.7	48.8
20/08/2023	13:30:00	52.5	67.2	46.3	48.4
20/08/2023	13:45:00	53.6	64.5	47.1	49.4
20/08/2023	14:00:00	53.4	67.8	47.0	49.0
20/08/2023	14:15:00	54.2	76.1	46.6	49.0
20/08/2023	14:30:00	53.9	69.3	46.9	49.8
20/08/2023	14:45:00	54.8	76.7	47.5	50.1
20/08/2023	15:00:00	53.5	65.5	47.2	49.2
20/08/2023	15:15:00	53.6	69.9	47.2	48.9
20/08/2023	15:30:00	54.9	77.4	47.8	49.4
20/08/2023	15:45:00	53.4	62.2	47.3	49.6
20/08/2023	16:00:00	53.3	68.2	46.8	49.3
20/08/2023	16:15:00	53.0	65.0	46.4	48.6
20/08/2023	16:30:00	53.2	65.0	47.1	48.9
20/08/2023	16:45:00	52.5	61.2	46.5	48.5
20/08/2023	17:00:00	52.5	65.3	46.1	48.5
20/08/2023	17:15:00	53.0	66.9	46.8	48.9
20/08/2023	17:30:00	52.1	66.9	45.9	48.0
20/08/2023	17:45:00	51.8	63.0	45.8	48.3
20/08/2023	18:00:00	52.0	62.8	46.6	48.5
20/08/2023	18:15:00	52.5	61.9	46.4	48.9
20/08/2023	18:30:00	52.2	63.5	46.3	48.0

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
20/08/2023	18:45:00	52.0	66.2	45.7	47.9
20/08/2023	19:00:00	53.2	70.0	45.6	48.1
20/08/2023	19:15:00	51.7	60.0	46.0	47.9
20/08/2023	19:30:00	52.6	63.3	46.1	48.4
20/08/2023	19:45:00	52.6	63.0	46.4	48.5
20/08/2023	20:00:00	52.5	65.1	46.4	48.1
20/08/2023	20:15:00	52.9	78.9	46.0	47.9
20/08/2023	20:30:00	52.6	62.9	46.7	48.5
20/08/2023	20:45:00	52.8	66.8	46.7	48.6
20/08/2023	21:00:00	54.1	76.6	46.4	48.3
20/08/2023	21:15:00	53.9	78.5	46.2	48.5
20/08/2023	21:30:00	51.3	61.3	46.2	47.9
20/08/2023	21:45:00	51.8	68.9	45.7	47.4
20/08/2023	22:00:00	56.9	81.5	45.9	47.8
20/08/2023	22:15:00	52.8	70.2	45.8	47.7
20/08/2023	22:30:00	53.8	77.8	46.5	48.1
20/08/2023	22:45:00	51.2	61.7	45.7	47.3
20/08/2023	23:00:00	51.2	62.7	45.4	47.4
20/08/2023	23:15:00	52.0	69.8	45.0	47.4
20/08/2023	23:30:00	50.6	63.5	45.1	47.2
20/08/2023	23:45:00	51.9	69.4	45.9	47.3
21/08/2023	00:00:00	50.0	62.0	45.3	47.0
21/08/2023	00:15:00	52.2	71.9	45.8	47.5
21/08/2023	00:30:00	55.6	84.9	45.1	47.2
21/08/2023	00:45:00	49.5	60.1	44.8	46.9
21/08/2023	01:00:00	49.8	63.2	44.9	46.8
21/08/2023	01:15:00	50.1	68.8	44.7	46.7
21/08/2023	01:30:00	48.4	57.7	44.9	46.3
21/08/2023	01:45:00	48.9	63.1	44.7	46.4
21/08/2023	02:00:00	48.9	60.9	44.5	46.3
21/08/2023	02:15:00	48.1	58.0	44.7	46.1
21/08/2023	02:30:00	48.8	59.0	44.6	46.4
21/08/2023	02:45:00	48.0	56.1	44.9	46.4
21/08/2023	03:00:00	48.6	59.5	44.3	46.3
21/08/2023	03:15:00	48.8	59.5	45.2	46.8
21/08/2023	03:30:00	48.8	57.7	45.2	46.8
21/08/2023	03:45:00	50.4	60.9	47.2	48.7
21/08/2023	04:00:00	51.6	63.8	47.6	49.5
21/08/2023	04:15:00	51.5	61.3	47.7	49.2
21/08/2023	04:30:00	51.1	71.2	47.0	48.8

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
21/08/2023	04:45:00	53.3	61.8	48.9	50.6
21/08/2023	05:00:00	54.1	62.9	49.8	51.9
21/08/2023	05:15:00	54.6	62.2	50.0	52.3
21/08/2023	05:30:00	58.9	83.4	50.9	52.7
21/08/2023	05:45:00	60.4	75.9	56.1	57.0
21/08/2023	06:00:00	60.2	70.2	57.3	58.6
21/08/2023	06:15:00	62.4	72.6	53.3	56.2
21/08/2023	06:30:00	65.5	78.2	63.1	64.0
21/08/2023	06:45:00	65.2	71.5	63.5	64.2
21/08/2023	07:00:00	66.3	82.6	63.6	64.5
21/08/2023	07:15:00	65.8	86.5	63.4	64.4
21/08/2023	07:30:00	66.0	87.7	63.5	64.5
21/08/2023	07:45:00	65.3	71.4	63.5	64.1
21/08/2023	08:00:00	66.0	79.6	63.6	64.4
21/08/2023	08:15:00	65.8	76.1	63.8	64.7
21/08/2023	08:30:00	65.9	73.1	63.8	64.7
21/08/2023	08:45:00	65.8	75.8	63.2	64.3
21/08/2023	09:00:00	66.1	79.3	63.7	64.5
21/08/2023	09:15:00	65.3	75.5	63.4	64.2
21/08/2023	09:30:00	66.2	83.0	63.4	64.4
21/08/2023	09:45:00	65.6	75.3	63.2	64.1
21/08/2023	10:00:00	65.2	77.7	63.2	64.0
21/08/2023	10:15:00	66.0	79.1	63.3	64.3
21/08/2023	10:30:00	65.5	79.1	63.4	64.2
21/08/2023	10:45:00	65.7	80.1	63.3	64.2
21/08/2023	11:00:00	66.1	82.6	63.5	64.3
21/08/2023	11:15:00	65.3	80.8	63.6	64.3
21/08/2023	11:30:00	65.6	79.6	63.3	64.5
21/08/2023	11:45:00	65.8	81.4	63.4	64.5
21/08/2023	12:00:00	65.6	74.6	63.6	64.4
21/08/2023	12:15:00	66.0	81.2	63.6	64.3
21/08/2023	12:30:00	66.0	79.1	63.7	64.6
21/08/2023	12:45:00	65.5	80.3	63.0	64.0
21/08/2023	13:00:00	66.0	77.6	63.5	64.6
21/08/2023	13:15:00	66.1	82.0	63.5	64.7
21/08/2023	13:30:00	65.8	81.8	63.6	64.6
21/08/2023	13:45:00	65.9	79.3	63.7	64.7
21/08/2023	14:00:00	66.2	79.7	64.2	65.0
21/08/2023	14:15:00	66.0	78.6	64.0	65.1
21/08/2023	14:30:00	66.4	81.1	64.2	65.1

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
21/08/2023	14:45:00	66.4	79.2	64.1	65.0
21/08/2023	15:00:00	66.4	71.7	64.0	65.2
21/08/2023	15:15:00	66.7	78.2	64.2	65.3
21/08/2023	15:30:00	67.3	83.6	64.7	65.7
21/08/2023	15:45:00	66.8	80.0	64.4	65.5
21/08/2023	16:00:00	66.7	81.0	64.2	65.4
21/08/2023	16:15:00	66.4	77.1	64.5	65.3
21/08/2023	16:30:00	65.2	72.6	56.6	58.7
21/08/2023	16:45:00	60.7	82.8	54.5	56.6
21/08/2023	17:00:00	65.5	73.2	53.0	58.8
21/08/2023	17:15:00	68.2	75.5	58.9	60.5
21/08/2023	17:30:00	67.5	70.6	58.7	60.6
21/08/2023	17:45:00	67.7	70.8	58.5	60.4
21/08/2023	18:00:00	67.9	70.7	59.0	60.6
21/08/2023	18:15:00	66.0	73.0	54.2	58.1
21/08/2023	18:30:00	68.0	76.2	58.4	60.5
21/08/2023	18:45:00	65.5	72.3	53.3	55.0
21/08/2023	19:00:00	56.7	65.8	53.3	54.6
21/08/2023	19:15:00	55.9	64.4	52.6	53.9
21/08/2023	19:30:00	56.7	76.2	52.6	54.0
21/08/2023	19:45:00	55.9	64.7	52.5	53.8
21/08/2023	20:00:00	55.7	63.1	52.3	53.6
21/08/2023	20:15:00	55.5	62.9	52.1	53.4
21/08/2023	20:30:00	55.5	62.9	52.1	53.2
21/08/2023	20:45:00	55.3	65.2	51.2	52.8
21/08/2023	21:00:00	55.8	65.1	51.7	52.9
21/08/2023	21:15:00	54.8	63.2	51.1	52.6
21/08/2023	21:30:00	54.8	64.3	50.9	52.4
21/08/2023	21:45:00	55.1	67.8	51.0	52.3
21/08/2023	22:00:00	54.7	63.4	50.5	52.1
21/08/2023	22:15:00	54.6	66.6	50.1	51.6
21/08/2023	22:30:00	53.5	66.5	49.6	51.0
21/08/2023	22:45:00	54.3	77.8	49.5	50.9
21/08/2023	23:00:00	54.1	64.4	49.3	51.2
21/08/2023	23:15:00	52.6	60.2	47.7	49.6
21/08/2023	23:30:00	52.4	61.1	47.5	49.2
21/08/2023	23:45:00	52.1	62.2	47.2	49.0
22/08/2023	00:00:00	53.6	66.8	50.3	51.8
22/08/2023	00:15:00	52.9	62.1	50.3	51.5
22/08/2023	00:30:00	54.1	70.4	50.6	51.6

Date	Time	Ambient LA _{eq}	Maximum LAF _{max}	Minimum LAF _{min}	Background dB LA ₉₀
22/08/2023	00:45:00	52.6	63.3	50.2	51.3
22/08/2023	01:00:00	52.9	64.1	50.2	51.4
22/08/2023	01:15:00	52.5	60.6	50.2	51.3
22/08/2023	01:30:00	52.0	67.3	48.1	50.0
22/08/2023	01:45:00	50.8	63.1	46.8	48.6
22/08/2023	02:00:00	50.0	63.3	46.4	48.4
22/08/2023	02:15:00	51.7	58.6	46.8	48.8
22/08/2023	02:30:00	52.8	62.8	50.5	51.4
22/08/2023	02:45:00	52.6	60.9	49.9	51.2
22/08/2023	03:00:00	52.2	63.3	49.8	50.9
22/08/2023	03:15:00	52.3	60.0	49.9	51.0
22/08/2023	03:30:00	53.1	66.3	49.8	51.2
22/08/2023	03:45:00	52.2	61.8	48.6	50.3
22/08/2023	04:00:00	52.4	66.1	47.1	49.4
22/08/2023	04:15:00	51.0	66.4	46.3	48.7
22/08/2023	04:30:00	51.8	62.2	47.5	49.7
22/08/2023	04:45:00	54.0	59.8	48.8	52.3
22/08/2023	05:00:00	54.3	66.1	51.9	53.1
22/08/2023	05:15:00	57.2	81.5	52.2	53.4
22/08/2023	05:30:00	57.2	73.3	51.1	52.8
22/08/2023	05:45:00	60.3	83.3	52.7	54.5
22/08/2023	06:00:00	56.8	72.6	52.1	53.5
22/08/2023	06:15:00	63.3	82.5	52.5	58.2
22/08/2023	06:30:00	65.6	71.4	64.0	64.6
22/08/2023	06:45:00	66.3	81.8	64.0	64.9
22/08/2023	07:00:00	66.3	86.7	63.9	64.9
22/08/2023	07:15:00	65.9	84.1	64.1	65.0
22/08/2023	07:30:00	66.0	71.5	64.2	65.1
22/08/2023	07:45:00	66.7	80.8	64.1	64.9
22/08/2023	08:00:00	66.1	81.0	61.1	64.7
22/08/2023	08:15:00	61.8	83.9	54.4	56.5
22/08/2023	08:30:00	59.5	74.8	52.8	55.4
22/08/2023	08:45:00	60.5	77.9	52.9	55.3

APPENDIX 2 – SOUND LEVEL CALCULATIONS

Source positions, dimensions or distances between co-ordinates

Item name	Latitude	Longitude				Source Height for Propagation
In Front of Vibrating Screen, 10m	53.393607	-1.422155				5
Main Water Top Up Pump, 1m	53.393496	-1.422275				1
Aggmax 83sr Screen, 10m	53.393743	-1.421882				5
Tracked Loader, Loading Rubble (South), 10m	53.393596	-1.42181				2.5
Excavator, East Machinery, 10m	53.393919	-1.421416				3
	Point 1 Latitude	Longitude	Point 2 Latitude	Longitude		
All Activity, Roaming	53.39357	-1.422235	53.393911	-1.421458	Source Length 60m	4.5
All Activity Except Loading, Roaming	53.39357	-1.422235	53.393911	-1.421458	Source Length 60m	4.5

Source Sound Levels, dBA or dB Linear Octave Spectra

Description	dBA		25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
In Front of Vibrating Screen, 10m	73.1		90.1	79.6	90.4	88.1	79.9	85.6	71.0	68.2	68.4	68.1	66.4	65.7	65.7	65.6	65.4	64.1	64.0	63.0	62.4	61.9	61.1	60.3	59.2	58.0	56.2	54.1	50.9
Main Water Top Up Pump, 1m	78.4		92.5	85.6	97.0	88.7	81.3	86.7	73.6	66.0	65.2	67.3	66.3	66.0	64.3	63.6	62.9	63.1	63.3	61.5	60.7	60.4	60.3	59.9	59.6	58.9	57.5	55.1	52.1
Aggmax 83sr Screen, 10m	73.7		88.6	80.3	85.1	78.2	76.1	76.2	71.9	70.1	71.8	70.3	68.0	66.0	68.9	68.3	66.6	67.2	66.4	66.1	66.0	65.9	65.6	64.6	63.3	61.8	59.9	57.6	55.0
Tracked Loader, Loading Rubble (South), 10m	74.9		81.1	74.7	76.5	76.5	73.6	73.8	74.0	75.5	75.7	71.8	71.9	71.9	69.5	69.6	69.5	70.3	69.4	68.2	67.6	67.3	66.6	66.1	64.8	60.7	57.0	53.4	49.6
Excavator, East Machinery, 10m	74.3		85.8	81.9	80.8	76.3	73.1	72.6	74.0	72.2	73.0	70.8	69.9	69.6	72.5	72.4	71.1	71.5	71.6	72.2	72.4	71.1	68.6	66.4	63.5	60.9	58.8	56.6	53.0
All Activity, Roaming	80.2		91.0	78.4	86.6	83.9	77.1	78.2	74.1	72.1	73.3	72.7	69.8	68.6	69.7	68.7	67.3	66.5	66.3	65.8	65.5	64.2	63.0	61.8	60.1	58.3	56.1	53.4	50.0
All Activity Except Loading, Roaming	81.7		90.4	77.1	86.9	85.1	77.0	78.1	71.5	68.9	69.6	68.1	65.1	62.7	63.7	64.6	63.6	62.5	63.2	62.8	62.5	61.6	61.8	61.0	59.7	58.3	56.2	53.9	50.4

Barrier and Ground Details

Item name	Additional Roof Height	Ground Type	Distance from Source to Barrier	Distance from Barrier 1 to Barrier 2	Effective Barrier Height to Source	Barrier 1 Height	Barrier 2 Height	Measurement Distance
In Front of Vibrating Screen,	0	Hard	30	19	1	6	3	10
Main Water Top Up Pump	0	Hard	28	19	5	6	3	1
Aggmax 83sr Screen	0	Hard	30	20	1	6	3	10
Tracked Loader, Loading Rubble	0	Hard	12	20	3.5	6	3	10
Excavator, East Machinery	0	Hard	28	21	3	6	3	10
All Activity, Roaming	0	Hard	30	20	1.5	6	3	15
All Activity Except Loading, Roaming	0	Hard	30	20	1.5	6	3	15

Atmospheric Attenuation, dB per km, 10 degrees C, 70% humidity

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000
Attenuation per km	0.1	0.4	1	1.9	3.7	9.7	32.8	117

52 Allende Way

Distance Decay

Source	Measurement	Change in Height	Receptor	Line decay	Point Decay	Total Decay
Vibrating Screen,	10.00	1.00	59.95	0.00	15.56	15.56
Main Water Top Up Pump	1.00	1.00	51.04	0.00	34.16	34.16
Aggmax 83sr Screen	10.00	1.00	73.37	0.00	17.31	17.31
Tracked Loader, Loading Rubble	10.00	0.25	62.65	0.00	15.94	15.94
Excavator, East Machinery	10.00	0.00	99.04	0.00	19.92	19.92
All Activity, Roaming	15.00	0.75	57.57	1.05	9.58	10.63
All Activity Except Loading, Roaming	15.00	0.75	57.57	1.05	9.58	10.63

Barrier Effect

Source	Direct Path	Direct Angle	Source to Barrier 1	Receiver to Barrier	Barrier 1 Height	Effective Height Source Barrier 1	Effective Height Receiver Barrier 1	Source Barrier 1 Angle	Receiver Barrier 1 Angle	Source - Barrier In View Path Distance	Receive - Barrier In View Path Distance	Path Length	Path Difference
Vibrating Screen,	59.95	3.34	30.00	10.95	6.00	1.00	4.50	1.91	8.55	30.02	30.29	60.30	0.35
Main Water Top Up Pump	51.04	-0.56	28.00	4.04	6.00	5.00	4.50	10.12	11.05	28.44	23.55	51.99	0.95
Aggmax 83sr Screen	73.37	2.73	30.00	23.37	6.00	1.00	4.50	1.91	5.92	30.02	43.60	73.62	0.25
Tracked Loader, Loading Rubble	62.65	0.91	12.00	30.65	6.00	3.50	4.50	16.26	5.08	12.50	50.85	63.35	0.70
Excavator, East Machinery	99.04	0.87	28.00	50.04	6.00	3.00	4.50	6.12	3.62	28.16	71.19	99.35	0.30
All Activity, Roaming	57.57	2.98	30.00	7.57	6.00	1.50	4.50	2.86	9.27	30.04	27.94	57.98	0.41
All Activity Except Loading, Roaming	57.57	2.98	30.00	7.57	6.00	1.50	4.50	2.86	9.27	30.04	27.94	57.98	0.41

Source	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
Vibrating Screen,	5.90	6.12	6.39	6.69	7.06	7.51	8.00	8.56	9.25	9.95	10.71	11.55	12.47	13.37	14.33	15.34	16.29	17.26	18.33	19.29	20.00	20.00	20.00	20.00	20.00	20.00	20.00	
Main Water Top Up Pump	7.17	7.63	8.17	8.75	9.42	10.19	10.96	11.79	12.76	13.67	14.60	15.58	16.60	17.57	18.57	19.61	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Aggmax 83sr Screen	5.65	5.81	6.01	6.24	6.53	6.88	7.27	7.72	8.30	8.89	9.55	10.31	11.15	11.99	12.90	13.88	14.81	15.76	16.83	17.79	18.76	19.76	20.00	20.00	20.00	20.00	20.00	
Tracked Loader, Loading Rubble	6.68	7.04	7.49	7.98	8.55	9.22	9.92	10.68	11.58	12.44	13.33	14.29	15.30	16.26	17.25	18.29	19.26	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Excavator, East Machinery	5.78	5.97	6.21	6.47	6.81	7.21	7.65	8.16	8.81	9.46	10.18	10.98	11.87	12.75	13.69	14.69	15.64	16.59	17.66	18.63	19.60	20.00	20.00	20.00	20.00	20.00	20.00	20.00
All Activity, Roaming	6.03	6.28	6.58	6.92	7.33	7.82	8.36	8.96	9.70	10.44	11.23	12.11	13.06	13.97	14.94	15.96	16.92	17.89	18.96	19.93	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
All Activity Except Loading, Roaming	6.03	6.28	6.58	6.92	7.33	7.82	8.36	8.96	9.70	10.44	11.23	12.11	13.06	13.97	14.94	15.96	16.92	17.89	18.96	19.93	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Sound Levels and Tones

Sound Level	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,	68.46	65.86	57.29	62.53	47.45	44.09	43.59	42.60	40.14	38.60	37.67	36.68	35.52	33.21	32.15	30.19	28.52	27.06	25.56	24.76	23.66	22.47	20.68	18.60	15.47
Main Water Top Up Pump	54.67	45.79	37.72	42.36	28.49	20.09	18.35	19.53	17.62	16.37	13.73	12.15	10.57	9.82	9.64	8.08	7.41	7.17	7.09	6.77	6.53	6.00	5.00	3.51	2.10

Aggmax 83sr Screen	61.78	54.65	52.26	52.01	47.32	45.07	46.19	44.10	41.14	38.38	40.44	39.00	36.39	36.01	34.28	33.03	31.87	30.80	29.54	27.54	26.00	24.50	22.61	20.33	17.76
Tracked Loader, Loading Rubble	53.02	52.53	49.06	48.59	48.09	48.84	48.14	43.38	42.58	41.62	38.21	37.36	36.26	36.03	34.16	32.21	31.62	31.32	30.62	30.12	28.82	24.73	21.05	17.49	13.80
Excavator, East Machinery	54.68	49.91	46.38	45.47	46.43	44.12	44.28	41.42	39.81	38.70	40.71	39.74	37.50	36.90	36.05	35.69	34.82	32.56	29.09	26.49	23.60	21.02	18.94	16.78	13.29
All Activity, Roaming	69.39	66.35	59.14	59.74	55.11	52.51	52.97	51.63	47.93	45.86	46.01	44.09	41.72	39.90	38.74	37.28	35.91	33.64	32.37	31.17	29.47	27.67	25.48	22.79	19.42
All Activity Except Loading, Roaming	69.69	67.55	59.04	59.64	52.51	49.31	49.27	47.03	43.23	39.96	40.01	39.99	38.02	35.90	35.64	34.28	32.91	31.04	31.17	30.37	29.07	27.67	25.58	23.29	19.81

Difference to Band Lower

	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,	2.60	8.57	5.25	15.09	3.36	0.50	1.00	2.46	1.54	0.92	1.00	1.16	2.31	1.06	1.96	1.67	1.47	1.50	0.80	1.10	1.19	1.79	2.08	
Main Water Top Up Pump	8.88	8.07	4.63	13.87	8.39	1.74	1.18	1.90	1.26	2.64	1.58	1.58	0.76	0.17	1.56	0.67	0.24	0.08	0.32	0.24	0.53	1.00	1.49	
Aggmax 83sr Screen	7.13	2.38	0.25	4.69	2.25	1.12	2.09	2.96	2.75	2.06	1.44	2.61	0.38	1.74	1.25	1.16	1.06	1.27	2.00	1.54	1.50	1.89	2.28	
Tracked Loader, Loading Rubble	0.49	3.47	0.47	0.50	0.74	0.70	4.76	0.80	0.96	3.41	0.86	1.10	0.23	1.87	1.94	0.60	0.30	0.70	0.50	1.30	4.09	3.68	3.56	
Excavator, East Machinery	4.77	3.53	0.91	0.96	2.31	0.16	2.85	1.62	1.11	2.01	0.97	2.24	0.60	0.85	0.36	0.87	2.27	3.47	2.60	2.89	2.58	2.08	2.16	
All Activity, Roaming	3.04	7.21	0.60	4.63	2.60	0.46	1.34	3.70	2.07	0.15	1.92	2.37	1.82	1.16	1.46	1.37	2.27	1.27	1.20	1.70	1.80	2.20	2.69	
All Activity Except Loading, Roaming	2.14	8.51	0.60	7.13	3.20	0.04	2.24	3.80	3.27	0.05	0.02	1.97	2.12	0.26	1.36	1.37	1.87	0.13	0.80	1.30	1.40	2.10	2.29	

Difference to Band Higher

	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,		8.57	5.25	15.09	3.36	0.50	1.00	2.46	1.54	0.92	1.00	1.16	2.31	1.06	1.96	1.67	1.47	1.50	0.80	1.10	1.19	1.79	2.08	3.14	
Main Water Top Up Pump		8.07	4.63	13.87	8.39	1.74	1.18	1.90	1.26	2.64	1.58	1.58	0.76	0.17	1.56	0.67	0.24	0.08	0.32	0.24	0.53	1.00	1.49	1.40	
Aggmax 83sr Screen		2.38	0.25	4.69	2.25	1.12	2.09	2.96	2.75	2.06	1.44	2.61	0.38	1.74	1.25	1.16	1.06	1.27	2.00	1.54	1.50	1.89	2.28	2.57	
Tracked Loader, Loading Rubble		3.47	0.47	0.50	0.74	0.70	4.76	0.80	0.96	3.41	0.86	1.10	0.23	1.87	1.94	0.60	0.30	0.70	0.50	1.30	4.09	3.68	3.56	3.69	
Excavator, East Machinery		3.53	0.91	0.96	2.31	0.16	2.85	1.62	1.11	2.01	0.97	2.24	0.60	0.85	0.36	0.87	2.27	3.47	2.60	2.89	2.58	2.08	2.16	3.48	
All Activity, Roaming		7.21	0.60	4.63	2.60	0.46	1.34	3.70	2.07	0.15	1.92	2.37	1.82	1.16	1.46	1.37	2.27	1.27	1.20	1.70	1.80	2.20	2.69	3.37	
All Activity Except Loading, Roaming		8.51	0.60	7.13	3.20	0.04	2.24	3.80	3.27	0.05	0.02	1.97	2.12	0.26	1.36	1.37	1.87	0.13	0.80	1.30	1.40	2.10	2.29	3.47	

Presence of Tone

	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	
Vibrating Screen,	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Main Water Top Up Pump	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Aggmax 83sr Screen	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Tracked Loader, Loading Rubble	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Excavator, East Machinery	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
All Activity, Roaming	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
All Activity Except Loading, Roaming	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Tudor Close

Distance Decay

Source	Is Receptor Facing Major or Minor	Plane	Line	Measurement	Change in Height	Receptor	Line decay	Point Decay	Total Decay
Vibrating Screen,	Major	0.32	1.59	10.00	1.00	75.13	0.00	17.52	17.52
Main Water Top Up Pump	Major	0.32	0.32	1.00	1.00	80.17	0.00	38.08	38.08
Aggmax 83sr Screen	Major	0.32	1.59	10.00	1.00	65.68	0.00	16.35	16.35
Tracked Loader, Loading Rubble	Major	0.32	0.80	10.00	0.25	45.28	0.00	13.12	13.12
Excavator, East Machinery	Major	0.32	0.95	10.00	0.00	62.04	0.00	15.85	15.85
All Activity, Roaming	Major	1.43	19.10	15.00	0.75	60.89	1.05	10.07	11.12
All Activity Except Loading, Roaming	Major	1.43	19.10	15.00	0.75	62.29	1.05	10.27	11.32

Barrier Effect

Source	Direct Path	Direct Angle	Source to Barrier 1	Barrier 1 to Barrier 2	Receiver to Barrier	Barrier 1 Height	Barrier 2 Height	Barrier 1 to Barrier 2 Height	Effective Height Source Barrier 1	Effective Height Source Barrier 2	Effective Height Receiver Barrier 1	Effective Height Receiver Barrier 2	Source Barrier 1 Angle	Source Barrier 2 Angle	Receiver Barrier 1 Angle	Receiver Barrier 2 Angle	Source - Barrier In View Path Distance	Barrier 1 to Barrier 2 Path Distance	Receive - Barrier In View Path Distance	Path Length	Path Difference	
Vibrating Screen,	75.13	2.67	30.00	19.00	26.13	6.00	3.00	-3.00	1.00	0.00	4.50	1.50	1.91	0.00	5.69	3.28	30.02	0.00	45.36	75.38	0.24	
Main Water Top Up Pump	80.17	-0.36	28.00	19.00	33.17	6.00	3.00	-3.00	5.00	2.00	4.50	1.50	10.12	2.44	4.93	2.59	28.44	0.00	52.37	80.81	0.64	
Aggmax 83sr Screen	65.68	3.05	30.00	20.00	15.68	6.00	3.00	-3.00	1.00	0.00	4.50	1.50	1.91	0.00	7.19	5.47	30.02	0.00	35.96	65.97	0.30	
Tracked Loader, Loading Rubble	45.28	1.27	12.00	20.00	13.28	6.00	3.00	-3.00	3.50	0.50	4.50	1.50	16.26	0.90	7.70	6.44	12.50	0.00	33.59	46.09	0.80	
Excavator, East Machinery	62.04	1.39	28.00	21.00	13.04	6.00	3.00	-3.00	3.00	0.00	4.50	1.50	6.12	0.00	7.53	6.56	28.16	0.00	34.33	62.49	0.46	
All Activity, Roaming	60.89	2.82	30.00	20.00	10.89	6.00	3.00	-3.00	1.50	0.00	4.50	1.50	2.86	0.00	8.29	7.84	30.04	0.00	31.21	61.25	0.36	
All Activity Except Loading, Roaming	62.29	2.76	30.00	20.00	12.29	6.00	3.00	-3.00	1.50	0.00	4.50	1.50	2.86	0.00	7.93	6.96	30.04	0.00	32.60	62.64	0.35	

Source	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,	5.63	5.78	5.98	6.20	6.48	6.82	7.20	7.64	8.21	8.79	9.44	10.18	11.02	11.85	12.75	13.73	14.66	15.61	16.67	17.63	18.60	19.60	20.00	20.00	20.00	20.00	20.00
Main Water Top Up Pump	6.54	6.89	7.31	7.76	8.31	8.95	9.62	10.35	11.23	12.07	12.95	13.90	14.90	15.85	16.85	17.88	18.85	19.82	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Aggmax 83sr Screen	5.77	5.96	6.20	6.46	6.79	7.19	7.63	8.14	8.78	9.43	10.14	10.94	11.83	12.71	13.64	14.64	15.59	16.55	17.61	18.58	19.55	20.00	20.00	20.00	20.00	20.00	20.00
Tracked Loader, Loading Rubble	6.89	7.29	7.78	8.31	8.93	9.65	10.38	11.17	12.10	12.99	13.90	14.87	15.89	16.85	17.85	18.88	19.85	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Excavator, East Machinery	6.14	6.41	6.74	7.10	7.55	8.08	8.65	9.28	10.06	10.83	11.65	12.55	13.51	14.44	15.42	16.44	17.40	18.37	19.44	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
All Activity, Roaming	5.93	6.15	6.42	6.73	7.11	7.57	8.07	8.63	9.34	10.05	10.81	11.66	12.59	13.49	14.45	15.47	16.42	17.39	18.46	19.42	20.00	20.00	20.00	20.00	20.00	20.00	20.00
All Activity Except Loading, Roaming	5.89	6.11	6.37	6.67	7.04	7.49	7.98	8.53	9.22	9.92	10.67	11.51	12.43	13.33	14.29	15.30	16.25	17.22	18.28	19.25	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Sound Levels and Tones

Sound Level	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,	66.91	64.38	55.91	61.26	46.28	43.04	42.68	41.79	39.44	38.00	37.17	36.24	35.13	32.86	31.83	29.88	28.22	26.76	25.00	23.20	21.71	20.52	18.74	16.68	13.58
Main Water Top Up Pump	51.61	42.86	34.91	39.67	25.91	17.65	16.00	17.23	15.40	14.19	11.63	10.11	8.62	7.91	7.27	5.18	4.51	4.32	4.26	4.01	3.84	3.44	2.73	1.77	0.98
Aggmax 83sr Screen	62.56	55.39	52.96	52.66	47.92	45.61	46.67	44.52	41.51	38.71	40.72	39.25	36.61	36.21	34.46	33.21	32.04	30.98	29.71	28.26	26.96	25.46	23.57	21.28	18.71
Tracked Loader, Loading Rubble	55.55	55.02	51.50	50.99	50.45	51.16	50.43	45.64	44.83	43.86	40.44	39.58	38.48	38.25	36.38	35.03	34.43	34.13	33.43	32.93	31.63	27.54	23.85	20.27	16.53
Excavator, East Machinery	58.21	53.34	49.70	48.67	49.50	47.07	47.09	44.12	42.40	41.20	43.14	42.11	39.83	39.21	38.34	37.98	37.11	35.25	32.75	30.55	27.65	25.06	22.97	20.78	17.23
All Activity, Roaming	69.06	66.05	58.87	59.51	54.91	52.35	52.84	51.53	47.87	45.82	45.99	44.09	41.73	39.91	38.76	37.30	35.93	33.66	31.88	30.68	28.99	27.19	24.99	22.31	18.94
All Activity Except Loading, Roaming	69.21	67.11	58.64	59.29	52.21	49.05	49.06	46.87	43.11	39.87	39.95	39.95	37.99	35.89	35.63	34.27	32.90	31.03	30.49	29.69	28.39	26.99	24.90	22.61	19.14

Difference to Band Lower

	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,	2.52	8.48	5.36	14.98	3.24	0.37	0.88	2.35	1.44	0.83	0.93	1.11	2.27	1.03	1.95	1.66	1.46	1.76	1.80	1.49	1.19	1.78	2.06	
Main Water Top Up Pump	8.76	7.94	4.76	13.76	8.27	1.64	1.23	1.84	1.21	2.56	1.52	1.50	0.71	0.63	2.10	0.66	0.19	0.06	0.25	0.18	0.40	0.71	0.96	
Aggmax 83sr Screen	7.17	2.43	0.30	4.74	2.31	1.06	2.15	3.01	2.80	2.01	1.47	2.64	0.40	1.75	1.26	1.17	1.07	1.27	1.45	1.30	1.50	1.89	2.29	
Tracked Loader, Loading Rubble	0.53	3.52	0.52	0.53	0.71	0.73	4.78	0.81	0.97	3.42	0.86	1.10	0.24	1.87	1.35	0.60	0.30	0.70	0.50	1.30	4.10	3.69	3.58	
Excavator, East Machinery	4.87	3.64	1.03	0.83	2.44	0.02	2.97	1.72	1.20	1.93	1.03	2.28	0.62	0.86	0.37	0.87	1.86	2.50	2.20	2.90	2.59	2.09	2.19	
All Activity, Roaming	3.01	7.18	0.64	4.60	2.57	0.49	1.31	3.67	2.05	0.17	1.90	2.36	1.81	1.16	1.46	1.37	2.27	1.78	1.20	1.70	1.80	2.19	2.69	
All Activity Except Loading, Roaming	2.10	8.47	0.65	7.09	3.15	0.01	2.20	3.76	3.24	0.08	0.00	1.96	2.11	0.26	1.36	1.37	1.87	0.55	0.80	1.30	1.40	2.09	2.29	

Difference to Band Higher

	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,	8.48	5.36	14.98	3.24	0.37	0.88	2.35	1.44	0.83	0.93	1.11	2.27	1.03	1.95	1.66	1.46	1.76	1.80	1.49	1.19	1.78	2.06	3.10	
Main Water Top Up Pump	7.94	4.76	13.76	8.27	1.64	1.23	1.84	1.21	2.56	1.52	1.50	0.71	0.63	2.10	0.66	0.19	0.06	0.25	0.18	0.40	0.71	0.96	0.79	
Aggmax 83sr Screen	2.43	0.30	4.74	2.31	1.06	2.15	3.01	2.80	2.01	1.47	2.64	0.40	1.75	1.26	1.17	1.07	1.27	1.45	1.30	1.50	1.89	2.29	2.57	
Tracked Loader, Loading Rubble	3.52	0.52	0.53	0.71	0.73	4.78	0.81	0.97	3.42	0.86	1.10	0.24	1.87	1.35	0.60	0.30	0.70	0.50	1.30	4.10	3.69	3.58	3.74	
Excavator, East Machinery	3.64	1.03	0.83	2.44	0.02	2.97	1.72	1.20	1.93	1.03	2.28	0.62	0.86	0.37	0.87	1.86	2.50	2.20	2.90	2.59	2.09	2.19	3.55	
All Activity, Roaming	7.18	0.64	4.60	2.57	0.49	1.31	3.67	2.05	0.17	1.90	2.36	1.81	1.16	1.46	1.37	2.27	1.78	1.20	1.70	1.80	2.19	2.69	3.37	
All Activity Except Loading, Roaming	8.47	0.65	7.09	3.15	0.01	2.20	3.76	3.24	0.08	0.00	1.96	2.11	0.26	1.36	1.37	1.87	0.55	0.80	1.30	1.40	2.09	2.29	3.47	

Presence of Tone

	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	
Vibrating Screen,	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Main Water Top Up Pump	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Aggmax 83sr Screen	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Tracked Loader, Loading Rubble	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Excavator, East Machinery	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
All Activity, Roaming	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
All Activity Except Loading, Roaming	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Rustic Court

Distance Decay

Source	Is Receptor Facing Major or Minor	Plane	Line	Measurement	Change in Height	Receptor	Line decay	Point Decay	Total Decay
Vibrating Screen,	Major	0.32	1.59	10.00	0.00	130.07	0.00	22.28	22.28
Main Water Top Up Pump	Major	0.32	0.32	1.00	2.00	140.69	0.00	42.97	42.97
Aggmax 83sr Screen	Major	0.32	1.59	10.00	0.00	109.95	0.00	20.82	20.82
Tracked Loader, Loading Rubble	Major	0.32	0.80	10.00	1.25	62.10	0.00	15.86	15.86
Excavator, East Machinery	Major	0.32	0.95	10.00	1.00	79.13	0.00	17.97	17.97
All Activity, Roaming	Major	1.43	19.10	15.00	0.25	81.80	1.05	12.63	13.68
All Activity Except Loading, Roaming	Major	1.43	19.10	15.00	0.25	81.80	1.05	12.63	13.68

Barrier Effect

Source	Direct Path	Direct Angle	Source to Barrier 1	Barrier 1 to Barrier 2	Receiver to Barrier	Barrier 1 Height	Barrier 2 Height	Barrier 1 to Barrier 2 Height	Effective Height Source Barrier 1	Effective Height Source Barrier 2	Effective Height Receiver Barrier 1	Effective Height Receiver Barrier 2	Source Barrier 1 Angle	Source Barrier 2 Angle	Receiver Barrier 1 Angle	Receiver Barrier 2 Angle	Source - Barrier In View Path Distance	Barrier 1 to Barrier 2 Path Distance	Receive - Barrier In View Path Distance	Path Length	Path Difference	
Vibrating Screen,	130.07	1.10	30.00	19.00	81.07	6.00	3.00	-3.00	1.00	0.00	3.50	0.50	1.91	0.00	2.00	0.35	30.02	0.00	100.13	130.15	0.08	
Main Water Top Up Pump	140.69	-0.61	28.00	19.00	93.69	6.00	3.00	-3.00	5.00	2.00	3.50	0.50	10.12	2.44	1.78	0.31	28.44	0.00	112.74	141.19	0.50	
Aggmax 83sr Screen	109.95	1.30	30.00	20.00	59.95	6.00	3.00	-3.00	1.00	0.00	3.50	0.50	1.91	0.00	2.51	0.48	30.02	0.00	80.03	110.04	0.09	
Tracked Loader, Loading Rubble	62.10	0.00	12.00	20.00	30.10	6.00	3.00	-3.00	3.50	0.50	3.50	0.50	16.26	0.90	4.00	0.95	12.50	0.00	50.23	62.73	0.62	
Excavator, East Machinery	79.13	0.36	28.00	21.00	30.13	6.00	3.00	-3.00	3.00	0.00	3.50	0.50	6.12	0.00	3.92	0.95	28.16	0.00	51.25	79.41	0.28	
All Activity, Roaming	81.80	1.40	30.00	20.00	31.80	6.00	3.00	-3.00	1.50	0.00	3.50	0.50	2.86	0.00	3.87	0.90	30.04	0.00	51.91	81.95	0.16	
All Activity Except Loading, Roaming	81.80	1.40	30.00	20.00	31.80	6.00	3.00	-3.00	1.50	0.00	3.50	0.50	2.86	0.00	3.87	0.90	30.04	0.00	51.91	81.95	0.16	

Source	25	31.5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
Vibrating Screen,	5.21	5.26	5.33	5.41	5.52	5.65	5.80	5.99	6.24	6.51	6.84	7.24	7.72	8.23	8.84	9.55	10.27	11.06	11.98	12.86	13.77	14.74	15.76	16.72	17.72	18.75	19.72	
Main Water Top Up Pump	6.24	6.52	6.87	7.26	7.73	8.29	8.88	9.54	10.35	11.14	11.98	12.89	13.86	14.80	15.78	16.81	17.78	18.74	19.81	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Aggmax 83sr Screen	5.25	5.32	5.40	5.49	5.62	5.77	5.95	6.17	6.46	6.77	7.14	7.59	8.13	8.70	9.37	10.13	10.90	11.73	12.69	13.60	14.53	15.51	16.53	17.50	18.50	19.53	20.00	
Tracked Loader, Loading Rubble	6.51	6.85	7.26	7.71	8.25	8.88	9.55	10.27	11.14	11.98	12.86	13.80	14.80	15.75	16.75	17.78	18.75	19.71	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Excavator, East Machinery	5.73	5.90	6.12	6.38	6.69	7.07	7.49	7.98	8.60	9.23	9.92	10.71	11.58	12.44	13.37	14.36	15.30	16.26	17.32	18.29	19.26	20.00	20.00	20.00	20.00	20.00	20.00	20.00
All Activity, Roaming	5.41	5.52	5.65	5.80	6.00	6.24	6.51	6.84	7.26	7.72	8.23	8.84	9.55	10.27	11.08	11.98	12.86	13.77	14.80	15.75	16.71	17.71	18.75	19.72	20.00	20.00	20.00	20.00
All Activity Except Loading, Roaming	5.41	5.52	5.65	5.80	6.00	6.24	6.51	6.84	7.26	7.72	8.23	8.84	9.55	10.27	11.08	11.98	12.86	13.77	14.80	15.75	16.71	17.71	18.75	19.72	20.00	20.00	20.00	20.00

Sound Levels and Tones

Sound Level	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
Vibrating Screen,	62.78	60.40	52.10	57.67	42.91	39.93	39.88	39.30	37.28	36.18	35.70	35.08	34.27	32.27	31.44	29.66	28.14	26.76	25.06	23.30	21.19	19.05	16.30	13.27	9.42	
Main Water Top Up Pump	47.16	38.47	30.61	35.45	21.78	13.68	12.16	13.40	11.67	10.55	8.19	6.84	5.56	4.98	4.48	2.91	2.09	1.91	1.88	1.74	1.65	1.44	1.09	0.66	0.34	
Aggmax 83sr Screen	58.88	51.88	49.66	49.60	45.13	43.11	44.52	42.71	40.03	37.59	39.95	38.77	36.41	36.25	34.67	33.55	32.49	31.48	30.25	28.28	25.95	23.50	20.62	17.32	14.34	
Tracked Loader, Loading Rubble	53.33	52.87	49.44	49.00	48.54	49.32	48.65	43.91	43.13	42.19	38.79	37.94	36.84	36.61	34.74	32.58	31.69	31.39	30.69	30.19	28.89	24.80	21.12	17.56	13.87	
Excavator, East Machinery	56.71	51.96	48.45	47.56	48.54	46.25	46.44	43.61	42.01	40.93	42.96	41.99	39.77	39.17	38.33	37.98	37.11	34.85	31.38	28.44	25.54	22.95	20.87	18.69	15.17	
All Activity, Roaming	67.27	64.41	57.42	58.28	53.90	51.58	52.35	51.30	47.88	46.07	46.47	44.74	42.53	40.84	39.76	38.35	37.01	34.76	32.60	30.41	27.68	24.91	22.44	19.76	16.42	
All Activity Except Loading, Roaming	67.57	65.61	57.32	58.18	51.30	48.38	48.65	46.70	43.18	40.17	40.47	40.64	38.83	36.84	36.66	35.35	34.01	32.16	31.41	29.61	27.28	24.91	22.54	20.26	16.81	

Difference to Band Lower

	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000	
Vibrating Screen,	2.38	8.30	5.57	14.75	2.99	0.05	0.57	2.02	1.10	0.48	0.62	0.81	2.00	0.82	1.78	1.52	1.38	1.71	1.76	2.10	2.14	2.75	3.03		
Main Water Top Up Pump	8.69	7.87	4.84	13.67	8.10	1.52	1.24	1.74	1.12	2.36	1.34	1.28	0.58	0.51	1.57	0.81	0.18	0.04	0.14	0.10	0.21	0.35	0.43		
Aggmax 83sr Screen	7.00	2.22	0.06	4.48	2.02	1.41	1.81	2.67	2.45	2.36	1.17	2.37	0.16	1.57	1.12	1.06	1.00	1.23	1.98	2.32	2.46	2.88	3.29		
Tracked Loader, Loading Rubble	0.45	3.44	0.43	0.46	0.77	0.67	4.74	0.78	0.94	3.40	0.85	1.09	0.23	1.87	2.17	0.88	0.30	0.70	0.50	1.30	4.09	3.68	3.56		
Excavator, East Machinery	4.75	3.51	0.88	0.98	2.29	0.18	2.83	1.60	1.08	2.03	0.96	2.23	0.59	0.84	0.36	0.86	2.27	3.47	2.94	2.89	2.59	2.09	2.18		
All Activity, Roaming	2.85	6.99	0.86	4.37	2.32	0.77	1.05	3.42	1.81	0.39	1.73	2.21	1.70	1.08	1.41	1.33	2.25	2.16	2.20	2.73	2.76	2.47	2.68		
All Activity Except Loading, Roaming	1.95	8.29	0.86	6.87	2.92	0.27	1.95	3.52	3.01	0.29	0.17	1.81	2.00	0.18	1.31	1.33	1.85	0.76	1.80	2.33	2.36	2.37	2.28		

Difference to Band Higher

	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000	10000
Vibrating Screen,	8.30	5.57	14.75	2.99	0.05	0.57	2.02	1.10	0.48	0.62	0.81	2.00	0.82	1.78	1.52	1.38	1.71	1.76	2.10	2.14	2.75	3.03	3.85	
Main Water Top Up Pump	7.87	4.84	13.67	8.10	1.52	1.24	1.74	1.12	2.36	1.34	1.28	0.58	0.51	1.57	0.81	0.18	0.04	0.14	0.10	0.21	0.35	0.43	0.32	
Aggmax 83sr Screen	2.22	0.06	4.48	2.02	1.41	1.81	2.67	2.45	2.36	1.17	2.37	0.16	1.57	1.12	1.06	1.00	1.23	1.98	2.32	2.46	2.88	3.29	2.98	
Tracked Loader, Loading Rubble	3.44	0.43	0.46	0.77	0.67	4.74	0.78	0.94	3.40	0.85	1.09	0.23	1.87	2.17	0.88	0.30	0.70	0.50	1.30	4.09	3.68	3.56	3.69	
Excavator, East Machinery	3.51	0.88	0.98	2.29	0.18	2.83	1.60	1.08	2.03	0.96	2.23	0.59	0.84	0.36	0.86	2.27	3.47	2.94	2.89	2.59	2.09	2.18	3.52	

All Activity, Roaming	6.99	0.86	4.37	2.32	0.77	1.05	3.42	1.81	0.39	1.73	2.21	1.70	1.08	1.41	1.33	2.25	2.16	2.20	2.73	2.76	2.47	2.68	3.35
All Activity Except Loading, Roaming	8.29	0.86	6.87	2.92	0.27	1.95	3.52	3.01	0.29	0.17	1.81	2.00	0.18	1.31	1.33	1.85	0.76	1.80	2.33	2.36	2.37	2.28	3.45

Presence of Tone

	50	63	80	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000	6300	8000
Vibrating Screen,	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Main Water Top Up Pump	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Aggmax 83sr Screen	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Tracked Loader, Loading Rubble	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Excavator, East Machinery	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
All Activity, Roaming	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
All Activity Except Loading, Roaming	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No

Sound Level Predictions

	Total dB LAeq	Total Rating Level	Total Octaves, Leq										Sound Levels					Rating Corrections				
			31.5	63	125	250	500	1000	2000	4000	8000	Vibrating Screen,	Top Up Pump,	Aggmax 83sr Screen,	Tracked Loader,	Excavator, East Machinery,	Vibrating Screen,	Top Up Pump,	Aggmax 83sr Screen,	Tracked Loader,	Excavator, East Machinery,	
52 Allende Way	51.8	55	73.8	68.7	57.3	52.2	49.1	45.4	41.7	36.9	29.7	45.9	25.9	45.6	45.7	46.0	3	0	0	6	0	
Tudor Close	53.2	56	73.7	67.9	58.9	53.6	50.5	46.9	43.7	39.0	31.3	45.0	23.1	45.9	48.1	48.5	3	0	0	6	0	
Rustic Court	52.1	55	70.3	64.5	57.1	52.2	49.8	46.4	42.9	37.1	28.5	42.9	19.4	45.3	46.2	48.3	3	0	0	6	0	

Appendix B
Complaints Procedure and Form

Complaints Procedure

INTRODUCTION

This Complaints Procedure outlines how the Operator will respond in the event of a complaint. A complaint may arise relating to the site permitted activities involving a nuisance (dust, noise, odour, pests). This procedure contains information on how any complaint will be investigated and any actions taken as a result of the complaint.

KEY CONTACTS

The key contacts will be shown on the site notice board at the site entrance. Alternatively, any complaints can be made at the site to any site operative and/or the Site Manager. The contacts are shown below.

Contact	Role	Contact Number
Nick Brocklebank	Managing Director / Operations Manager	0114 244 1584
On site Site Manager	Responsible for operation at the site under the Environmental Permit and their staff at the site	0114 244 1584
Supervisor / Engineer	Responsible for implementing and inspection of controls at the site under the Environmental Permit and their staff at the site	0114 244 1584

PROCEDURE

1. Any complaints made will be immediately logged by the Site Manager and/or Site Operative. In the event a complaint is made to a Site Operative, the Site Operative will refer the complaint to the Site Manager. If able to do so, the complainant details will be taken on initial contact either by phone or in person.
2. The Site Manager (or nominated operative) will discuss any concerns with the complainant directly within 1 working day of the complaint being made; and request contact details to notify the complainant of any updates/corrective measures. The complaint will be logged using the Complaint Form (attached) and given a unique reference number.
3. The Site Manager will review the site activities and ensure control measures are in accordance with the Site's Management Systems.
4. The Site Manager will investigate the location of concern raised in relation to the site i.e. at a local receptor location and/or public highway to inspect the impact on the receptor.
5. The Site Manager will notify the complainant of any updates to the control measures / site operations. Control measures may be corrective and/or preventative and include additional control measures and/or increase the frequency of an existing control measure. Alternatively, the design of the site operations may change to decrease nuisance to that receptor.
6. In the event the same issue persists, the Site Manager will further review site operations and control measures. This may require a temporary cessation of certain operations whilst additional measure is implemented. The works will not recommence until further control measures have been incorporated and a review of effectiveness has been agreed / witnessed by the Site Manager. The complainant will be kept abreast of further measures.

The target close out of any complaint is within 1 week of point 1 however this is dependent on the complaint, effectiveness of control and any third-party testing required to quantify complaint and/or control.

Complaints Procedure

RECORDS

On site Records

A copy of this procedure is kept on site and briefed to all site operatives upon site induction. Any identified complaints, incidents or accidents, as well as corrective measures, are recorded in the Complaint Form. Copies of the complaint forms are kept on site.

Review

This procedure is reviewed on a yearly basis or post-incident to ensure it remains up-to-date with the site operations.

Complaint Form

Complaint Form Reference No.	
------------------------------	--

Date of Complaint	
-------------------	--

Details of Complainant			
Name			
Address			
Contact Number		Email Address	
Nature of Complaint			
Reported To		Date of Incident (if different to date of complaint)	
Corrective Measure Taken			
Follow up Communication with Complainant			
Preventative Measure Taken (if any)			
Sign off		Close out Date	