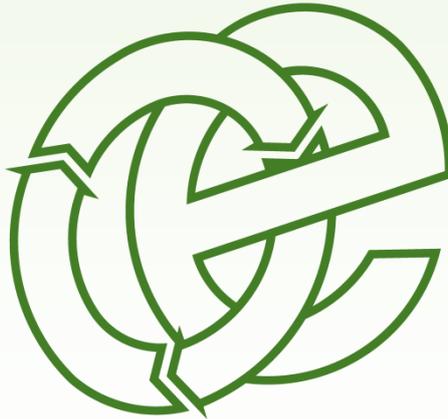


# NOISE IMPACT ASSESSMENT

Sutton Wharf, Rochehall Way, Purdeys Industrial Estate, Rochford, SS4 1JU

**Allsort Grab Services Ltd**

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**Appendix I - Drawings**

# **1 Introduction**

1.1.1 Oaktree Environmental have been commissioned by Allsort Grab Services Ltd to undertake a Noise Impact Assessment (NIA) for their waste management site at Sutton Wharf, Rochehall Way, Purdeys Industrial Estate, Rochford, SS4 1JU.

1.1.2 The report has been produced by Thomas Benson of Oaktree Environmental, an associate member of the Institute of Acoustics. Full credentials can be provided under separate cover, if required. However, these do comply with the recently revised national guidance. Produced by the Environment Agency.

1.1.3 The purpose of this document is to accompany an application to vary the site Environmental Permit (EP).

## **1.2 Site Description and Location**

1.2.1 The site is located on Land at Sutton Wharf, Rochehall Way, Purdeys Industrial Estate, Rochford, SS4 1JU. The national grid reference for the site is TQ 88859 90016. The surrounding land uses include mixed industrial/commercial uses associated with the wider Purdeys Industrial Estate. Southend Airport is located approximately 1.3km to the southeast.

1.2.2 The nearest noise sensitive receptors comprise Broomhills assisted living residence and the dwellings located off Mill Lane, 300m and 478m north respectively, as well as the residential dwellings located to the north off Shopland Road, between 300-495m from the southern site boundary.

### 1.3 **Hours of Operation**

1.3.1 The waste site will typically be open during the following hours for all waste operations, i.e. depositing, sorting, moving, storing and removing waste:

Monday to Friday	07:00 – 17:00
Saturday	07:00 – 14:00
Sundays, Bank/Public holidays	Closed

### 1.4 **Environmental Regulation**

1.4.1 An Environmental Permit (EP) will be required to be in place for the site, with day-to-day operations regulated by the Environment Agency (EA). Potential impacts on air, land and water will be fully controlled and regulated under the EP.

## **2 Planning Policy**

### **2.1 Environment Agency Guidance**

2.1.1 This document has been produced in accordance with the EA's guidance "Noise and vibration management: environmental permits" updated 31 January 2022.

### **2.2 Noise Policy Statement for England**

2.2.1 The Noise Policy Statement for England (NPSE), March 2010, sets out the Government's long-term noise policy, the aims of which are:

*"Through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development:*

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

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

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

2.2.4 With regards to the SOAEL, the document states, *"It is not possible to have a single objective noise-based measure that defines SOAEL that is applicable to all sources of noise in all situations"*, thus acknowledging that this is very much dependent on the noise source, the receptor, and the time of day. Therefore, the NPSE provides the necessary policy flexibility until further guidance / evidence is available.

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

## 2.3 **National Planning Policy Framework**

2.3.1 The NPPF, revised in July 2021, states that Planning policies and decisions should also ensure that new development is appropriate for its location, taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- Mitigate and reduce to a minimum potential adverse impact resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- Identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

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

2.3.3 The revised document also makes reference to the Noise Policy Statement for England.



## 2.4 **Planning Practice Guidance – Noise**

2.4.1 Further to the guidance set out in the NPPF, Planning Practice Guidance for Noise advises that the Local Authority should consider the following when decision making:

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

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

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

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

### **3 Noise Assessment Criteria**

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

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

#### **3.2 BS8233:2014**

3.2.1 This document provides guidance on the relevant level of sound insulation required by a variety of building types affected by general environmental noise and provides recommendations for appropriate internal ambient noise level criteria for a variety of different situations including residential dwellings. The table below includes the proposed noise criteria within BS8233:2014 with regards to residential properties:

**Table 3.1 - BS8233:2014 Internal Criteria**

<b>Activity</b>	<b>Location</b>	<b>07:00 – 23:00</b>	<b>23:00 – 7:00</b>
Resting	Living rooms	35 LAeq, 16hour	-
Dining	Dining room	40 LAeq, 16hour	-
Sleeping	Bedroom	35 LAeq, 16hour	30 LAeq, 16hour

#### **3.3 BS4142:2014**

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

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

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

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

**Table 3.2 - BS4142:2014 Corrections and Penalties**

	<b>Tonality</b>	<b>Impulsivity</b>	<b>Other characteristics</b>
Just perceptible	+ 2dB	+ 3dB	
Clearly perceptible	+ 4dB	+ 6dB	
Highly perceptible	+ 6dB	+ 9dB	
Readily Distinctive against Residual Environment			+ 3Db

### 3.4 WHO Guidelines for Community Noise

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

- 3.4.2 The document states that the number of noise events should also be considered and that individual noise events should not exceed 45 dB ( $LA_{fmax}$ ) more than 10 – 15 times per night.
- 3.4.3 The WHO document also recommends that steady, continuous noise levels should not exceed 55 dB (LAeq) for outdoor living areas (balconies, terraces etc.). However, in order to protect the majority of individuals from moderate annoyance, external noise levels should not exceed 50 dB (LAeq).

## 4 Background Noise Monitoring

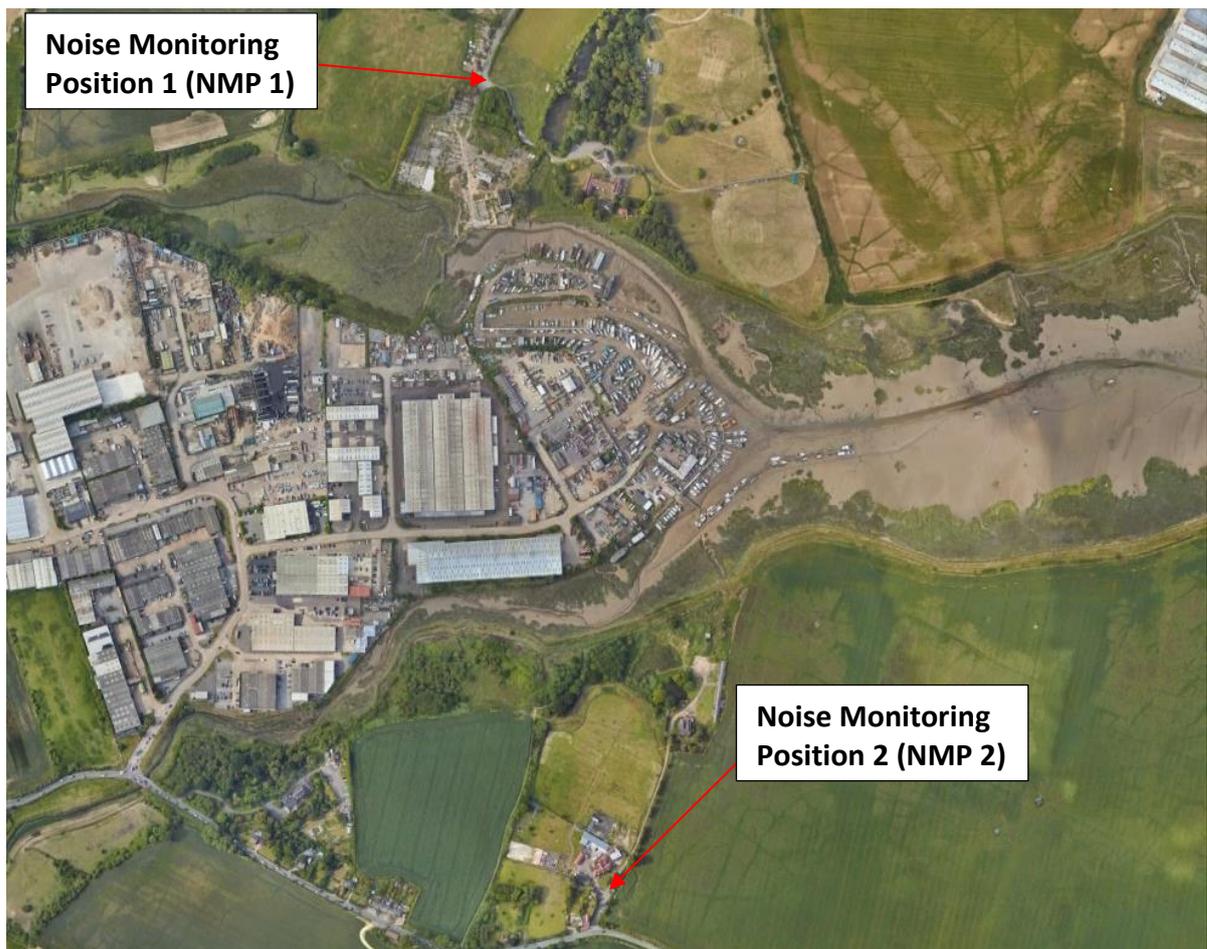
### 4.1 Procedure and Monitoring Locations

4.1.1 A background noise survey was completed on the 15<sup>th</sup> March 2023 in accordance with BS 7445-1: 2003 by Thomas Benson of Oaktree Environmental Ltd.

4.1.2 To ensure that the background monitoring survey is representative of the existing noise climate in the vicinity of the noise sensitive receptors in the absence of the activities associated with the operator, it was agreed with site management that waste related activities would cease for several hourlong periods whilst monitoring was undertaken.

4.1.3 Figure 4.1 below details the location of the monitoring positions.

**Figure 4.1 - Site location and noise monitoring positions**



- 4.1.4 Locations chosen were chosen to be representative of the nearest noise sensitive receptors.
- 4.1.5 NMP 1 was located to the southern end of Mill Lane, approximately 5m from the southernmost façade of the nearest residential buildings. This is also at the junction of Mill Lane with the private access road associated with Broomhill residential care home.
- 4.1.6 NMP 2 was located within an area off the access road to the north of Shopland Road, within very close vicinity of the residential dwellings at this location. Whilst a farmhouse is present further up the access road, entry could not be granted to this area as a private locked gate and numerous signs advising of no entry prohibited access.
- 4.1.7 Considering the nature of the background noise survey (i.e. during pre-agreed shutdowns of an already existing facility), attended measurements were undertaken as a pose to longer duration, unattended measurements. This allowed for a significant level of observation to be made with regards to the existing noise climate and the sources it is comprised of. As previously discussed, BS4142:2014 provides significant weight to context when determining the level of impact.
- 4.1.8 Whilst the site does operate between the hours of 07:00-14:00 on Saturdays, this is primarily a maintenance and housekeeping day, with limited tipping/sorting and no screening/crushing undertaken. Considering the reduction in activity and associated noise levels, no background monitoring was undertaken during the weekend hours. This is discussed further within Section 5.0.

## 4.2 Equipment Used During the Survey

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

**Table 4.1- Survey Equipment**

Description	Model	Manufacturer	Serial No.	Calibration Date
Class 1 Sound Analyser	NOR 150	Norsonic	15030504	October 2022
Microphone	Norsonic Type 1225	Norsonic	305208	October 2022
Field Calibrator	NOR 1251	Norsonic	35205	March 2022

## 4.3 Weather

4.3.1 The weather during the background surveys is summarised in the table below:

**Table 4.2 – Weather Conditions during noise monitoring**

Date	Wind Speed (max)	Cloud Cover	Temperature	Precipitation
Saturday 15/03/2023	Max gusts of 2m/s	0-25%	1°C-5°C	None recorded whilst onsite.

## 4.4 Results

4.4.1 The results of the background noise monitoring survey are tabulated below in Tables 4.3-4.4. Commentary on the background level and survey is included further on in Section 4.5.

**Table 4.3 -Weekday background monitoring results for NMP 1**

Measurement Time	LA <sub>eq</sub>	LA <sub>max</sub>	LA <sub>90</sub>	LA <sub>10</sub>
07:20-08:20	51.6	78.6	36.9	48.2
10:20-11:20	55.1	82.4	37.5	53.4

**Table 4.4 -Weekday background monitoring results for NMP 2**

Measurement Time	LA <sub>eq</sub>	LA <sub>max</sub>	LA <sub>90</sub>	LA <sub>10</sub>
08:30-09:30	56.2	69.4	42.3	60.6
09:30-10:30	55.1	70.9	43.1	59.3

## 4.5 Existing Noise Climate

4.5.1 During the monitoring survey undertaken at NMP 1 to the north of the site, it was observed that the main contributors to the existing noise climate comprised primarily;

- Road traffic along Mill Lane, primarily associated with small vehicles accessing the residential care home to the east,
- Distant road traffic along Stambridge Road to the north,
- Aviation associated with Southend Airport to the southwest,
- Birdsong,
- Industrial/commercial noise from the north comprising primarily bangs/crashes associated with plant as well as audible HGV movements.

4.5.2 Additional minor contributions include dogwalkers using the derelict land to the south of the monitoring position and the soft landscaping areas/fields within the area.

4.5.3 Occasionally distant commercial/agricultural noise was audible in the form of distant bangs/crashes and audible plant noise (engines revving etc.). However, the contribution of these is relatively minor.

4.5.4 The impact of road traffic was noticeably greater at NMP2 than NMP1 due tot the close proximity and busy nature of Shopland Road.

4.5.5 Birdsong and movements associated with local residents (couriers, leaving for work etc.) were also observed.

4.5.6 Should It be required, photographs and videos can be provided, along with the noise measurement files in order to corroborate the above observations. These are available upon request by the LA/EA.



## **5 Noise Impact Assessment**

### **5.1 Introduction**

5.1.1 It is considered the most significant noise sources associated with the development are:

- The loading and subsequent operation of the soil screener & crusher,
- The tipping/unloading of incoming materials/waste,
- The movement/sorting of onsite product; and
- Loading of HGVs prior to egress.

5.1.2 Typically crushing activities and screening of soil will not be carried out every day, this will be seasonal and usually April to October only. This will typically be 1-2 days per week and be limited to 4 hours per day, undertaken between 09:00-16:00.

5.1.3 Whilst there are no immediate plans to introduce a crusher, as the permit will allow for this, the activity has been included within the modelling.

### **5.2 Background Levels**

5.2.1 With regards to background levels, BS4142:2014 states that *“the objective is not simply to ascertain a lowest measured background sound level, but to quantify what is typical during particular time periods”* and also *“In practice there is no “single” background sound level as this is a fluctuating parameter. However, the level for the assessment should be representative of the period being assessed”*.

5.2.2 With this in mind, the assessment will utilise the range of levels from Tables 4.3-4.4.

### **5.3 BS4142: Assessment**

5.3.1 The CadnaA noise models were constructed using OS mapping Opendata and Google Earth satellite imagery, whilst topographical data was downloaded from DEFRA in the form of a digital terrain model.

5.3.2 The following assumptions/parameters are made within the models:

- The intervening land between the site boundary and residential properties was modelled with  $G = 1.0$  as it was considered that the land is predominantly acoustically absorbent. This is with the exception of the Purdeys Industrial Area, where this was revised to 0.0 to account for the primarily concrete and tarmac surfacing.
- Buildings were set as acoustically reflective, with a reflection loss of 1 dB.
- Noise levels were determined at residential properties representing the nearest residential facades using the building evaluation tool.
- In addition, the predicted grid noise levels were also calculated as free-field, A-weighted, sound pressure levels. The noise contours generated within the model are also at a height of 2.0 m, assumed to be the worst-case scenario for amenity areas.
- Surrounding residential properties were modelled at a height of between 4.5m for the majority of residential dwellings whilst surrounding commercial/agricultural buildings are based on onsite observations.
- Barrier heights and waste storage bays have also been modelled based on onsite observations. These have been modelled as being hard and reflective (i.e. concrete) and are between 2.1-3.5m in height.

5.3.3 Additional screening and many intervening structures associated with the surrounding industrial land uses have not been included within the model due to their construction and potentially transient nature. These have been excluded in order to ensure a robust assessment.

5.3.4 Table 5.1, overleaf, includes the measured noise levels for the anticipated activities, which have either been measured by Oaktree Environmental or provided by the manufacturer. It should be noted that octave bands will be utilised within the model. The table also includes relevant data from the CadnaA model (geometry, “on-times” etc.).

**Table 5.1 – Measured levels of activities**

<b>Activity</b>	<b>Noise Level (LAeq)</b>	<b>Source/comments</b>
Loading and operation of the soil screener	90.3 at 2m	Measurement taken by Oaktree Environmental of a Terex 883+ at a similar site.  Modelled as a point source 2m high.  Noise source assumed to operate for up to 4 hours based on conversations with site management.
Loading and operation of the crusher	92.1 at 2.5m	Measurement taken by Oaktree Environmental of a McCloskey crusher at a similar site.  Modelled as a point source 2m high.  Noise source assumed to operate for up to 4 hours based on conversations with site management.
Tipping of material	72.6 at 8m	Oaktree measurement at a similar site.  Modelled as a point source 0.5m high.  Noise source assumed to be active for up to 20 minutes per day.
Loading of HGV with material	76.4 at 3m	Oaktree measurement at a similar site.  Modelled as a point source 2.0m high.  Noise source assumed to be active for up to 60 minutes per day, based on an average of two vehicles a day taking approximately 30 minutes to load.
Loading shovel moving/sorting material	77.4 at 3m	Oaktree measurement at a similar site.  Modelled as a point source 1.5m high.  Noise source assumed to be active for 300 minutes, equating to 50% of the hours of operation.

5.3.5 Tables 5.4-6 details the predicted noise levels (in dB A) associated with the application site at the relevant receptors. These are based on the results of the modelling provided overleaf in Figures 5.2-5.4.

Figure 5.2 – Calculated noise levels (LAeq) associated with the typical operation of the site (excluding crushing and screening)

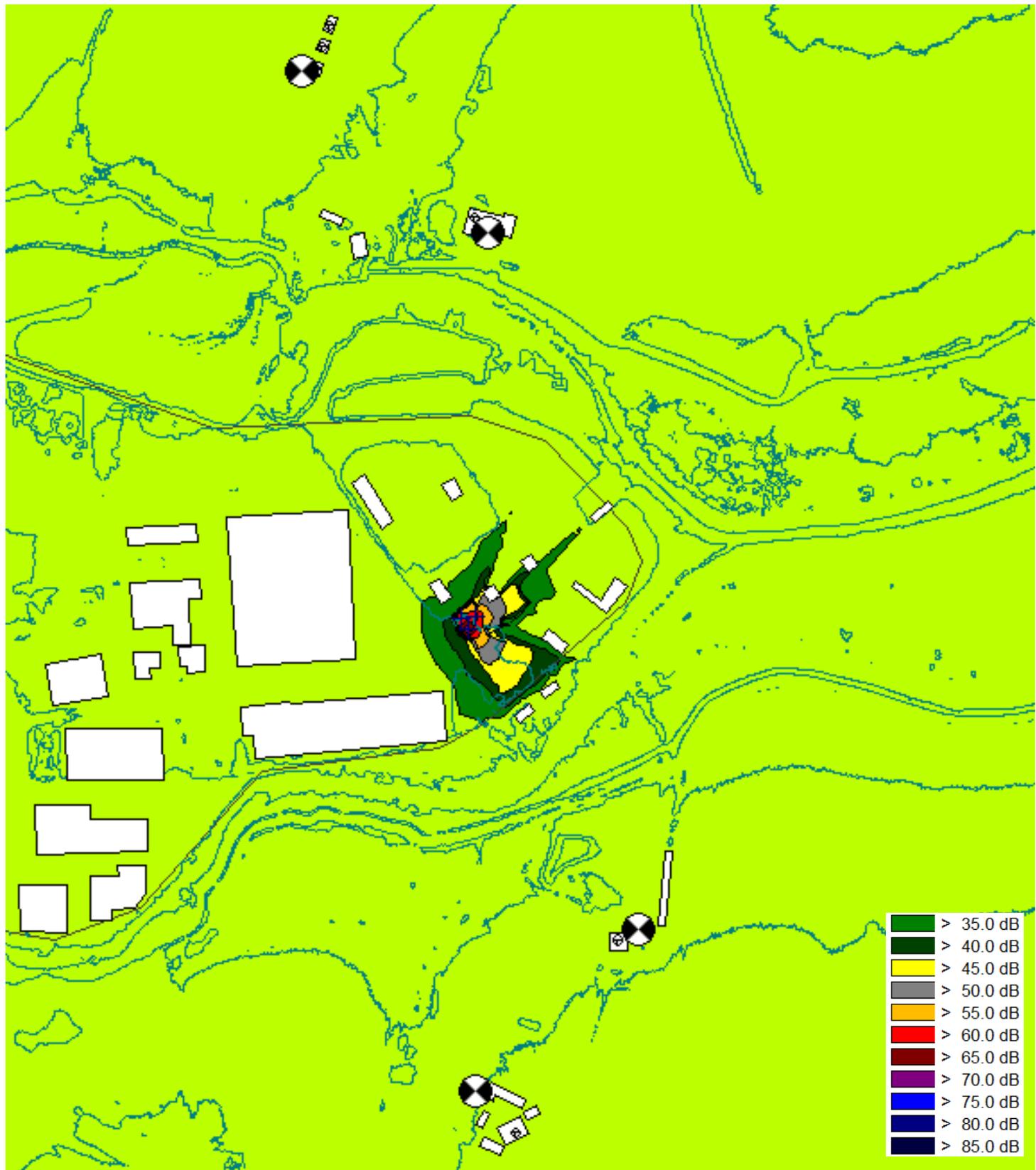


Figure 5.3 – Calculated noise levels (LAeq) associated with the site, including soil screening

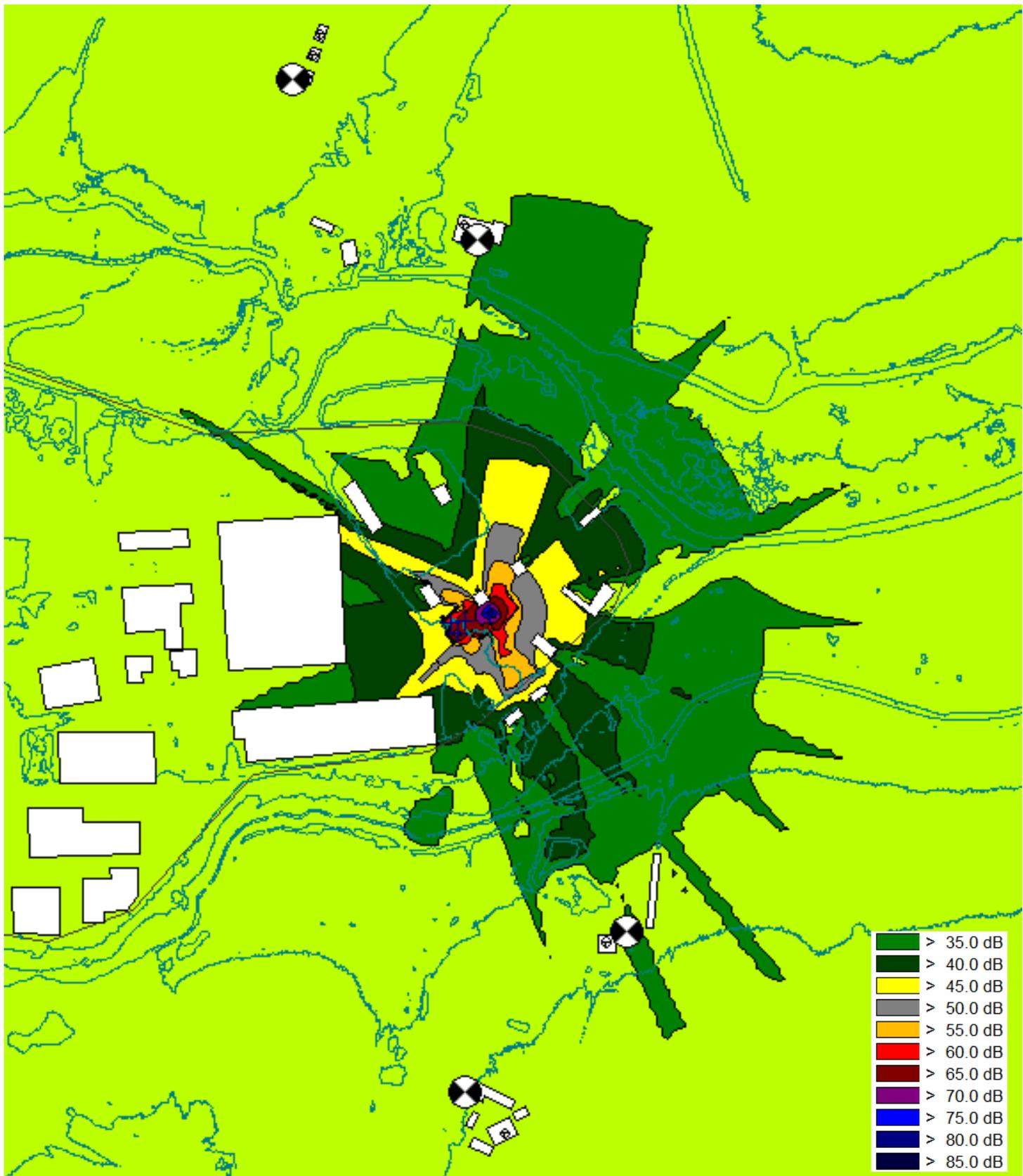
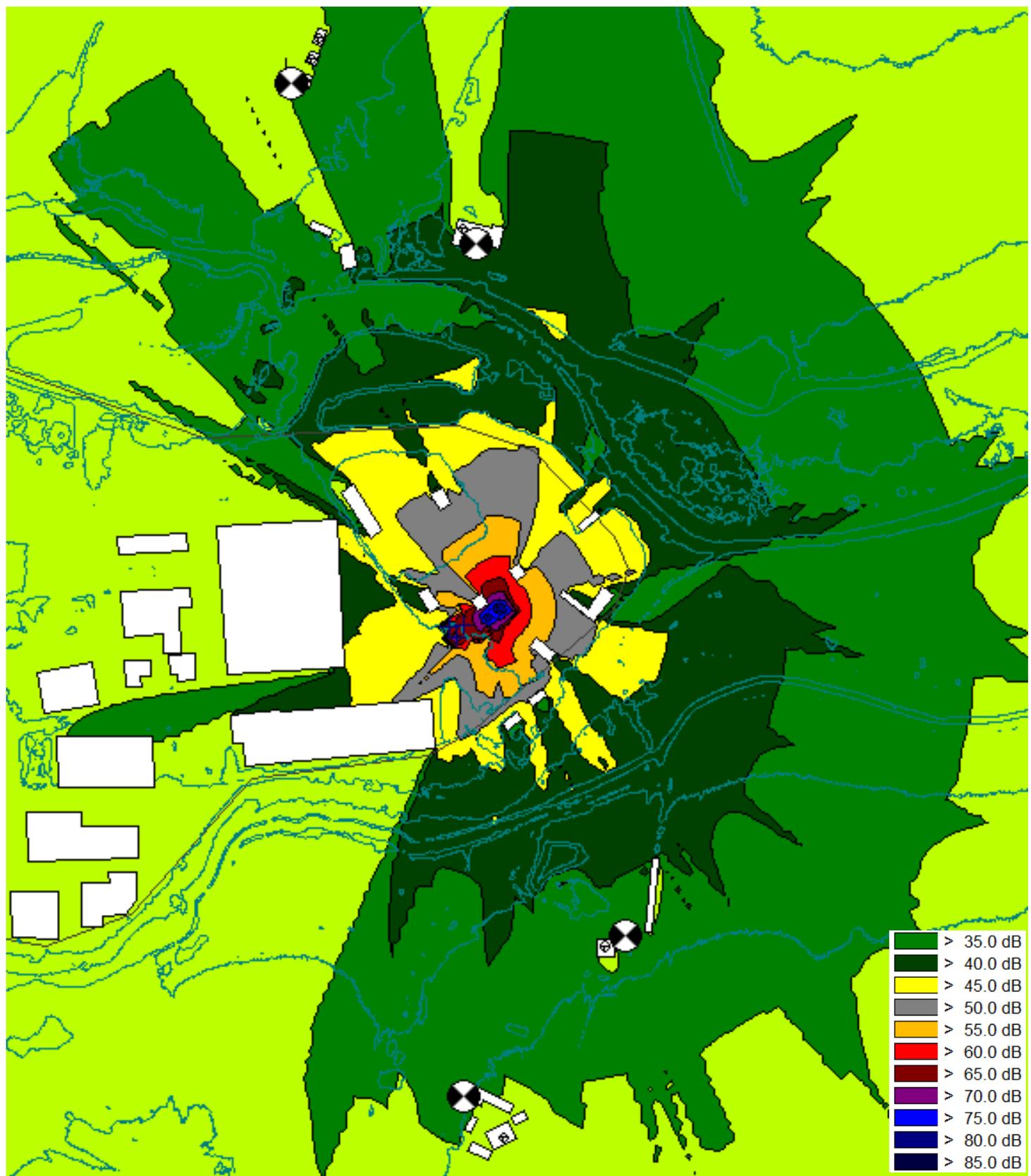


Figure 5.4 – Calculated noise levels (LAeq) associated with the site, including soil screening and crushing activities



5.3.6 With regards to impulsive and tonal penalties as per BS4142:2014, some occasional bangs/crashes are associated with the operation of the sites loader and excavator (scraping on the floor, reversing alarms, falling material etc.) are likely to be audible. However, considering the existing noise climate and setting of the site, as well as the intervening screening and distance, the impact of such events is likely to be minor and therefore a 3dB penalty has been applied.

**Table 5.5 – Assessment of typical daytime noise sources associated with the site as per BS4142:2014**

	<b>Calculated noise level at Broomhills assisted living residence</b>	<b>Calculated noise level at residential dwellings off Mill Lane</b>	<b>Calculated noise level at the Farmhouse, 295m south</b>	<b>Calculated noise level at residential dwellings off Shopland Road, 395m south</b>	
Calculated noise level as per figure 5.2	23	18	23	18	As per Figure 5.2.
Addition of relevant penalties as per BS4142:2014	+3 = 26	+3 = 21	+3 = 26	+3 = 21	As per Section 5.3.6
Comparison to weekday background levels	26 – 36.9/37.5 = 10.9 to 11.5dB (A) below	21 – 36.9/37.5 = 15.9 to 16.5 dB (A) below	26 – 42.3/43.1 = 16.3 to 17.1dB (A) below	21 – 42.3/43.1 = 21.3 to 22.1dB (A) below	Low impact as per BS4142:2014

**Table 5.6 – Assessment of typical daytime noise sources associated with the site including screening as per BS4142:2014**

	<b>Calculated noise level at Broomhills assisted living residence</b>	<b>Calculated noise level at residential dwellings off Mill Lane</b>	<b>Calculated noise level at the Farmhouse, 295m south</b>	<b>Calculated noise level at residential dwellings off Shopland Road, 395m south</b>	
Calculated noise level as per figure 5.2	37	26	33	24	As per Figure 5.3.
Addition of relevant penalties as per BS4142:2014	+3 = 40	+3 = 29	+3 = 36	+3 = 27	As per Section 5.3.6



Comparison to weekday background levels	40 – 36.9/37.5 = 2.5 to 3.1dB (A) below	29 – 36.9/37.5 = 7.9 to 8.5 dB (A) below	36 – 42.3/43.1 = 6.3 to 7.1dB (A) below	27 – 42.3/43.1 = 15.3 to 16.1dB (A) below	Low impact as per BS4142:2014
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**Table 5.7 – Assessment of typical daytime noise sources associated with the site, including screening and crushing as per BS4142:2014**

	<b>Calculated noise level at Broomhills assisted living residence</b>	<b>Calculated noise level at residential dwellings off Mill Lane</b>	<b>Calculated noise level at the Farmhouse, 295m south</b>	<b>Calculated noise level at residential dwellings off Shopland Road, 395m south</b>	
Calculated noise level as per figure 5.2	44	37	39	33	As per Figure 5.3.
Addition of relevant penalties as per BS4142:2014	+3 = 47	+3 = 40	+3 = 42	+3 = 36	As per Section 5.3.6
Comparison to weekday background levels	47 – 36.9/37.5 = 9.5 to 10.1dB (A) above	40 – 36.9/37.5 = 2.5 to 3.1dB (A) above	42 – 42.3/43.1 = 0.3 to 1.1dB (A) below	36 – 42.3/43.1 = 6.3 to 7.1dB (A) below	See discussion below

5.3.7 As per Table 5.3, the rating level associated with the operation of the site are generally below that at which an adverse impact is considered possible (i.e. +5dB above background) and therefore the associated impact is considered to be low. The exception to this would be the receptor referenced Broomhills assisted living residence at times during crushing is to take place.

5.3.8 Considering the contextual factors such as the site setting, sensitivity, nature of the existing noise climate, hours of operation (which will be controlled to 4 hours between 09:00-16:00), lack of weekend operations and seasonal nature of the activity as well as the fact that the model likely overestimates noise levels at this receptor, the overall impact is considered to be acceptable.

## 5.4 Control of Uncertainty

5.4.1 Uncertainty in this assessment was controlled via the following precautions/procedures:

- Both the sound level meter and calibrator have a traceable laboratory calibration and the meter was field-calibrated both before and after the measurements.
- The measurement locations are considered representative of the existing noise climate outside the nearest residential dwellings to the proposed development.
- Worst-case assumptions have been made with regards to modelling factors such as; ground absorption and intervening screens/structures.
- Background monitoring was undertaken during favourable weather conditions (e.g. dry and under 5m/s wind speed).

## **6 Conclusion**

### **6.1 Summary & Recommendations**

- 6.1.1 Oaktree Environmental Limited have undertaken a Noise Impact Assessment for the operation of a waste transfer station at Sutton Wharf, Rochehall Way, Purdeys Industrial Estate, Rochford, SS4 1JU.
- 6.1.2 The site has been assessed with regards to BS4142:2014 and it is considered that the impacts associated with the proposed operation of the site are acceptable based on the comparison of the calculated rating level to the proposed background level.
- 6.1.3 In addition, noise emissions will be controlled and regulated via the sites Noise Management Plan.
- 6.1.4 Therefore, based on the above, noise levels associated with the proposed development are acceptable and it should be considered that no further mitigations or assessment is required at this time.

# **APPENDIX I**

# **DRAWINGS**

**NOTES**

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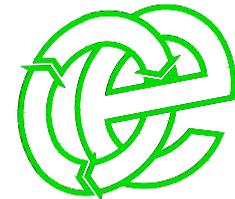
**REVISION HISTORY**

Rev:	Date:	Init:	Description:
-	17.02.22	IA	Initial drawing
A	27.04.22	IA	Layout changes

**KEY:**

-  Permit boundary
-  Denotes perimeter wall comprising 7ft high concrete wall (14ft high micro-dust netting installed above).

**Oaktree Environmental Ltd**  
Waste, Planning and Environmental Consultants



**DRAWING TITLE**  
SITE LAYOUT PLAN

**CLIENT**  
Allsort Grab Services Ltd

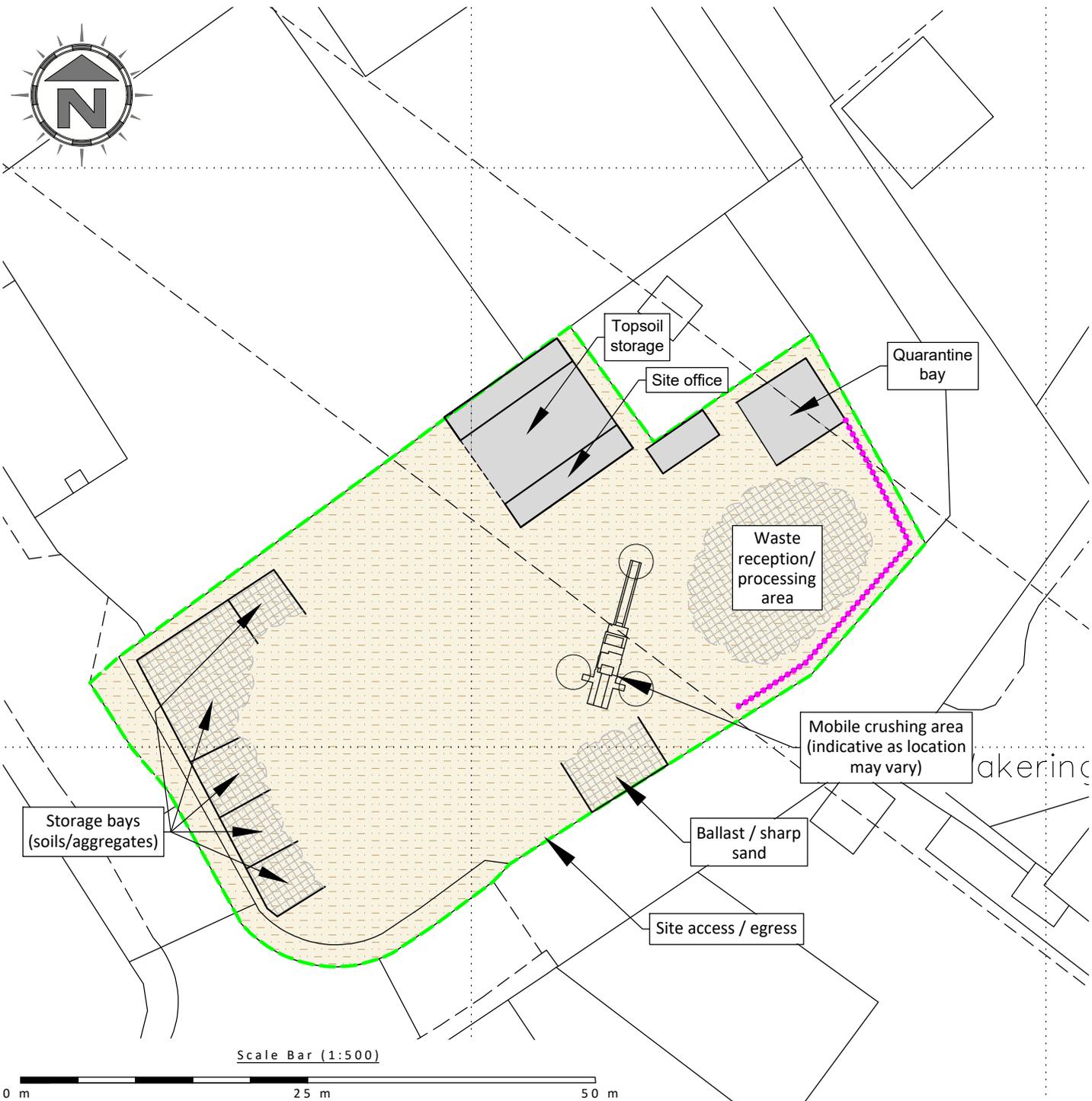
**PROJECT/SITE**  
Sutton Wharf, Rochehall Way, Purdeys Industrial Estate, Rochford, SS4 1JU

<b>SCALE @ A4</b> 1:500	<b>CLIENT NO</b> 3117	<b>JOB NO</b> 001
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<b>DRAWING NUMBER</b> 3117-001-03	<b>REV</b> A	<b>STATUS</b> Issued
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<b>DRAWN BY</b> IA	<b>CHECKED</b> IA	<b>DATE</b> 27.04.22
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Lime House, Road Two, Winsford, Cheshire, CW7 3QZ  
t: 01606 558833 | e: sales@oaktree-environmental.co.uk

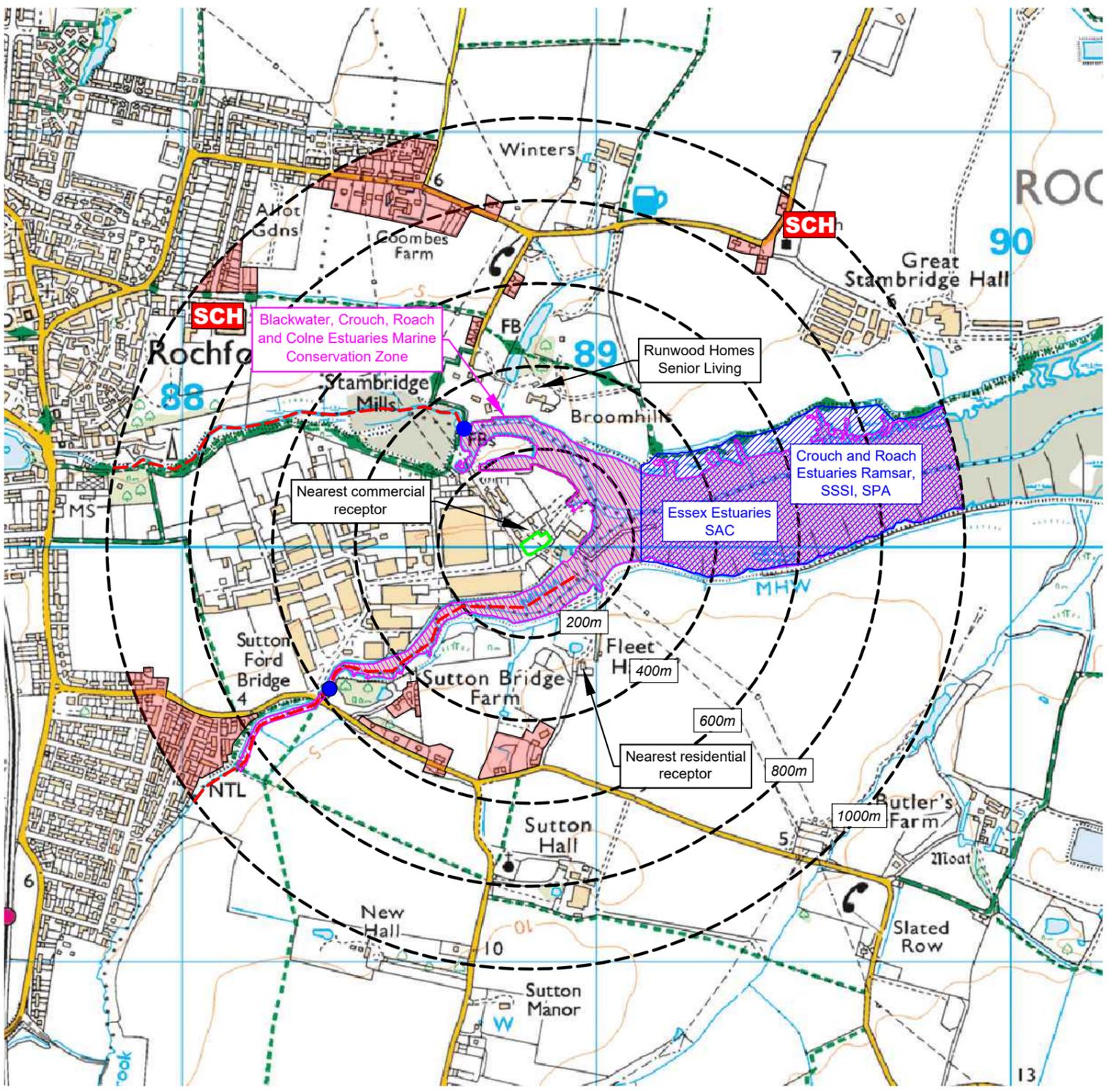
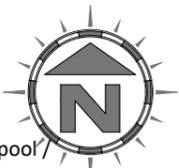


Scale Bar (1:500)

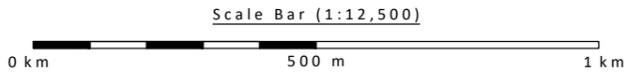


**KEY:**

- Permit boundary
- Main River
- Surface water body (river / stream / pond / pool / lake)
- Workplaces (includes agriculture industry, commerce and retail)
- Residential blocks
- Class A roads
- Class B roads
- Class C roads
- SCH School
- Woodland areas
- Protected sites (Ramsar, SSSI, SPA, SAC)
- Marine conservation zone
- - - Migratory fish routes - fish/eel (open) **If applicable** - information taken from 'Essex Fish Migration Roadmap' & 'Greater Thames Estuary Fish Migration Roadmap'
- - - Migratory fish routes - fish/eel (closed) **If applicable** - information taken from 'Essex Fish Migration Roadmap' & 'Greater Thames Estuary Fish Migration Roadmap'
- Barriers



Compass Wind Rose for Southend (EGMC) Period 1988-2022  
- source: Iowa State University



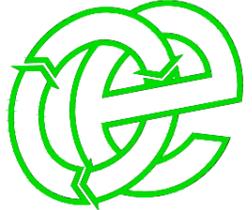
- NOTES**
1. Boundaries are shown indicatively.
  2. Wind rose data shows the prevailing wind direction to be Southerly.

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**REVISION HISTORY**

Rev:	Date:	Init:	Description:
-	17.02.22	IA	Initial drawing
A	06.03.23	IA	EA comments

**Oaktree Environmental Ltd**  
Waste, Planning and Environmental Consultants



**DRAWING TITLE**  
RECEPTOR PLAN

**CLIENT**  
Allsort Grab Services Ltd

**PROJECT/SITE**  
Sutton Wharf, Rochehall Way, Purdeys Industrial Estate, Rochford, SS4 1JU

SCALE @ A3	CLIENT NO	JOB NO
1:12,500	3117	001

DRAWING NUMBER	REV	STATUS
3117-001-04	A	Issued

DRAWN BY	CHECKED	DATE
IA	--	06.03.23

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