

# CRESTWOOD ENVIRONMENTAL LTD

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# Noise Management Plan

Report Reference: CE-WG2417-RP-002\_FINAL

**Report Date: 5 October 2023** 

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#### Crestwood Report Reference: CE-WG2417-RP-002\_FINAL:

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This report has been prepared in good faith, with all reasonable skill, care and diligence, based on information provided or known available at the time of its preparation and within the scope of work agreement with the client.

We disclaim any responsibility to the client and others in respect of any matters outside the scope of the above.

The report is provided for the sole use of the named client and is confidential to them and their professional advisors.

No responsibility is accepted to others.

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# 0 Document Control

#### 0.1 Site Details

0.1.1 Crestwood Environmental Ltd, was commissioned by SED Services Limited ('the Client') to prepare a Noise Management Plan to accompany the Noise Impact Assessment in support of the permit variation application for the Inert Recycling Site at:

#### **Bryn Hall Recycling Site**

Bryn Hall Fam Bryn Gates Lane Bamfurlong WN2 5JY

0.1.2 The site operates under an Environmental Permit. The permit number is understood to be: EPR/WE1015AB/V002.

# 0.2 Noise Management Plan Details

- 0.2.1 This plan should be read by:
  - All site staff and management
  - Environment Agency Officers
  - Contractors working on the Site
- 0.2.2 Individuals shall be made aware of the contents of this plan through their initial site inductions and then regularly reminders provided through periodic (e.g. bi-annually) briefings. All personnel shall be made aware when significant revisions to the plan are made to the plan.
- 0.2.3 An electronic copy of the current version of the plan shall be kept on the Client's electronic filing system and accessible by all staff. The latest version shall be printed in hard copy and kept with the Health and Safety file in the Site Office.

#### 0.3 Document Control

0.3.1 This document was prepared for and on behalf of the Client by Crestwood Environmental Limited. The revision history is presented in Table 1 below. The Client's document owner is understood to be Debbie Baldwin.

#### Table 1 Revision History

Revision Number	Revision Authorised by	Date submitted to the Environment Agency	Revision Owner
Initial Issue	Debbie Baldwin	09 October 2023	Debbie Baldwin

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# 1 Introduction

### 1.1 Site Description

1.1.1 Crestwood Environmental Ltd ('Crestwood'), was commissioned by SED Services Limited ('the Client') to prepare a Noise Management Plan ('NMP') on their behalf in support of the permit variation application for the Inert Recycling Site ('the Site') at:

#### **Bryn Hall Recycling Site**

Bryn Hall Fam Bryn Gates Lane Bamfurlong WN2 5JY

- 1.1.2 The Bryn Hall Recycling Site is centred at Ordnance Survey grid reference SD 5922 0146 and is located adjacent to the SED Services Limited Open Windrow Composting (OWS) installation in open countryside to the west of Bryn Gates and Bamfurlong settlements and is accessed via Bryn Gates Lane from A58 Bolton Road.
- 1.1.3 The Site is surrounded by open farmland and is in a slightly elevated position to the south of the track. The site lies approximately 250 m to the West of the Police Station where Bryn Gates Lane adjoins the A58 Bolton Road.
- 1.1.4 The site is understood to operate with restricted hours, namely 07:00 to 18:00 Monday to Friday and 08:00 to 13:00 on a Saturday with vehicle movements into and out of the site restricted to these times. It is not proposed to reduce these hours any further.
- 1.1.5 The main noise sources on site are mobile items of plant which may be operating in any area of the site and are understood to consist of:
  - 1 No. Crusher
  - 1 No. Trommel/Screener
  - 1 No. Loading Shovel
  - 1 No. Excavator
- 1.1.6 The Client has advised that they expect on average 2.5 vehicle movements per hour during the operating times to the recycling site.

# 1.2 Maintenance and review of the Noise Management Plan

1.2.1 The maintenance and review strategy for this NMP is provided below.

Who is responsible for the NMP and ensuring people are trained?	Debbie Baldwin is the person on site responsible for the implementation of the NMP and ensuring people are trained.
	Significant maintenance and review of the NMP can make use of a suitably qualified acoustician to inform on any changes in guidance or noise policy.
Where is this plan stored	A copy of the current version of the plan shall be stored on the Client's electronic filing system and accessible by all staff.
	The latest version shall be printed in hard copy and kept with the Health and Safety file in the Site Office.
When is this plan reviewed	The plan shall be reviewed annually or when there is a change in operation (e.g. purchase or replacement of a piece of plant or equipment) or if a noise complaint is received.

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What training have the staff on site received in order to implement the NMP	Individuals shall be made aware of the contents of this plan through their initial site inductions and then regularly reminders provided through periodic (e.g. biannually) briefings.  All personnel shall be made aware when significant revisions to the plan are made to the plan.
How often are they trained and who delivers the training	The training shall be carried out by site management and shall be carried out at initial site inductions, periodic reminders (e.g. bi-annually) and when there is a significant revision to the plan.

#### 1.3 Relevant Sector Guidance on which this NMP is based.

- 1.3.1 When preparing this plan, the following standards and guidance have been referenced:
  - British Standard BS 4142:2014+A1:2019 'Methods for rating and assessing industrial and commercial sound' [1].
  - Association of Noise Consultants Technical Note on BS 4142:2014+A1:2019, Version 1.0, March 2020 [2].
  - Environment Agency Guidance 'Noise and vibration management: environmental permits', Updated January 2022 [3].
  - Environment Agency Guidance 'Method Implementation Document for BS 4142', Published March 2023 [4].
  - Noise emission data from British Standard BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites Part 1: Noise' [5].



# 2 Receptors

# 2.1 Receptor List

2.1.1 The noise sensitive receptors used in the Noise Impact Assessment have been identified as follows and presented in Table 2 below.

**Table 2 Noise Assessment Locations** 

Receptor Number	Grid Reference	Land Use	Direction from Site	Distance to Site Boundary
Rec_01	SD 5947 0127	Residential	South-East	325 m
Rec_02	SD 5946 0125	Residential	South-East	325 m
Rec_03	SD 5946 0124	Residential	South-East	320 m
Rec_04	SD 5945 0122	Residential	South-East	320 m
Rec_05	SD 5944 0120	Residential	South-East	315 m
Rec_06	SD 5943 0118	Residential	South-East	320 m
Rec_07	SD 5942 0114	Residential	South-East	325 m
Rec_08	SD 5943 0116	Residential	South-East	320 m
Rec_09	SD 5947 0130	Residential	South-East	320 m
Rec_10	SD 5947 0132	Residential	South-East	315 m
Rec_11	SD 5951 0131	Residential	South-East	350 m
Rec_12	SD 5882 0158	Residential	North-West	325 m
Rec_13	SD 5869 0166	Residential	North-West	475 m
Rec_14	SD 5954 0134	Residential	South-East	355 m
Rec_15	SD 5956 0135	Residential	South-East	365 m
Rec_16	SD 5958 0137	Residential	South-East	375 m

2.1.2 These locations are shown in Figure 1 in **Error! Reference source not found.**.



# 3 Noise Sources and Processes

#### 3.1 Noise Impact Assessment Conclusions

- 3.1.1 The Noise Impact Assessment shows that the noise emissions may cause an adverse impact and possible significant adverse impact at some receptors based on the descriptors given in the Standard.
- 3.1.2 The possible significant adverse impacts are primarily due to vehicle movements along the access road. Whereas the adverse impacts are mainly derived from the +3dB 'other' correction required under the EA Guidance to the noise from the site although noise from the site was not audible at the receptor positions.
- 3.1.3 However, the predicted specific sound levels at the receptors are typically less than the prevailing ambient noise level measured in terms of L<sub>Aeq,15mins</sub> and, equivalent to or less than the prevailing background sound level, therefore, this is considered to be an indication of a low adverse effect.

#### 3.2 Noise Sources

3.2.1 The Source Sound Power Levels have been extracted from the library data found within British Standard BS 5228-1:2009+A1:2014 and corrected for distance (10 m) and hemispherical radiation. The sound power levels, standard reference, and source type used are presented in Table 3.

Table 3 Source Sound Power Levels Used

Description	Reference		Sound Power Level (L <sub>w</sub> )					Source		
		63Hz	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz	Type
Trommel	C.10.20	99	97	96	99	103	95	91	85	Area <sup>(1)</sup>
Crusher	C.1.15	114	112	112	109	106	103	99	94	Area <sup>(1)</sup>
Screener	C.10.21	101	103	101	101	98	96	94	87	Area <sup>(1)</sup>
Excavator	C.10.1	110	115	110	105	100	98	94	87	Area <sup>(1)</sup>
Loader	C.10.17	105	111	119	103	103	100	93	87	Area <sup>(1)</sup>
Haul Road	C.9.16	114	117	116	116	114	111	104	98	Line <sup>(2)</sup>

#### Notes:

- (1) Area sources configured as moving point sources across the area of the site. Number of proposed items of plant included within the model.
- (2) Line sources configured as moving point sources along the length of the road. The total number of vehicles per hour included within the model.

#### 3.3 Overview of noise processes and emissions

- 3.3.1 The current permit allows the Client to store waste at Bryn Hall Recycling Site and treat it to produce soil, soil substrates and aggregate. The permitted wastes do not include hazardous wastes and it is proposed that the total quantity of waste that can be stored and subsequently treated at the site under the permit is increased from no more than 75,000 tonnes to 250,000 tonnes per year.
- 3.3.2 The recovery operations do not include the burning of any wastes, either in the open, inside buildings or in any form of incinerator.
- 3.3.3 The Site processes suitable incoming waste materials for, either:
  - Production of products, in line with the relevant Aggregate Quality Protocol (AQP), or,
  - Despatched from site as a waste for use by third parties under suitable exception or waste management operation,
  - A material conforming to RPS190 'Use of manufactured topsoil'.
- 3.3.4 The main noise sources on site are mobile items of plant which may be operating in any area of the site and are understood to consist of:



- 1 No. Crusher
- 1 No. Trommel/Screener
- 1 No. Loading Shovel
- 1 No. Excavator
- 3.3.5 The Client has advised that they expect 2.5 vehicle movements per hour during the operating times to the recycling site.



# 4 Control Measures and Process Monitoring

# **4.1** Appropriate Measures

4.1.1 Appropriate control measures for each item of plant have been summarised in Table 4 below.

Table 4 Actions and processes which will be in place to achieve appropriate measures

Activity which produces noise	Operational hours/days	Control Measures	Contribution to Overall Impact	Action taken if outside optimum process parameters
Crusher processing material	07:00 to 18:00 Monday to Friday 08:00 to 13:00 Saturday	The equipment will be operated within the bunded area surrounded on three sides by 4.5 m high earth bund.	Medium	Cease operation and investigate reasons for elevated sound levels.
		Daily visual inspections, yearly full mechanical inspections, trained staff using equipment. Regular toolbox sessions on standard procedures. Regular site walks by site managers checking on procedures.		
Trommel sorting material	07:00 to 18:00 Monday to Friday 08:00hrs to 13:00 Saturday	The equipment will be operated within the bunded area surrounded on three sides by 4.5 m high earth bund.	Medium	Cease operation and investigate reasons for elevated sound levels.
		Daily visual inspections, yearly full mechanical inspections, trained staff using equipment. Regular toolbox sessions on standard procedures. Regular site walks by site managers checking on procedures.		
Screener sorting material	07:00 to 18:00 Monday to Friday 08:00 to 13:00 Saturday	The equipment will be operated within the bunded area surrounded on three sides by 4.5 m high earth bund.	Medium	Cease operation and investigate reasons for elevated sound levels.
		Daily visual inspections, yearly full mechanical inspections, trained staff using equipment. Regular toolbox sessions on standard procedures. Regular site walks by site managers checking on procedures.		



Activity which produces noise	Operational hours/days	Control Measures	Contribution to Overall Impact	Action taken if outside optimum process parameters
Excavator moving material	07:00 to 18:00 Monday to Friday  08:00 to 13:00 Saturday	The equipment will be operated within the bunded area surrounded on three sides by 4.5 m high earth bund.  White noise reversing alarms to be used on excavator instead of traditional beep.  Daily visual inspections, yearly full mechanical inspections, trained staff using equipment. Regular toolbox sessions on standard procedures. Regular site walks by site managers checking on procedures.	Medium	Cease operation and investigate reasons for elevated sound levels.
Loader moving material	07:00 to 18:00 Monday to Friday 08:00hrs to 13:00 Saturday	The equipment will be operated within the bunded area surrounded on three sides by 4.5 m high earth bund.  White noise reversing alarms to be used on loader instead of traditional beep.  Daily visual inspections, yearly full mechanical inspections, trained staff using equipment.  Regular toolbox sessions on standard procedures. Regular site walks by site managers checking on procedures.	Medium	Cease operation and investigate reasons for elevated sound levels.
Haul Road delivering	07:00 to 18:00 Monday to Friday 08:00 to 13:00 Saturday	Haul road from ownership boundary to be kept in good condition with all potholes filled. Lorries to wait at site entrance instead on layby next to site entrance as opposed to next to residential properties. White noise reversing alarms to be used on vehicles instead of traditional beep.	High	Cease operation and investigate reasons for elevated sound levels.



# 4.2 On-site monitoring procedures

4.2.1 The on-site monitoring procedures are presented in Table 5 below.

Table 5 Description of onsite process which will ensure impacts do not increase on site

Description of procedure	Procedure	When will this be carried out?	Corrective Action
Replacing old/faulty equipment	Procurement of new equipment	When equipment requires replacing	Replacement equipment that has sound levels which equivalent to or lower than those of existing equipment.
Checking noise barriers	Visual inspections of barriers and earth bunds to ensure no holes or gaps.	Monthly	Repair barriers if holes and gaps are found
Checking access road	Visual inspections of haul road to ownership boundary to make sure that road is in good condition	Monthly	Repair defects to maintain smooth running of access road to the ownership boundary

# 4.3 Monitoring off-site sound levels

4.3.1 A description of the sound monitoring procedures may be found in Table 6 below.

**Table 6 Description of the Sound Monitoring Procedures** 

Measurement Location	Frequency of Measurement	Minimum Measurement Duration	Measurement period	Operating conditions on site	Expected Specific Sound Level
Position 1	Every 3 months	1 hour	Within operational hours	As per normal operation	Below 60dB L <sub>Aeq,1hour</sub>
Position 2	Every 3 months	1 hour	Within operational hours	As per normal operation	Below 47dB L <sub>Aeq,1hour</sub>

- 4.3.2 The monitoring locations are shown in Figure 2 in Appendix 1.
- 4.3.3 The monitoring will be carried out by a suitably qualified member of the site management using measurement equipment conforming to Class 2 under BS EN IEC 61672-1:2013. An on-site sensitivity check should be carried out immediately before and after the measurements.
- 4.3.4 Should the measurement results be more than the levels above, investigations shall be carried out to determine the likely cause of the increased levels and the actions outlined in Table 4 carried out. The measurements are then to be repeated.
- 4.3.5 If the subsequent measurement results exceed the expected levels, then inspections shall be made of all equipment to make sure that it is being operated correctly and the measurements repeated.

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# 5 Complaints Reporting

- 5.1.1 When a complaint is received due to noise the following process shall be followed:
  - The site manager or nominated representative records details of the complaint, including the location of the complainant, nature of the noise including times when the noise was heard.
  - The complaint shall be investigated including a visit from the site management or their nominated representative and, if possible, noise measurements taken and compared with the expected levels presented in the Noise Impact Assessment.
  - If the complaint is considered justified and warranting further investigation the Regulator shall be notified and remedial action taken to reduce noise levels.
  - Following completion of the remedial works, noise levels shall be monitored and compared with
    the expected levels in the Noise Impact Assessment. Should the measured levels be less than the
    expected levels in the Noise Impact Assessment, the complaint shall be considered resolved and
    the Regulator and Complainant informed accordingly.
  - Should the measured levels be more than the expected levels in the Noise Impact Assessment following remedial works, further investigations shall be carried out to further reduce noise levels from the site. At all times during the process, the Regulator and Complainant will be kept informed.



#### **REFERENCES:**

- British Standards Institution, "BS 4142:2014+A1:2019 Methods for rating and assessing industrial and commercial sound," British Standards Institution, 2019.
- [2] Associaition of Noise Consultants, "Technical Note: BS 4142:2014+A1:2019," 2020.
- [3] Environment Agency, "Noise and vibration management: environmental permits," 31 January 2022. [Online]. Available: https://www.gov.uk/government/publications/noise-and-vibration-management-environmental-permits/noise-and-vibration-management-environmental-permits#NIA-report. [Accessed 01 September 2023].
- [4] Environment Agency, "Method implementation document (MID) for BS 4142," 27 March 2023.
   [Online]. Available: https://www.gov.uk/government/publications/method-implementation-document-mid-for-bs-4142. [Accessed 01 September 2023].
- British Standards Institution, "BS 5228-1:2009+A1:2014 Code of Practice for noise and vibration control on construction and open sites - Part 1: Noise," 2014.



#### GLOSSARY:

For the avoidance of confusion, the terms used in this report follow the definitions given below:

Fundamentally, 'sound' are vibrations of the air which are detectable by the ear. Noise is defined as a sound or sounds which is unwanted, considered unpleasant or loud. Sound or noise levels are commonly measured in terms of the sound pressure level in terms of decibels (dB). The sound pressure level is commonly given as 'A'-weighted to simulate the human ear's response to sounds at different frequencies. Examples of typical A-weighted sound pressure levels from typical noise sources are shown in the table below.

Sound Level (dBA)	Typical Noise Source
130	Threshold of pain
120	Large jet aircraft on take-off
110	Rock Band
100	Pneumatic Drill
90	Heavy lorry
80	Medium-sized lorry
70	Passenger car
60	Normal conversation
50	Suburban residential neighbourhood
40	Quiet living room
30	Quiet rural setting, within a bedroom at night
20	Speaking in a whisper
10	
0	

In this report, the terms sound and noise are used interchangeably.

Noise levels are usually expressed with an associated measurement parameter. Commonly used measurement parameters are presented below.

Parameter	Definition
dB	Decibel – A logarithmic scale applied to acoustic units such as sound pressure and sound power.
LPA	The instantaneous A-weighted sound pressure level measured in terms of dB
Lago	This is the 'A'-weighted sound pressure level exceeded for 90% of the measurement period over which the measurement is taken. It is commonly used to represent the "background noise level".
L <sub>Aeq</sub>	This is the equivalent 'A'-weighted sound pressure level of steady noise which, under the period under consideration, contains the same amount of (A-Weighted) sound energy as the time-varying noise over the same period. Also called the time-averaged sound level.
Lato	This is the 'A'-weighted sound pressure level exceeded for 10% of the measurement period over which the measurement is taken. It is the accepted noise metric for describing road traffic noise.
Lamax	This is the maximum root-mean-square (RMS) 'A'-weighted sound pressure level measured during the measurement period.

Other relevant acoustic parameters are defined below:

Parameter	Definition
Rw	The weighted Sound Reduction Index is the single figure value of laboratory measured sound reduction according to the procedures in British Standard BS EN ISO 717-1 and used for rating and comparing partitions and based on the measured sound reductions at different frequencies

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Parameter	Definition
D <sub>nT,w</sub>	The weighted standardised level difference is a single figure value of airborne sound insulation performance, derived according to the procedures in British Standard BS EN ISO 717-1 and used for rating and comparing partitions and based on the measured sound level difference at different frequencies and standardised to a reverberation time (normally 0.5 seconds).
D <sub>ne,w</sub>	The weighted normalised sound level difference is used to describe the sound insulation provided by small building elements and derived according to the procedures in British Standard BS EN ISO 717-1 and used for rating and comparing partitions and based on the measured sound level difference at different frequencies and normalised to an absorptive area (normally 10m²).
С	A spectral adaptation term used in connection with the measurement and assessment of airborne sound insulation and defined in British Standard BS EN ISO 717-1. This is considered equivalent to the A-weighted weighted normalised sound level difference ( $D_{\text{nT,A}}$ )
Ctr	A spectral adaptation term used in connection with the measurement and assessment of airborne sound insulation and defined in British Standard BS EN ISO 717-1. This is considered equivalent to the normalised sound level difference weighted for road traffic noise ( $D_{nT,tr}$ )
L' <sub>nT,w</sub>	The weighted standardized impact sound pressure level is a single-figure value of impact sound insulation performance, derived according to the procedures in British Standard BS EN ISO 717-2, used for comparing and rating floors and based on the values of measured impact sound pressure level at different frequencies and standardised to a reverberation time (normally 0.5 seconds).



# **APPENDICES:**

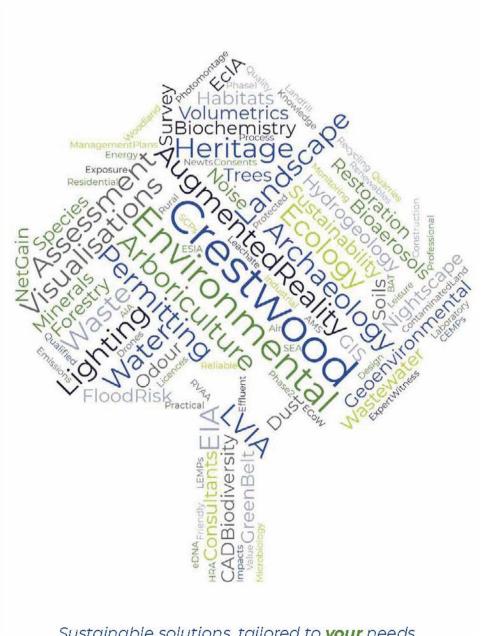
APPENDIX 1 REPORT FIGURES



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