

Prepared by: Environmental Advisor

Approved by: Environmental Manager

## 1 INTRODUCTION

This document provides the noise and vibration management plan prepared in accordance with Environment Agency (EA) Guidance<sup>1</sup> in support of an environmental permit EPR/AB3891FT.

Vibrating sources, such as motor vehicle engines or the movement of vehicles over road surface irregularities, can produce not only displacement of the air molecules which we perceive as noise, but also displacement within the material components of the source or materials in contact with the source. These energy waves can travel through the ground in a similar manner to air pressure waves through the atmosphere and, dependent on the amount of energy being transmitted, be perceived as vibration. Vibration can produce three effects at levels above the threshold of perception it may cause human annoyance; at extreme levels it may cause building damage (e.g. during construction activity) and it may be re-radiated as audible noise. Due to the isolation of the site within Swansea docks the potential vibration related issues are minimal.

This noise and vibration management plan outlines the methods by which Celsa will systematically assess and minimise the potential impacts of noise and vibration generated at the Celsa Scrap Yard site at Graigola Wharf, Swansea Dock. The noise and vibration management plan is a working document which has the specific aim of ensuring:

- noise and vibration is subject to routine review and assessment;
- noise and vibration is controlled at source through the application of good operational practices e.g. effective maintenance, physical controls and management practices; and
- all appropriate measures are taken to prevent or (where that is not reasonably practicable) to reduce noise and vibration emissions so that off-site impacts are reduced to an acceptable level.

The noise and vibration management plan address the impact of noise and the control measures employed to mitigate the risk. These are supported through monitoring procedures to identify both abnormal emissions and to review complaints (should they arise). Roles and responsibilities (including senior management responsibilities) are clearly defined within the noise and vibration management plan.

## 2 SOURCES OF NOISE AND VIBRATION

Sources of noise and vibration (mobile and fixed) have been identified by reviewing all on-site activities. The principal potential sources include both:

- private vehicles and HGVs vehicles approaching and leaving site;
- unloading of scrap metal at the site into storage areas (either pre-processed or

<sup>1</sup> Environment Agency (2004). Integrated Pollution Prevention and Control (IPPC), Horizontal Guidance for Noise Part 2 – Noise Assessment and Control, June 2004

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- unprocessed)
- shearing of unprocessed scrap metal using a mobile shear;
- screening of scrap metal using pre-conveyor magnetic separator;
- unloading of processed scrap from mobile shear into storage area;
- loading of vehicles with scrap metal; and
- general site activities such as vehicle refuelling etc.

None of the identified sources will emit continuous noise and/or vibration. The work activities are sporadic and are based on processing stockpiles of material.

The Site operating hours will be:

- Monday to Friday 06:00 – 18:00.
- Saturday 06:00 – 17:00.
- Sunday and Bank Holidays – 06:00 – 14:00.

Vehicle movements to and from Site will occur during the following hours:

- 5 x employee vehicles, 4 of which arrive at 6:30 – 07:00 and leave at 17:00 – 17:30.
- 6 x bulk tippers all transporting scrap metal to and from site arriving and departing between 10:00 – 13:00.

The principal equipment on-site (with the potential to generate noise and/or vibration) are outlined below:

- 1 x Atlas material handler - brand new equipment that meets all current environmental and safety standards. BS5228:2009 (Table C.4) identifies telescopic handler has an A-weighted sound pressure level ( $L_{Aeq, T}$  at 10 metres of 79 dB)<sup>2</sup>.
- 1 x Atlas material handler – one-year old machine (same as new model) that meets all current environmental and safety standards.
- 1 x Shear box driven by a Cummins Diesel Engine – No sound level data available from the supplier but the engines are Tier 3/Stage IIIA compliant i.e. they offer major reductions in noise and require minimal maintenance. BS5228:2009 does not list shearbox as an activity.
- 1 x scrap metal screener – A conveyor belt carries the incoming (unprocessed) material over a powerful magnetic head pulley to automatically remove steel and ferrous materials while aluminium products fall into a separate collection container.
- 6 x bulk tippers – BS5228:2009 (Table C.8) identifies tipper lorry has an A-weighted sound pressure level ( $L_{Aeq, T}$  at 10 metres of 79 dB).
- 5 x employee vehicles – Internal Port speed limits are enforced.

<sup>2</sup> BSI (2014). BS 5228-1:2009+A1:2014, Code of Practice for noise and vibration control on construction and open sites, Part 1: Noise, 2014

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### 3 NOISE AND VIBRATION RECEPTORS

The principal noise and vibration receptors as well as the prevailing wind direction are outlined in *Figure 1*.



**Figure 1** – Location of human receptors surrounding the Site (within 1-km) with overlay of predominant wind direction

Wind data for Swansea from <https://www.meteoblue.com/> / Google Earth Imaging with the permission of Google

There are no residential receptors at or adjacent to the site boundary. The nearest residential receptors are 460 metres north beyond other industrial activities located on the northern side of King’s Dock.

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## 4 NOISE AND VIBRATION CONTROL MEASURES

In-line with H3<sup>1</sup> the following control measures have been established and shall be maintained at the site:

- The technically competent manager (or designated responsible person) will have responsibility for ensuring that noise emissions from the site are minimised. Regular meetings will be held to discuss current and planned site operations that have the potential to generate noise emissions.
- All plant, equipment and vehicles will be regularly maintained (in-line with manufacturers recommendations) to ensure that no equipment will produce excessive noise. Defective equipment (e.g. bearings, silencers, acoustic enclosures) shall not be used on-site.
- Silencers will be fitted to all machinery (where possible) in-line with manufacturers recommendations. Where site equipment is fitted with noise abatement equipment is shall be used at all times.
- All noise generating equipment shall be switched-off when not in use.
- The site will only operate within the stated time periods.
- Traffic movements from waste collection vehicles will only take place during operational hours (i.e. 10:00 – 13:00 hours).
- A speed limit of 10mph will be in place at the site.
- Procedures for the loading, unloading of vehicles and the shearbox shall be employed to ensure waste is not dropped from an excessive height. All employees involved with materials handling shall be suitably trained.
- All employees will be responsible for reporting any noise problems immediately to the technically competent manager.
- White noise reversing alarms will be used on mobile plant in-line with our workplace transport safety requirements.
- Site staff will be made aware of surrounding residential receptors and are required to avoid all unnecessary noise. All employees will be trained to operate the equipment and plant to minimise excessive noise emissions.

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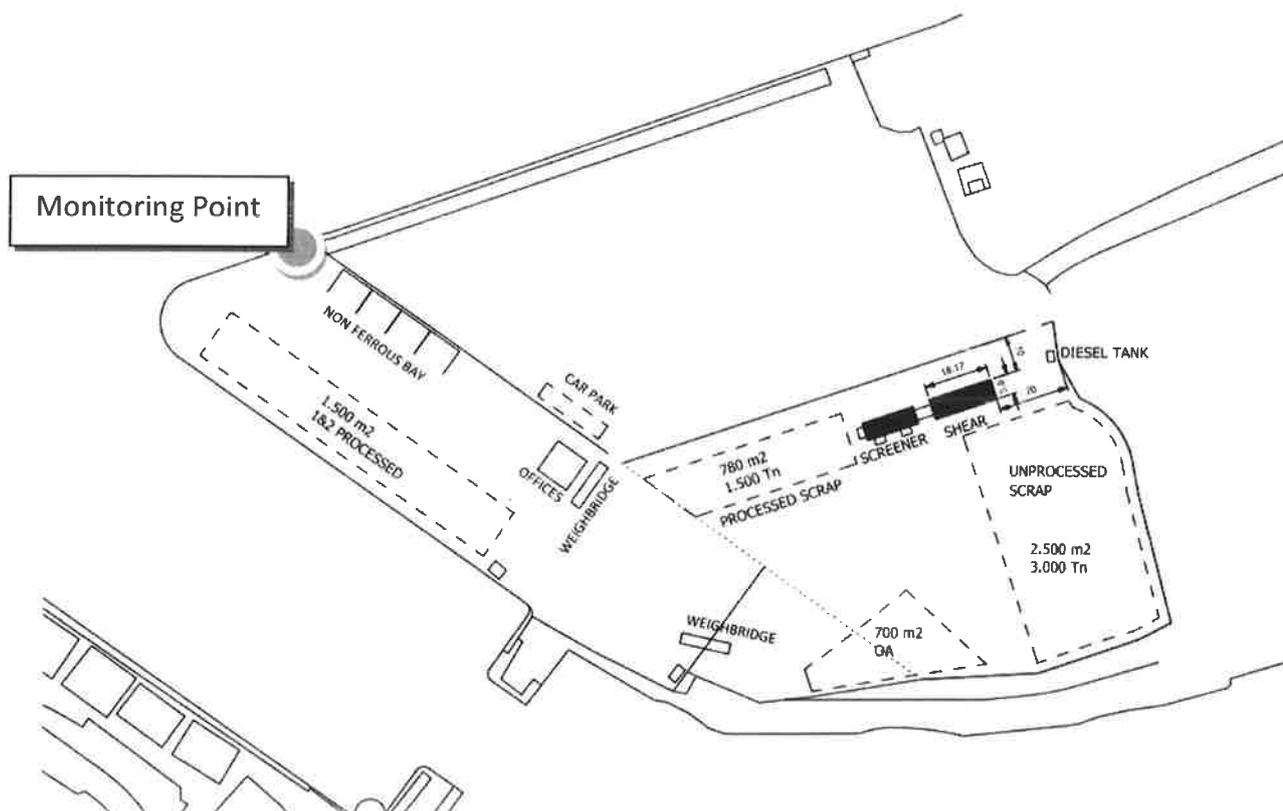
#### 4 MONITORING

To ensure that the noise and vibration control measures are effective, Celsa will ensure noise and vibration monitoring is in place. The following monitoring activities are regularly undertaken to ensure continuous improvement:

- site inspections by the site manager;
- site audits conducted by the company's management; and
- site audits and inspections by Natural Resources Wales.

All Site personnel will be responsible for reporting any noise problems immediately to the Site manager (or deputy).

The Site Manager will ensure that regular weekly inspections are made of the site and its perimeter to identify any sources of noise and/or vibration and to establish whether any noise and/or vibration is likely to impact upon receptors. The principal monitoring point is outlined in *Figure 2*.



**Figure 2 – Noise and vibration monitoring point**

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The information that shall be recorded within the site diary includes:

- Name of surveyor
- Date
- Time of survey (start/finish)
- Operations being undertaken
- Reason for survey (Routine, possible noise issue, complaint)
- Weather conditions and air temperature (°C)
- Wind direction and strength (e.g. light, steady, strong, gusting)
- Noise intensity
  - 1 No detectable noise
  - 2 Faint noises (barely detectable)
  - 3 Moderate noise (noise easily detectable)
  - 4 Loud noise (bearable, but offensive noise)
  - 5 Very loud noise
- Noise extent
  - 1 Local and not persistent (only detected during brief periods when wind drops)
  - 2 Not persistent as above, but detected away from site boundary
  - 3 Persistent but localised
  - 4 Persistent and pervasive up to 50m from site boundary
  - 5 Persistent and widespread (noise detected >50m from site boundary)
- Description of noise (hiss, hum, rumble, continuous, intermittent etc.)

## 5 EMERGENCY PLAN

This Section considers the potential for accidents (or incidents) which could result unacceptable short-term noise impacts e.g. elevated noise may occur due to the breakdown of the equipment or abatement equipment. If the situation is an emergency, then mitigation measures will be immediately implemented, and the technically competent manager will consider:

- limiting the hours of operation; or
- immediately suspending the site operations creating the unacceptable noise emissions.

These measures will be considered on a case by case basis.

If any noise and/or vibration complaints are received the Complaints Procedure as set out in EMS procedure CP/B033 (EHS Communication - Internal and External) would be followed and the incident investigated and if found to be real, appropriate mitigation measures would be adopted. The incident would be formally reported to Natural Resources Wales.

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## **6 REVIEW**

Noise control measures will be reviewed through internal audits. The audits will review:

- weekly records of inspection;
- spot checks on the higher risk sources of noise to check monitoring and maintenance procedures are being carried out in accordance with manufacturers recommendations; and
- checks to ensure that any corrective or preventive actions have been resolved in an efficient and timely manner.

External audits of the site operations (and associated management systems) will be carried out (by a third party) to achieve and maintain ISO14001 certification.

**THIS CONCLUDES THE NOISE AND VIBRATION MANAGEMENT PLAN**

