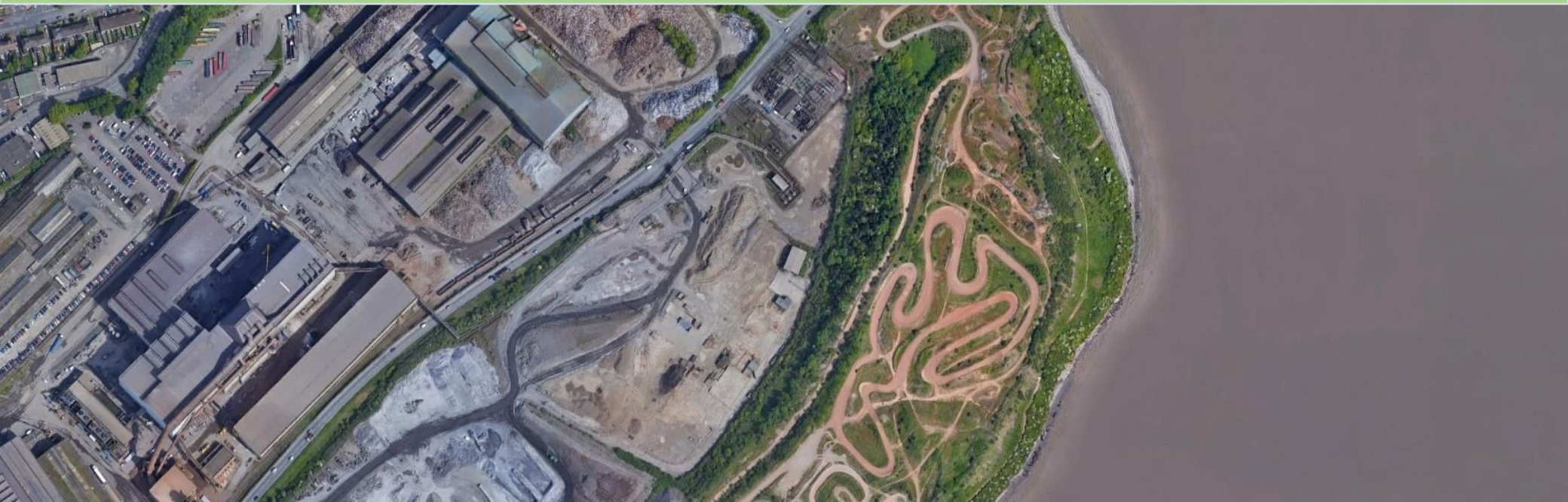
Environmental Permit (Variation)
Celsa Manufacturing (UK) Ltd, Tremorfa New Melt Shop.
Tremorfa Works, Seawall Road, Cardiff, CF24 5TH

Non-Technical Summary (NTS) (Permit No. EPR/TP3639BH)

018-1892 | July 2022 | Revision 00



Introduction

This document has been prepared by Celsa Manufacturing (UK) Ltd ("Celsa") and its environmental consultant Earth & Marine Environmental Consultants Ltd ("EAME") in support of a permit variation as required under Regulation 20 of the *Environmental Permitting (England and Wales) Regulations 2016* in relation to current activities and proposed activities to be undertaken at Tremorfa New Melt Shop. Tremorfa Works, Seawall Road, Cardiff, CF24 5TH (Permit No. EPR/TP3639BH).

This application is to vary an existing environmental permit in relation to operations and activities undertaken the site (*Figure 1*).

The document represents the Non-technical Summary report submitted as part of the variation package to Natural Resources Wales (NRW) (EAME Project Ref. 022-1892).

Celsa Manufacturing (UK) Ltd

Celsa is the largest producer of reinforcement in the UK and one of the largest manufacturers of other steel long products producing around 1.2 million tonnes of finished product every year. The Electric Arc Furnace (EAF), located on the main site, uses 100% recovered ferrous scrap as the primary raw material.

Additional information can be obtained from https://www.celsauk.com/

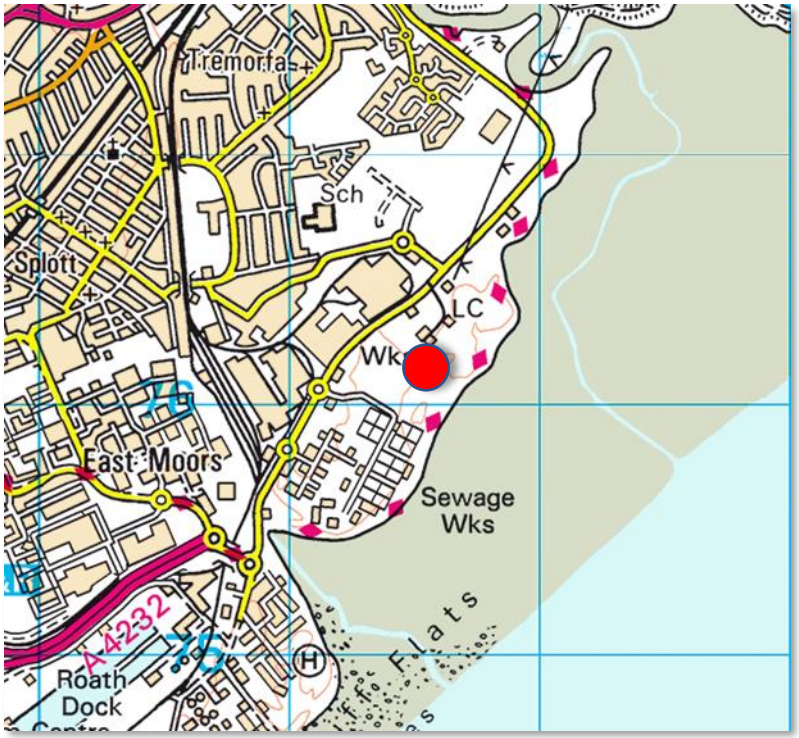


Figure 1: *Site Location - Ordnance Survey Map Extract (1:50,000)*
Ordnance Survey 1: 25,000 scale map with the permission of the Controller of Her Majesty's Stationery Office, Crown Copyright Earth and Marine Environmental Consultants Ltd, Licence No. 100050755

S02 Proposed Changes

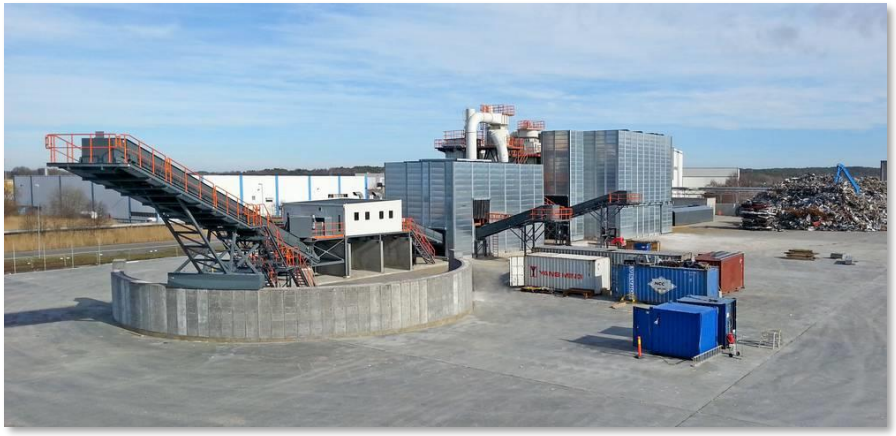
Proposed Changes

This application (variation) relates to the:

- **Installation** of a new scrap metal shredder on the Rover Way site.
- **Installation** of a new scrap metal shear (fixed installation) on the Rover Way site. It is important to note that the permit already includes the use of a mobile scrap metal shear. This is to be replaced with a fixed installation. Celsa is also requesting that the monthly processing limit is increased from a maximum of 5,000 tonnes to 7,000 tonnes.
- **Installation** of a new End of Life Vehicle (ELV) depollution station on the Rover Way site. The permit already allows Celsa to depollute vehicles, but the activity was never undertaken. A new (off the shelf) fully contained processing unit is proposed.

All proposed process changes are designed to produce materials suitable for the use with the electric arc furnace (EAF). Other changes include:

- **Movement** of existing slag processing equipment within the Rover Way site boundary. This is to allow the installation of the new scrap metal shear. No new equipment is proposed.
- **New** employee car park and staff amenity block near to the Rover Way site entrance.
- **Improvement** of internal roadways (hard surfacing) across the Rover Way site.



S03 Scrap Metal Shredder

Process Overview

Shredding is the reduction of waste (such as scrap metal) down to fist-sized lumps in order to increase processing and volume throughput whilst enabling the sorting and removal of other material types (e.g. fines, wood, plastics, textiles, non-ferrous metals etc.).

The shredder will be comprised of three enclosed noise abatement structures to accommodate each of the relevant operational processes. Each enclosed structure would be connected by a series of conveyor belts that conclude at a dedicated shredder output stockpile area.

The recovered ferrous scrap will be used as a primary raw material within the EAF steel making process.

Figure 2: Typical s*crap metal shredder (with noise abatement enclosures)*
https://ilg-international.com/?lang=en

S04 Scrap Metal Shear

Process Overview

Shearing is the mechanical treatment of scrap metal to prepare, reduce and to densify an incoming waste stream.

The current environmental permit was varied (EPR/TP3639BH/V006) in June 2017 to include the use of mobile scrap metal shear (maximum of 1,000 tonnes per month). Due to the nature of the scrap market and the size of the incoming materials the maximum monthly processing limit was increased to 5,000 tonnes (EPR/TP3639BH/V007).

The proposal is to cease use of the mobile shear (remove from Site) and create a new fixed shear installation (compound) on a new fully engineered surface immediately adjacent to the proposed shredder. Celsa would also like additional flexibility and thus would like to increase the monthly limit to 7,000 tonnes.

The unit can make 4 to 7 cuts per minute producing between 16 and 42 tonnes per hour. Productions rates depend on the material density, the machine feeding way and the cutting length.

The recovered ferrous scrap will be used as a primary raw material within the EAF steel making process.

Figure 3: Typical s*crap metal shear*

S05 ELV Processing Area

Process Overview

The site is currently permitted to undertake vehicle depollution and dismantling in-line with the requirements of article 6(1) of the End-of-Life Vehicles (ELV) Directive 2000/53/EC, although, the activity has not been undertaken on the site.

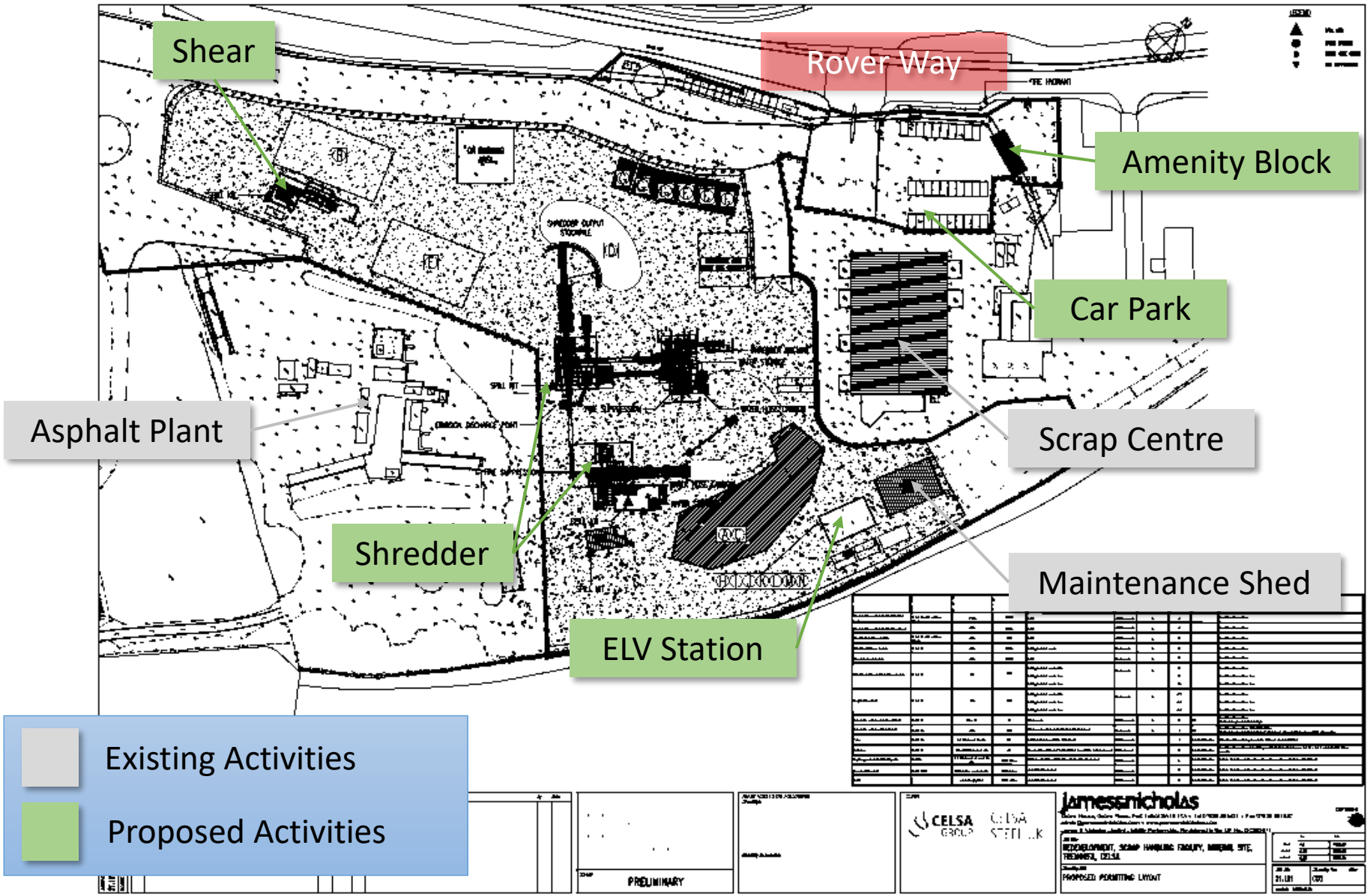
As part of this variation Celsa would like to amend the permit to include a new Best Available Technique (BAT) compliant ELV depollution station.

Where required, hazardous materials such as air bags, oils, brake fluids, fuels, air conditioning gases, and batteries will be removed from the vehicles for off-site processing.

Where suitable materials remain the scrap metal components will be shredded and then either removed from site (recycling or disposal) or used as a feed for the EAF.

Figure 4: Containerised ELV processing station

S06 Site Layout



S07 Overall Process Management

Management Systems

Celsa Manufacturing (UK) Ltd has implemented and maintains an Environmental Management System (EMS) that is certified to ISO14001:2015 (Certificate No. ES113432).

The EMS continues to be maintained and is externally audited (by Bureau Veritas) whilst delivering all indicative Best Available Technique (BAT) requirements for an effective management system. The current management systems will be updated to include the proposed operations as the activities at this site will provide a direct connection into the existing operations at the Cardiff site (i.e. the activity is directly associated with the operation of an electric arc furnace (EAF).

Celsa Manufacturing (UK) Ltd also operates a certified ISO 45001:2018 Occupational health and safety management systems and a certified ISO9001:2015 quality management system. These systems will also be applied to the shredding process.

Staff Competence

All waste operations on the Rover Way site are supervised by a Technically Competent Manager (TCM). All TCMs have completed relevant Certificate of Technical Competence (COTC) training as required by Natural Resources Wales (NRW).

Waste Acceptance

Procedures have been established to ensure that the company only accepts appropriate waste at the facility in-line with the agreed waste categories (as outlined within the environmental permit).

If it appears that the waste does not comply with the description on the waste transfer note, or that it may be hazardous or otherwise not acceptable under the sites permit, then the waste will either be re-loaded and rejected (if the person delivering the waste remains on site), or it will be isolated from the rest of the waste in a quarantine area for removal as soon as possible.

Unplanned and Emergency Events

As part of the variation Celsa has amended existing and developed new management plans, in-line with NRW BAT requirements to cover aspects such as Fire Prevention Management, Emergency Response, Dust Management and Noise and Vibration.

NRW requires that a strategy must be in place to allow for containment of firewater. The proposed development will allow for containment of a minimum volume of 900,000 litres (900 m^3) of firewater to be contained, having been discharged at a maximum flow rate of 5,000 l/min. A full assessment is presented within a separate drainage strategy report.

Point Source Emissions

There is a single point source emission to air (Ref. A11) from the shredder associated with the downstream sorting and cleaning plant. The plant is fitted with a cyclone and bag filter that is considered the Best Available Technique (BAT) in-line with NRW Guidance. Monitoring requirements are aligned with BAT and are outlined within the permit application.

Dispersion modelling was undertaken in-line with the BAT requirements. The principal conclusion of this assessment is that emissions to the atmosphere (at their emission limits from the proposed installation) give rise to predicted ground-level pollutant concentrations (process contributions, PC) that are not of concern to human health or ecosystems. The impacts are predicted to be insignificant.

There are no other point source emissions (to air) associated with any other parts of this variation.

Fugitive Emissions

Fugitive dust emissions from the shredder middle section are controlled via an internal water injection system. This is considered BAT.

Dust emissions can occur at several points in the storage cycle, such as material loading onto the storage piles, disturbance by strong wind currents, and loadout from the storage piles. The movement of trucks and loading equipment in the storage pile area can also a source of dust.

Dust control techniques include source reduction (mass transfer reduction), source handling improvement (e.g. work practices, transfer equipment, loading and unloading, drop heights, wind sheltering, moisture retention) and source treatment (e.g. water sprays or dust suppression).

A fugitive dust impact assessment has been undertaken and is submitted with the application alongside an operational dust management plan.

Surface Water

There are no new point source emissions to surface water from the installation.

Sewer

There are no new point source emissions of process derived wastewater to sewer associated with the installation.

The discharge from the proposed amenity block (e.g. toilets and sinks etc.) will be discharged into the existing Welsh Water sewer discharge point used by the Scrap Centre (Permit Emission Point Ref: S5).

Groundwater

There are no new (direct) point source emissions to groundwater from the installation.

Discharge to Ground (via Soakaway)

Historically on the Rover Way site scrap metal has been stored on compacted but unsurfaced ground and rainwater has been subject to infiltration. In general, with other steel works, the storage area design was aligned to the BAT Guidance i.e. BREF Iron and Steel Production.

However, due to the increased development on the Rover Way site Celsa would propose to upgrade all areas to impermeable hard standing with sealed drainage systems.

The discharge will make use of Sustainable Drainage Systems (SuDS) compliant filter strips (*Figure 5*).

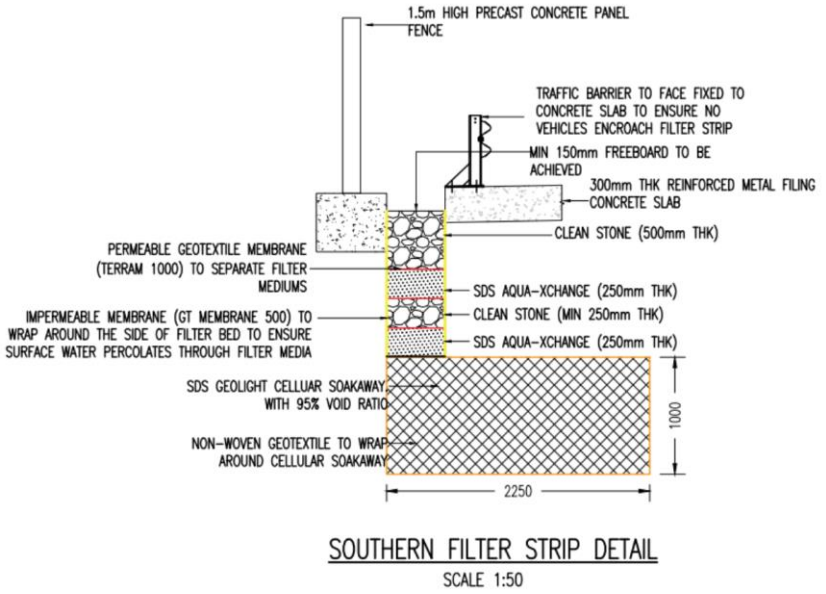


Figure 5: *Filter strips surrounding waste treatment area*

All filter strips are designed to utilize an engineered treatment media called SDS Aqua-Xchange™. This is an engineered pollution control and enhanced filter media which uses ionic exchange and filtration to remove soluble and solid pollutants from surface water runoff. According to SDS Ltd the filter media has proven capability to remove and retain dissolved heavy metals including copper, zinc and cadmium whilst also filtering out finer solid particles.

Introduction

A noise impact assessment has been undertaken in-line with the British Standard BS 4142:2014+A1:2019 Methods for Rating and Assessing Industrial and Commercial Sound.

Noise Modelling

Noise emission levels from the Proposed Development have been calculated using predictive computer noise modelling. The noise modelling software (Cadna-A) uses algorithms based on ISO 9613 'Attenuation of sound during outdoor propagation' to predict noise levels generated at receiver locations by noise sources.

BAT Assessment

The assessment indicates that the proposed plant items will not introduce additional impacts over the existing on-site activities. Accordingly, the measures applied to the proposed items are appropriate and BAT requirements are met.

Consideration of the combined sound levels, inclusive of current on-site activities indicates that adverse impacts may be likely at NAL04 (Hind Close) during operation of the consented on-site activities. This is in-line with the existing assessment of on-site activities. However, observations undertaken during the ambient survey indicate that current on-site activities are not readily distinctive against the residual sound levels.

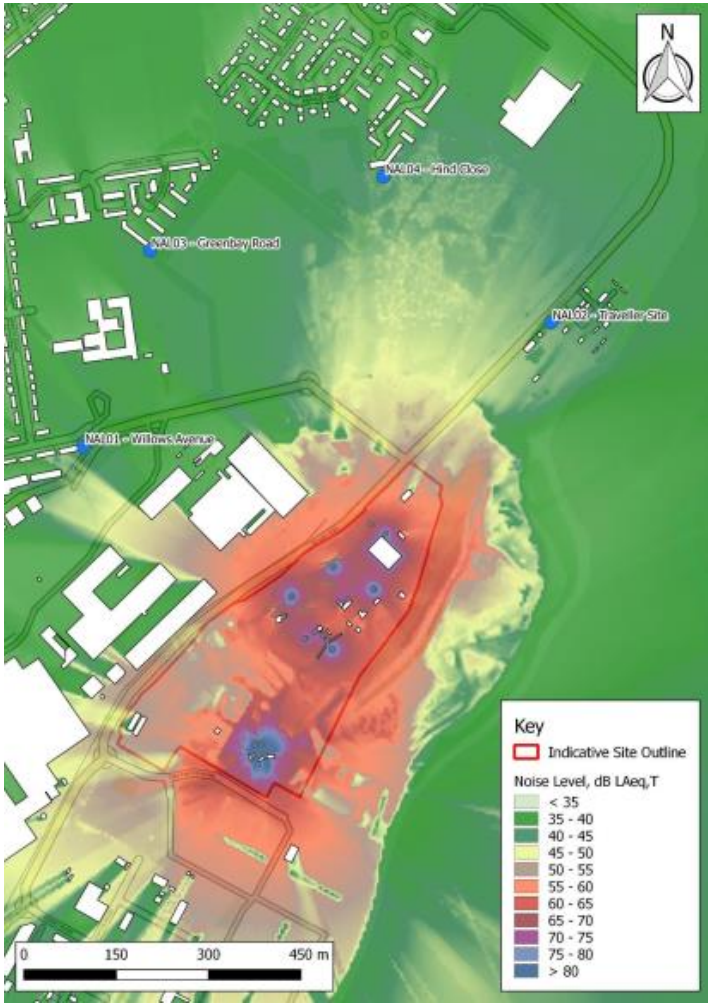


Figure 6: *Noise Contour, Combined Activities,1.5m*

Introduction

Celsa manufacture and deliver over 1 million tonnes of finished product annually, largely for the UK and Irish markets. With over 750 employees, as well as several hundred sub-contractors in South Wales, we see our business as an important supporter and member of the local community.

All the steel we produce in our melt shop is produced from scrap metal using the electric arc furnace (EAF) process. As a result of using recycled source materials and advantages inherent in the use of EAF, CELSA steel is over 80% less carbon-intensive than steel produced in a blast furnace using virgin materials.

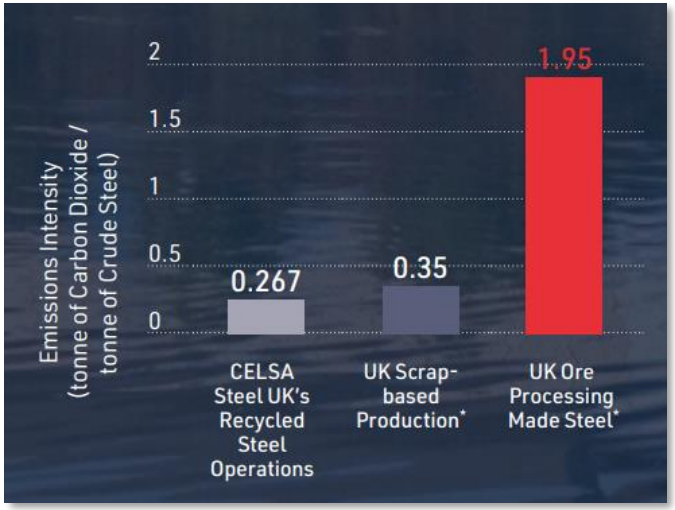


Figure 7: *Emission intensity comparison (Celsa Sustainability Statement 2021)*

Conclusions

The proposed installation of the shredder and shear will enable Celsa to improve the processing of scrap metal to ensure it meets the strict quality requirements for on-ward processing (recovery) within the EAF.

The plant and associated infrastructure has been specifically designed to meet all current NRW BAT Standards with regards to scrap metal processing (via a shredder) and associated storage requirements. In addition, the proposed hard standing of the processing areas and internal transport routes should significantly reduce fugitive dust emissions during dry periods.

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