1. Introduction

This document is design to meet the requirements of Condition 53 and 54 of planning permission 2024/0711, which relates to the construction of a new electric arc furnace at the Port Talbot Steelworks.

These conditions are included below for ease of reference:

Condition 53:

"Prior to the commencement of a phase of development as approved by Condition 39, a Material Management Plan (MMP) shall be submitted to and approved in writing by the Local Planning Authority (LPA). The MMP (for that phase) shall outline the procedures and methodologies for the management, reuse, storage, transportation, and disposal of materials (including soils, slag and other excavated material) arising from the development or imported onto site or exported from the site. The development shall be carried in full accordance with the approved MMP, and all materials shall be managed as detailed within the plan for that construction phase."

Condition 54:

"Prior to the commencement of a phase of development as approved by Condition 39, (with the exception of site clearance and demolition works) a Soils and Peat Management Plan (SPMP) shall be submitted to and approved in writing by the Local Planning Authority (LPA). The development shall be carried out in full accordance with the approved SPMP for that reason."

The document is designed to be a high level and site wide strategy that establishes the principles of how material is managed in delivering the EAF development. It applies to all phases of development. Its structure and content have been discussed informally with officers at Neath Port Talbot Council (NPT) prior to the submission of the application.

The document should be read in conjunction with the Phase 2 Site Investigation Report (March 2025) and Remediation Strategy (April 2025) prepared by RSK Geo-Sciences in relation to conditions 45 and 46 imposed on the EAF planning permission at the site.

1.1. Summary of Proposed Development

The hybrid planning permission provides for the following development:

'Hybrid planning application: full planning permission for the demolition of existing buildings and structures, partial infill of the BOS lagoon, and construction of a new electric arc furnace-based steel production facility (1 no. arc furnace, 2 no. ladle furnaces). The development includes an upgraded slag processing facility, chemical/material storage and transfer infrastructure and pipework and cabling (above and below ground), buildings, fume and dust treatment plant, water treatment facility and material handling systems. Electrical control rooms and power infrastructure. Offices and ancillary facilities together with new and amended transport infrastructure, landscaping and green infrastructure, and associated engineering operations.

Outline planning permission (with all matters reserved except for access and landscaping) for demolition and the construction of a scrap metal handling facility and associated scrap yards, scrap processing facility, underground and overground electrical infrastructure, and new and amended transport infrastructure, landscape and green infrastructure, drainage and associated engineering operations.

1.2. Document Purpose

This document lays out the principles in which soils, excavated materials and suitable stockpiled materials are to be handled associated with the EAF Meltshop project at Port Talbot Steelworks. There is a requirement for a significant cut and fill exercise across the construction site to facilitate various aspects of the development. This will likely generate a significant amount of soil, much of which will be anthropogenic in nature. The site was originally reclaimed from the mud flats and dunes that formed the port area prior to it's development from the early 1920's to the present day. Much of the made ground is slag from the various furnaces present over the years, with rubble and construction debris from the various iterations of the works. The majority of this material is entirely suitable to form the basis for the new construction, both chemically and geo-technically.

Tata Steel UK commissioned a Ground Investigation Report and a Geotechnical Design Report to assess the ground conditions and confirm the suitability of re-use. A significant amount of boreholes and trial pits were undertaken during the intrusive section of the investigation. Whilst it is not possible to completely cover all areas of the site, sufficient data has been analysed to characterise the site. Contaminants have been found that would be expected from a century of steel making at the Port Talbot site, including heavy metals, hydrocarbons, and asbestos containing materials. However these contaminants are not widespread through the construction boundary. Most of the impact is associated with the former Grange Coke Ovens and that area is due to be left predominantly undisturbed for the EAF project.

The conclusion of the Geo-environmental report is that some areas of contamination exceed the human health criteria for future occupiers. The recommended remediation is a clean capping layer or concrete slab is installed above these failing soils then it severs the pathway that would cause an unacceptable risk. This remediation strategy should be taken into account when reading this document: soils that exceed the thresholds will be maintained under a clean capping layer to ensure compliance. As noted above, a remediation strategy is being submitted to discharge Condition 45 of the planning permission.

2. General Soil Strategy

In alignment with the waste hierarchy, TSUK will attempt to maximise the re-use of soil on-site. There are areas of the site where levels will need to be significantly reduced. The majority of the rest of the site will be raised to plateau for development and limit the flood risk in the future. In order to maximise the re-use of soil on site, there needs to be a comprehensive soil testing regime in order to ensure that it is suitable for the end-use. Soil will be segregated upon excavation and tested, the exact frequency will be set out in the remediation strategy. The testing suite and proposed thresholds are in Appendix A and are based on the commercial/industrial end-use criteria, and the source of the threshold is included for reference.

The soil will be temporarily stockpiled so the laboratory testing can be completed. It should be noted that the potential for fugitive dust will be addressed as per the Construction Environmental Management Plan and the Air Quality Management Plan. The position of all soil samples will be recorded in order to accurately allow the immediate re-use of the soil once the testing has confirmed compliance. Soil that fails the re-use criteria will be temporarily quarantined in order to assess whether additional testing can allow the soil to be used. For example, a failing stockpile could be further subdivided into 5 sections and re-tested in order

to see if there was an isolated non-conformance or whether the whole stockpile is contaminated above acceptable re-use criteria.

If after re-testing soil is still above the soil re-use criteria then it will be sent for disposal. The testing will be used to complete a basic waste characterisation as per the Guidance on the Classification and Assessment of Waste (WM3). The route of disposal will depend on this classification and whether it passes Waste Acceptance Criteria (WAC) or requires an alternative disposal route, such as incineration.

3. Re-use of Soil and Other Materials on Site

As previously stated, Tata Steel UK has a long history of maximising re-use of its by-products and process materials on-site to provide a stable platform for its operations, stockyards and ancillary areas. TSUK intend to continue this re-use of material, as long as they are deemed to be suitable. The general soil strategy is listed in the previous chapter. Importantly, this approach relies on TSUK demonstrating that material we excavate isn't a waste.

The definition of waste is any material that a holder intends to discard or is required to discard. There has been much discussion on the use of soil in construction or remediation projects and the charity, Contaminated Land: Applications in Real Environments (CL:AIRE) produced a guidance document known as the Definition of Waste: Code of Practice (DoW:CoP). That set out a framework of how soils can be re-used and not classified as a waste. As it states "it is the responsibility of the holder of a material to form their own view on whether that material is waste or not." and then procedures to set out multiple scenarios for re-use on the site of origin or use on other sites or even as part of a hub and cluster arrangement whether there is an intermediate site. In order to formalise the re-use of potentially waste soils, a Material Management Plan (MMP) is produced that details volumes, origins, destination and purpose of soils

For the EAF Meltshop project, TSUK has assessed the risk of soil re-use on site. The risk has been found to be low, which has informed the intention not to discard any soil. For that reason, any soil that is excavated and directly re-used on-site without any treatment is not a waste and therefore will not require an MMP to formalise this.

TSUK and its contractors will continue to test soils and other materials for their suitability for use in various aspects of the project, however, in a situation where soil is excavated and requires remedial treatment in order to be compliant with re-use criteria, then a formal MMP will be created and lodged with CL:AIRE to ensure compliance.

4. Aggregate from Steel Waste: Quality Protocol

One of the major routes to utilising both deposited and stockpile materials is the Aggregate from Steel Waste: Quality Protocol. Basic Oxygen Steelmaking slag (BOS slag) was a major waste produced by the steelmaking process. Its long been valued as a useful, hard wearing aggregate that can be used in multiple construction scenarios, in both bound and unbound applications.

The issue with newly arising slag is that when it reacts with water and atmospheric carbon dioxide it has the potential to expand, which could lead to heave or subsidence issues. The Quality Protocol was created in collaboration with the Environment Agency to counteract this issue and to recognise the value of this material in construction. This allows the use of BOS

slag in a number of construction applications as a non-waste, as long as steps have been undertaken to ensure that the material is suitable for use. The exact testing varies depending on the use but is predominantly related to the geotechnical properties particularly its expansivity.

It should be noted that an entire suite of testing is not required by the quality protocol before the slag can be utilised for construction. A significant programme of testing was done as part of the preparation of the quality protocol document. It showed that, as long as the document is adhered to, BOS slag has no significant environmental impact over the use of other virgin aggregate alternatives. The full text of the quality protocol can be found here: Aggregate from waste steel slag: quality protocol - GOV.UK.

5. Temporary storage

Soil shall be stockpiled close to the origin of the material in designated areas that will be tracked by the principal contractor. The stockpiles will be designated a unique identifier that allows the tracking of the movement of material, but also the testing of the soil. This will be an manual system (with digital storage of all information) and the unique identifier will be assigned to the soils samples when they go to the laboratory. The tracking will include the date of excavation, location, tonnage or volume, confirmation of whether samples have been taken (or re-testing if required), results of analysis and confirmation of whether it is suitable for re-use. The tracking system will also record where the soil is to be re-used on site. This will also be used as evidence for Condition 63 on the use of slag on site, and will be made available to the council upon request.

There is no requirement to store stockpiled material on an impermeable surface unless it shows significant visual or olfactory evidence of contamination. In the case of suspected gross contamination, soil must be placed on an impermeable liner or sealed concrete area with no links to surface water drains.

In all cases, whether contamination is suspected or not, soil must be stored in a way where rainwater cannot run-off into surface water drains or ditches on site. This is in order to prevent silt build up in the drainage network and potential contaminants that could cause a breach of the site environmental permit.

6. Transportation

Soil will be transported to storage areas and areas of re-use on site via the on-site private road network. There will be a variety of both road worthy and non-worthy vehicles moving the soil. This will include Moxy-style tippers and other heavy plant along-side more traditional rigid and articulated tippers. The Port Talbot site has a significant amount of heavy plant for already for its standard operations and its road network is designed to support this.

The Construction Environmental Management Plan (CEMP) covers on-site vehicle movements and potential mitigations for elements such as dust, noise, tracking of soils on to the highway and storage of fuels. All movement of soil will adhere to the standards set out in the CEMP.

If any soil needs to be taken off-site for any reason then it will be transported on road worthy vehicles with the correct carriers license. If this includes off-site disposal of the soil then the load will be accompanied with a Waste Transfer Note (non-hazardous) or a Waste Consignment Note (hazardous waste). The following section details soil as a waste and under what circumstances it could be considered as such.

7. Asbestos

Due to the presence of boilers, furnaces, steam pipelines and other high temperature equipment on-site, there is the potential to find asbestos containing materials (ACM) in the near surface soils. This is predominantly white asbestos (chrysotile) that is usually cement bound but there is also the potential to encounter brown asbestos (amosite) primary from pipe lagging.

TSUK is required to produce a remediation strategy for the works as part of the EAF development. This document will provide greater detail on asbestos and proposals to control it and the risk it poses.

The risk associated with ACM is the potential inhalation of fibres by future users of the site or the construction workers. If the pathway to inhalation can be severed then the risk is mitigated. The standard remediation techniques when encountering asbestos are either removal or encapsulation. The installation of a clean capping layer above the asbestos containing soils is the preferred methodology on this site to protect future users from the risk of inhalation. For this reason, if soil is assessed to be between 0.001 and 0.1% by weight asbestos then it can be re-used on-site as long as clean cover (e.g. material that has passed the specification in Appendix A) is placed above it. This is the same mitigation set out in the Phase II contaminated land report for the presence of asbestos fibres in the made-ground.

Where soil has been assessed to be above the 0.1% hazardous waste threshold or visible ACM containing material is present, it must be disposed of to landfill, unless other mitigation measures are implemented such as solidification. It should be noted that any additional methods of dealing with asbestos have not been discussed with either the Local Planning Authority or the Environmental Regulator and would need to be licensed under the Environmental Permitting Regulations.

TSUK has an active hazardous landfill to the south of the main works that is able to accept asbestos containing material if there is no other route to re-use or remediation.

8. Conclusion

TSUK and its contractors are committed to re-using soil and aggregates generated from the construction activities on-site. A tracking and sampling system will be enforced to understand where soils have originated and where they will be re-used on site and ensure their suitability for incorporation into the earthworks design.

TSUK is fully aware of its obligations under waste law and have multiple mechanisms to utilise materials on site that meet those requirements including materials never becoming a waste, the DoWCOP and quality protocol.

If any materials cannot be legitimately re-used on site, they will be classified using WM3 and disposed of, either via the two on-site landfills or to an external provider. All permits and licenses will be checked and records held for any transfer or disposal.

Appendix A – Proposed Cover Thresholds

Proposed Clean Cover Thresholds		
Compound	Threshold (mg/kg unless otherwise stated)	Source
Arsenic	640	Suitable for Use Levels (S4ULs)
Beryllium	12	Suitable for Use Levels (S4ULs)
Boron	240,000	Suitable for Use Levels (S4ULs)
Cadmium	410	Suitable for Use Levels (S4ULs)
Chromium (III)	8,600	Suitable for Use Levels (S4ULs)
Chromium (VI)	33	Suitable for Use Levels (S4ULs)
Copper	68,000	Suitable for Use Levels (S4ULs)
Lead	2,300	Category 4 Screening Levels (C4SL)
Mercury	58	Suitable for Use Levels (S4ULs)
Nickel	980	Suitable for Use Levels (S4ULs)
Selenium	1,000	Suitable for Use Levels (S4ULs)
Vanadium	9,000	Suitable for Use Levels (S4ULs)
Zinc	73,000	Suitable for Use Levels (S4ULs)
Cyanide (Free)	24	SoBRA Acute Generic Assessment Criteria
Aliphatic EC_5-EC_6	3,200	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aliphatic EC_6-EC_8	7,800	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aliphatic EC_8-EC_{10}	2,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aliphatic EC_{10}-EC_{12}	9,700	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aliphatic EC_{12}-EC_{16}	59,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aliphatic EC_{16}-EC_{35}	1,000,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aromatic EC_5 -EC_7	26,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aromatic EC_7 -EC_8	56,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aromatic EC_8 -EC_{10}	3,500	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aromatic EC_{10} -EC_{12}	16,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aromatic EC_{12} -EC_{16}	36,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aromatic EC_{16} -EC_{21}	28,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Aromatic EC_{21} -EC_{35}	28,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Acenaphthene	84,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Acenaphthylene	83,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Anthracene	520,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Benzo[a]anthracene	170	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Benzo[a]pyrene	35	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Benzo[b]fluoranthene	44	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Benzo[ghi]perylene	3,900	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Benzo[k]fluoranthene	1,200	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Chrysene	350	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Dibenzo[ah]anthracene	3.5	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Fluoranthene	23,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Fluorene	63,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Indeno{123-cd]pyrene	500	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Naphthalene	190	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Phenanthrene	22,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Pyrene	54,000	Suitable for Use Levels (S4ULs) 1% Soil Organic Matter
Asbestos	<0.001%	Laboratory Detection Limit