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WASTE RESOURCE MANAGEMENT

SCOTT BROS. LIMITED

NEW BESPOKE ENVIRONMENTAL PERMIT

OPERATING TECHNIQUES

JUNE 2023

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SCOTT BROS. LIMITED

GRANGETOWN SOIL WASH FACILITY

OPERATING TECHNIQUES

JUNE 2023

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UPDATED JUNE 2023

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APPENDICES

DRAWINGS

Drawing Number	Drawing Title	Scale
BM12258-002	Site Layout	Approximately 1:500

1 INTRODUCTION

1.1.1 Scott Bros. Limited are applying for a new bespoke environmental permit for the erection of a soil and aggregate recycling and washing plant facility including storage areas, welfare cabin, associated car parking and landscaping.

1.1.2 This document outlines the approach to be undertaken for managing the process on site for the receipt, treatment, processing, storage and offtake of wastes and soil/aggregates.

1.1.3 Grangetown Soil Washing Facility is located on the land east of John Boyle Road, Grangetown, Middlesbrough, TS6 6TY.

1.1.4 The Facility will accept up to 3,000 tonnes a day (700,000 tonnes per year) of soils and aggregate, construction and demolition waste to treat and segregate the materials for onward use.

1.1.1 Planning permission for the site has been granted by Redcar and Cleveland Borough Council (reference: R/2020/0223/FF).

1.1.2 The operations on site will be in accordance with Environment Agency Guidance Non-Hazardous and Inert Waste: Appropriate Measures for Permitted Facilities. This application fulfils requirements that are set out within the guidance. The following are included:

- An up-to-date management system is provided and a summary is included in the application;
- A description of the site within its setting is provided in the Site Condition Report;
- A list of permitted materials is provided in Section 4;
- Details of material pre-acceptance and acceptance procedures, including procedure for dealing with non-conforming wastes, are presented in Section 4;
- Details of the potential hazards and receptors at the site are provided within the Accident and Amenity Risk Assessment;
- A description of the mitigation measures to ensure the control of dust, mud and other particulate debris are provided in the Dust Emissions Management Plan.

1.1.3 The operation will be managed in accordance with Scott Bros. Limited's Environmental Management System, which contains details and working instructions for personnel to follow, ensuring good environmental practice, safe systems of work, requirements of record keeping and continuous improvement.

2 PERMITTED ACTIVITIES

2.1.1 The permitted activities will be limited to physico-chemical treatment of soils (soil washing and separation) and storage of wastes, pending treatment activities, as listed in Table 2.1 below.

2.1.2 The Facility is intended to process up to 3,000 tonnes a day (700,000 tonnes per year) of soils and aggregate construction and demolition waste. It will also be permitted to store up to 60,000 tonnes of waste soils on site at any given time.

Table 2.1: Permitted Site Activities

Waste Framework Direction Classification	Activity
R5	Recycling/reclamation of other inorganic materials
R12	Exchange of waste for submission to any of the operations numbered R1 to R11
R13	Storage of waste pending any of the operations number R1 to R12 (excluding temporary storage, pending collection, on the site where the waste is produced)

3 SITE INFRASTRUCTURE AND MANAGEMENT

3.1 Site Infrastructure

3.1.1 A list of the machinery to be used at the Grangetown Soil Washing Facility can be found in the Plant Specification in Appendix 1.

3.1.2 Although there is a connection to foul sewer, the plant will be located on a concrete slab to provide an impermeable pavement, designed with falls to direct all incident rainwater to a central sump. Water from the sump will be utilised in the wash plant.

3.1.3 Any areas on site where non-inert waste is stored will be provided with impermeable surfacing and sealed drainage. Product or waste that is proven inert may be stored elsewhere on site. The areas to the north and west of the permit area contain older concrete pads but wastes stored in these areas will be restricted as the drainage is not proven.

3.1.4 Diesel will be stored on site to fuel excavators and shovels. Diesel will be stored in an appropriate tank, bunded to 110% of the capacity of the tank. Fill points will be located inside the bund.

3.1.5 Where diesel is delivered to site the capacity remaining in the tank will be checked before unloading begins. The delivery will be supervised so that any leaks or spills are detected immediately and mitigation can be put in place.

3.2 Site Management

3.2.1 The permitted site will be operated in accordance with the Scott Bros. Limited Environmental Management Systems, in accordance with the environmental permit and all approved Operating Techniques and documentation.

3.2.2 The site operations will be under the control of a Technically Competent Manager who holds the appropriate WAMITAB certification, which is attached at Appendix 2. The TCM will attend site at a frequency in compliance with the Environment Agency's requirements for site attendance. In accordance with the guidance this is equivalent to at least 20% of operational hours during the first six months of site operations.

3.2.3 The operation at the Site will be supervised at all times of when operating. Personnel will be responsible for waste reception inputs, outputs, and overall operation of the plant.

3.2.4 There will be scheduled weekly maintenance tests of the soil washing facility and associated systems for all operating scenarios.

4 MATERIAL ACCEPTANCE

4.1 Permitted Waste

4.1.1 The facility will only accept mainly soils and stones with some glass, brick, tile and concrete. That is, selected excavation and demolition materials suitable for processing into secondary aggregate for sale into the construction industry.

4.1.2 All waste accepted on site will be non-hazardous and limits have been set for the levels of contamination that can be tolerated, as outlined in Table 4.2.

4.1.3 Pre-acceptance testing will be required where the material may be other than inert.

4.1.4 The EWC codes of the wastes to be treated at the soil washing facility are given in Table 4.1 below.

Table 4.1: Permitted Wastes	
Waste Code	**Waste Description**
01	**Wastes resulting from Exploration, Mining, Quarrying and Physical and Chemical Treatment of Minerals**
01 01	**Wastes from mineral excavation**
01 01 02	Wastes from mineral non-metalliferous excavation
01 04	**Wastes from physical and chemical processing of non-metalliferous minerals**
01 04 08	Waste gravel and crushed rocks other than those mentioned in 01 04 07
01 04 09	Waste sand and clays
10	**Wastes from Thermal Processes**
10 02	**Wastes from the iron and steel industry**
10 02 01	Wastes from the processing of slag
10 11	**Wastes from the manufacture of glass and glass products**
10 11 12	Waste glass other than those mentioned in 10 11 11
10 12	**Wastes from the manufacture of ceramic goods, bricks, tiles and construction products**
10 12 08	Waste ceramics, bricks, tiles and construction products after thermal processing
10 13	**Wastes from the manufacture of cement, lime and plaster and articles and products made from them.**
10 13 14	Waste concrete only
15	**Waste packaging, absorbents, wiping cloths, filter materials and protective clothing not otherwise specified**
15 01	**packaging**
15 01 07	Glass packaging
17	**Construction and demolition wastes (including excavated soil from contaminated sites)**
17 01	**Concrete bricks tiles and ceramics**
17 01 01	Concrete
17 01 02	Bricks
17 01 03	Tiles and ceramics
17 01 07	Mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02	**Wood, glass and plastic**
17 02 02	Glass
17 03	**Bituminous mixtures, coal tar and tarred products**
17 03 02	Bituminous mixtures other than those mentioned in 17 03 01
17 05	Soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 04	Soil and stones other than those mentioned in 17 05 03
17 05 06	Dredging spoil other than those mentioned in 17 05 05
17 05 08	Track ballast
17 09	Other construction and demolition wastes
17 09 04	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03 (restricted to mixed loads containing soil and stones, concrete, bricks, glass, tiles and ceramics only)

Table 4.1: Permitted Wastes	
Waste Code	**Waste Description**
19	**Wastes from waste management facilities, off-site wastewater treatment plants and the preparation of water intended for human consumption and water from industrial use**
19 01	**Incineration or pyrolysis of waste**
19 01 12	bottom ash and slag other than those mentioned in 19 01 11
19 12	**Wastes from mechanical treatment of waste**
19 12 05	Glass
19 12 09	Minerals (for example sand, stones)
19 12 12	Other wastes (including mixtures of wastes) from mechanical treatment of waste other than those mentioned in 19 12 11 (silt and grit)
19 13	**Wastes from soil and groundwater remediation**
19 13 02	Solid waste from soil remediation other than those mentioned in 19 13 01
20	**Municipal Wastes**
20 01	**Separately collected fractions**
20 01 02	Glass
20 02	**Garden and park waste (including cemetery waste)**
20 02 02	Soil and stones
20 03	**Other municipal wastes**
20 03 03	Street cleaning residues (solids only)

4.2 Waste pre-acceptance

4.2.1 All waste will be subject to pre-acceptance checks and in addition to falling within the waste types set out in Table 4.1 the waste must be shown to comply with following criteria.

4.2.2 For wastes that may potentially have a high moisture content (silts) the waste producer must provide analysis to demonstrate that the waste has a moisture content of less than 30%.

4.2.3 The material must be free of asbestos. Where there is any doubt, an analysis must be provided.

4.2.4 The material must be free of coal tar or other hazardous substances that may render it hazardous waste. Unless wastes are demonstrably inert without testing or come from a green field site then analysis must be provided to confirm this.

4.2.5 Single stream materials that have a high organic content (>6% TOC), such as peat, will not be routinely accepted in order to maintain the quality of products produced by the process.

4.2.6 Where analysis is required the waste acceptance criteria outlined in Table 4.2 will be employed to determine whether wastes are suitable for treatment.

Waste Acceptance Criteria for Wash Plant	
Determinant	**Threshold Guideline (mg/kg unless otherwise specified)**
pH	<11.5 pH units
Arsenic	100
Cadmium	100
Cyanide (total)	100
Chromium (total)	500
Copper	800
Lead	750
Mercury	50
Nickel	350
Selenium	350
Vanadium (total)	500
Zinc	750
Asbestos	None permitted
Benzene	25
Ethylbenzene	25
Toluene	25
Xylene	25
TPH C5-C10	25
TPH C10 – C40	750
PAH	150
Other VOC (total)	1

4.3 Waste acceptance and control

4.3.1 Waste will only be accepted when the site is adequately manned allowing for acceptance checks and controlled receipt, storage and treatment of the material.

4.3.2 All loads will be accompanied by a waste transfer note including the relevant information as set out in the Waste (England and Wales) Regulations 2011. On arrival at site this will be checked against the pre-acceptance information and a visual inspection will be made to ensure the waste is as expected. Wastes that are excessively wet will not be accepted. The recognised hand squeeze method will be used to determine if moisture levels are acceptable.

4.3.3 Site Operatives will be suitably trained and, dependent upon the range of their individual responsibilities, will be fully conversant with the requirements of the relevant conditions of the Permit with regard to waste acceptance and waste rejection procedures at the site. A copy of the environmental permit will be held on site for reference and on the company's management system to allow reference at all times.

4.3.4 All wastes for recovery at the site are to be described adequately (by the producer) and in a way to allow the site to deal with the waste in a way that will not cause pollution of the environment.

4.3.5 Pre-acceptance and acceptance documentation will be made available for inspection by authorised officers of the Environment Agency on request.

4.4 Procedure for Dealing with Non-Conforming Wastes

4.4.1 Where appropriate, non-conforming wastes will either be returned to the producer/previous holder in the first instance or where this is not possible or appropriate, re-directed to an appropriately permitted facility. Where it is not possible to directly reject a waste load, it will be removed to an on-site quarantine area for temporary storage prior to off-site removal to a permitted facility as soon as is practicable.

4.4.2 Wastes, that are found not to conform with permitted waste types in Table 5.1, will be dealt with according to the following procedures:

- Referral to a suitable competent person;
- Referral to the material producer or the material carrier's base, to confirm the nature of the load;
- Wherever possible reload onto the delivery vehicle for offsite removal;
- Immediate notification to the Environment Agency;
- Where it is not possible to reload the material onto the delivery vehicle, isolation of waste to the quarantine area for temporary storage prior to off-site removal to the waste producer or suitably permitted facility within 5 days or receipt.

- All incidents of rejected loads will be recorded in the Site log, by filling in a Waste Rejection Form. A copy of this form to be forwarded in due course to the Environment Agency.

4.4.3 The permitted waste codes to be accepted on site will be stored in stockpiles. The wastes accepted, whilst of a granular nature, are unlikely to pose a significant risk to surface or groundwater at the site. Many wastes will be inert in nature, whilst others will be classed as non-hazardous. All wastes will be stored on concrete hardstanding, meaning there is limited potential for leachate infiltration to the land beneath the site. Waste storage areas are shown on drawing BM12258-002.

5 SOIL WASHING PROCESS

5.1.1 An overview of the treatment process and the Material Flow of the soil washing facility can be seen in Appendices 3 and 4 respectively.

Phases of operation

5.1.2 Using a loading shovel or tipper truck, waste soils and aggregates are fed into the R4500 Scalper unit for aggressive screening to ensure efficient delivery of difficult material to the wash plant. This creates an output of >80mm aggregates.

5.1.3 Ferrous metals from the feedstock are recovered with an overband magnet before the remaining waste soil and aggregates are fluidised to start the washing process.

5.1.4 The material undergoes a pre-screen to remove a 40-80mm aggregate.

5.1.5 An AggMax Logwasher is used to combine feeding, scrubbing, and sizing of clay bound materials, which is subject to attrition to breakdown the clay and release clean sand and aggregate materials.

5.1.6 To ensure the highest quality output of materials, organic fines and other low-density materials are removed from the plant by being floated off and the water then passes through a trash screen to collect the debris. The trash screen will be periodically cleared into a skip placed below. The aggregates are passed to an integrated double deck sizing screen.

5.1.7 The outputs from this screening process three stockpiles of clean and contaminant free aggregates; 4-10mm aggregates, 10-20mm aggregates and 20-40mm aggregates.

5.1.8 Meanwhile the water, sand and fine material are passed through the EvoWash to separate the silt using cyclone separation. The Dual Pass Primary Cyclone produces 0-4mm Grit Sand and 0-2mm Soft Sand as an output.

5.1.9 The remaining water and fines then pass to the Aquacycle, which will separate the sludge/silt from the dirty water and the sludge is pumped into storage tanks. 90% of the water is cleaned and recycled to be processed back into the soil washing facility. The remaining 10% of water will be retained in the filter cake, with a small fraction being lost via evaporation. High pressure plates squeeze the sludge to remove excess water to produce a dry clay output (filter cake).

5.1.10 Once the waste has been treated at each phase of the facility, the material will be stored in stockpiles. Stockpiles will be managed to ensure there is minimal wind whipping of the exposed surfaces.

Removal of Aggregates from site

5.1.11 Vehicles arriving at site will produce a consignment order or have a pre-arranged collection time to collect aggregates from the treatment process. The consignment form or other collection information provided by the collection driver will be checked with site records and the driver will then be directed to an appropriate location on site for the aggregates to be loaded onto their vehicle.

5.1.12 Site mobile plant will deliver aggregates to the vehicle in the agreed quantities and once loading is complete, the vehicle will be directed off site, adhering to site rules such as speed limits and routes to ensure site safety.

7 OUTGOING MATERIALS

7.1.1 The wash plant should produce sands and aggregates of a consistent quality and size which can be sold into the construction market.

7.1.2 It is likely that any contamination will be associated with the fines and will be transferred to the filter cake.

7.1.3 The filter cake will be tested at a frequency of one sample per 500 tonnes for the first three months of operation. Samples will be submitted to an accredited laboratory to determine whether they should be classed as hazardous or non-hazardous waste, following the guidance in WM3.

7.1.4 Thereafter the results will be reviewed to determine whether the classification of this waste stream is consistent. Should results show the results are reasonably consistent the frequency of testing will be reduced to one sample per 5,000 tonnes of material. Following the first twelve months the results will be reviewed again and testing may be dropped to once every twelve months if the results are consistent. If the waste is very variable a higher frequency of testing will be agreed with the Environment Agency.

7.1.5 Following testing the filter cake will be sent for recycling or disposal, as appropriate based on the classification. There is potential for the fines to be made into blocks.

7.1.6 Waste from the trash screen will be sent off site for disposal or energy recovery at a permitted site.

8 RECORD KEEPING AND CONTROL OF AMENITY ISSUES

8.1.1 The site will be inspected on a daily basis with staff carrying out a visual and olfactory assessment around the site boundary to check for fugitive emissions of litter, odour, noise, mud or dust.

8.1.2 Should any litter be noted this will be collected and place in the skip provided for light waste. Wastes are predominantly soils, stone, brick, tile and concrete. It is unlikely that any significant light waste will be present and litter is not expected to be an issue.

8.1.3 In terms of odour the materials to be processed through the site are mostly inert. They are not expected to generate any significant odour. Should odour be detected the source will be investigated and measures will be put in place to resolve the issue. If any particular waste stream is causing an odour problem, discussions will take place with the waste producer to resolve the issue at source. Where no resolution is found, that particular waste stream will be banned from the site to prevent further issues.

8.1.4 Mud and dust are not expected to be a major issue as the site is provided with concrete surfacing. The wash process means that fines will be entrained in the process water and are unlikely to be emitted to air. However daily inspections will be made and the site entrance and yard area will be swept as necessary to minimise issues. Materials will be stored in dedicated bays or stockpiles and the site will be kept tidy.

8.1.5 Full details of the risk to amenity are provided in the Habitats, Amenity and Accident Risk Assessment as provided as part of the Application for the environmental permit. Further detail on mitigation of dust arising from site processes is provided in the Dust Emissions Management Plan.

8.1.6 Should any issues be noted during the daily inspections these will be recorded in the site logbook and raised with site management, appropriate remedial action will then be agreed and undertaken. The remedial action agreed and the time that it was carried out will be noted in the site log.

8.1.7 All site infrastructure and site plant will be regularly inspected for leaks or damage. Such inspections will also be recorded within a site diary. Where leaks or damage are identified the equipment will be immediately repaired by suitably qualified staff or taken out of service.

8.1.8 Any spills occurring on site will be contained, cleaned up and recorded as soon as is practicably possible. The incidents on site will be reviewed as part of the ongoing commitment to improvement of the Management Systems, with analysis carried out to determine the cause of any incident and ensure there is no repeat wherever possible.

8.1.9 The site log will be made available to warranted officers of the Environment Agency on request. Should any incident have the potential to cause significant emissions the Environment Agency will be informed by telephone and remedial action will be agreed with the local environment officer.

8.1.10 Other records kept on site, either in electronic or hard copy format, will be details of waste enquiries and pre-acceptance information, copies of all material transfer notes for incoming and outgoing materials, details of any rejected loads, copies of the analysis of materials where required and results of any environmental monitoring.

APPENDICES

APPENDIX 1

APPENDIX 2

APPENDIX 3

APPENDIX 4

APPENDIX 5

DRAWINGS

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