

SUNDERLAND UTR FACILITY ENVIRONMENTAL PERMIT APPLICATION

Baseline Site Condition Report

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SLR 

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CONTENTS

1.0	INTRODUCTION.....	1
1.1	Context and Objectives of the Site Condition Report.....	1
1.1.1	Sources	1
1.2	Present Use of the Site.....	1
1.2.1	Site Location.....	1
1.2.2	Current on-Site Land Use.	2
1.2.3	Current Surrounding Land Use.	2
1.3	Environmental Setting.....	3
1.3.1	Geology.....	3
1.4	Hydrogeology.....	3
1.5	Hydrology.....	3
1.5.1	Surface Water	3
1.5.2	Coastal Water	3
1.6	Environmental Record Review	4
2.0	POLLUTION HISTORY.....	5
2.1	Pollution Incidents	5
2.2	Historic Site Activities.....	5
2.2.1	Summary on Site History.....	6
2.3	Historic Offsite Activities.....	7
2.4	Baseline Data.....	7
2.4.1	Soil Quality	8
2.4.2	Groundwater Quality	9
2.4.3	Gas Monitoring.....	9
3.0	PERMITTED ACTIVITIES.....	10
3.1	Proposed Permitted Activities.....	10
3.1.1	Installation Activities	10
3.1.2	Specified Waste Management activities	10
3.1.3	Directly Associated Activities	11
3.1.4	Permitted Waste Types	11
3.2	Non-Permitted Activities	11
4.0	CURRENT BASELINE SITE CONDITIONS.....	12
4.1	Environmental Monitoring and Compliance	15
4.2	Operation of the Installation and Management System.....	15

4.3	Environmental Risk Assessment.....	15
4.4	SCR Updates.....	15

DOCUMENT REFERENCES

TABLES

Table 1	Surrounding Land Uses.....	2
Table 2	Historic Onsite Land Uses	5
Table 3	Historic Off-Site Activities.....	7
Table 4	List of Wastes	11
Table 5	Main Stages in Preparing a Baseline Report.....	12

APPENDICES

- Appendix SCR 1: H5 Table
- Appendix SCR 2: Phase 1 Site Investigation
- Appendix SCR 3: Site Investigation

1.0 Introduction

Waterfront AS has instructed SLR Consulting Limited (SLR) to prepare a bespoke Environmental Permit (EP) application for the proposed Sunderland Used Tyre Recycling (UTR) Facility to be located at Extension Road, East End, within the Port of Sunderland, SR1 2NR (the site) under the Environmental Permitting (England and Wales) Regulations 2016 (as amended). The site will be operated by Wastefront Sunderland Limited.

1.1 Context and Objectives of the Site Condition Report

This Site Condition Report (SCR) has been prepared in accordance with the Environment Agency's (EA) Site Condition Report H5 guidance with regards to the requirements of a baseline report to meet the requirements of Article 22 (2) of Industrial Emissions Directive (IED). A completed H5 template is included as appendix SCR1.

The purpose of the SCR at the application stage is to describe and record the condition of the land at the time of making the Environmental Permit (EP) prior to commencement of any operations. The SCR will provide a point of reference and baseline environmental data so that when the EP is surrendered it can be demonstrated that there has been no deterioration in the condition of the land as a result of the proposed operations and to ensure that the condition of the land is in a 'satisfactory state' on surrender of the EP.

1.1.1 Sources

The following sources have been reviewed in order to produce this SCR:

- DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 1 of 4. Ref: 3717-14-001 Issue 1. – details site investigation undertaken in November & December 2020;
- DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 2 of 4;
- FWS. Geotechnical & Environmental Consultants. Preliminary Contamination and Mining Risk Assessment on Land at Hudson Dock East, Port of Sunderland. Ref: 38990RD1/Rev01. Dated 29 January 2021; and
- DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 3 of 4.: Dated 03 February 2021. Comprising:
 - FWS Geotechnical & Environmental Consultants. Phase 2 Ground Investigation on Land at Hudson Dock East, Port of Sunderland. Reference 38990R02 dated 29 January 2021.

1.2 Present Use of the Site

1.2.1 Site Location

The proposed UTR facility will be situated at Sunderland East Dock; National Grid Reference (NGR) NZ 41364 56893. The site is generally flat with an elevation of approximately 5 to 5 m AOD in the central and west and 4.5m to 5m AOD in the northeast corner. The site lies within an area predominately occupied by commercial/industrial premises associated with the docks and also coastal inlet areas. The site location is presented in Drawing 01.

It is noted that a road running north to south separates the far western portion of the site and the main site area.

The permit boundary and detailed site layout is shown in Drawing 02. The surrounding land uses and local receptors within 500m and 1km are shown on Drawing 03 and cultural and natural heritage receptors within 2km are illustrated on Drawing 04.

1.2.2 Current on-Site Land Use.

FWS Consultants report the following current on-site land uses as observed in their 2020/2021 site investigation¹:

Area A Former Sunderland Oil Storage Ltd (SOSL) site

The site was generally covered by gravel hardstanding and used to store industrial mechanical presses. Scaffold board were also stored in the northeast. Containers containing presses, and empty skips were present in the northeast. In the central area was a small brick structure, with some self-seeded bushes adjacent to it. In the western area, the ground was heavily weathered with mostly gravel hardstanding. Some concrete slabs of different state of weathering (ranging from intact to fractured) were present. In the northwest, overgrown vegetation was overlying gravel hardstanding. A 2m tall retaining wall down to sea level was present around 5 m to the east of the site, made of sheet pile, indicating the sea mean high water level.

Area A2 North East Triangular Area

This area comprises a triangular shaped parcel of land with an asphalt road along the northern boundary. The eastern boundary is marked by a steep slope to the sea and the southern and western boundaries comprise a metal fence. Generally, the site is covered by grassed vegetation and brambles, with loose gravel and concrete floor slabs in the south. The ground is occasionally boggy. The centre of this area contains a stockpile of tyres covered with topsoil approximately 3 to 4 m high, and mounds of potentially fly-tipped waste including fibreglass boat panels, refrigerators, a vending machine, empty intermediate bulk containers (IBCs), rubble, plastic, rope, timber and metal.

Area B Western Site Area: Sheers Quay

The area is generally covered by gravel hardstanding with an asphalt access path in the north. An electric substation was present in the north surrounded by concrete hardstanding. In the south was several containers and skips stored. An unknown small building was present in the central area. The western boundary was delineated by an approximately 5 m tall quayside brick wall. There was no evidence of invasive species on site.

1.2.3 Current Surrounding Land Use.

A summary of the site's immediate surrounding land uses is provided in Table 1 below:

Table 1 Surrounding Land Uses

Boundary	Description
North	Immediately north a commercial facility operated by Northumbrian Roads for aggregates processing is present with a mix of commercial/industrial premises and derelict land beyond. Residential properties located 690 m north west.
East	To the east of the site lies open ground before the sea wall beyond which is the North Sea (80 m east).
South	Adjacent to the south of the site is the Tradebe Solvent Recycling Facility (listed as an active Upper Tier Control of Major Accident Hazards - COMAH site). This site has historically comprised a number of above ground storage tanks. However, these tanks are not present on the 2020 historical map presented by FWS Consultants. Residential properties located 750m south west.
West	To the west of the site is the Hendon Dock with a number of container ships located within this dock. The nearest residential properties are a development at the former Boys Orphanage, approximately 0.5 km to the west of the proposed site.

¹ It is noted that FWS Consulting have split assessment of the area into Area A, Area A2 and Area B. This is presumably to match planning/development requirements.

1.3 Environmental Setting

1.3.1 Geology

A review of the British Geological Survey (BGS) map² reveals that the site is underlain by a bedrock of the Roker Formation - Dolostone (Cream, oolitic dolostone with subordinate thin beds of fine-grained dolomite). Superficial deposits at the site comprise Glaciolacustrine deposits of Devensian Clay and Silt.

The FWS Consulting (2020) intrusive investigation revealed the following on site geology:

- Made Ground: 6 to 12.5 m deep.
- Superficial deposits: 5.2 to 13 m deep. Comprising gravelly SAND or soft black slightly sandy CLAY. Dark brown slightly sandy clay with occasional shells (possible dredge material) was also noted.
- Bedrock: encountered 6.5 m to 13.4 m deep. Comprising Very weak to moderately strong light brownish yellow dolomitic limestone.

1.4 Hydrogeology

The Multi-Agency Information for the Countryside (MAGIC)³ website classifies the aquifers underlying the site as:

- Superficial deposits: Unknown - (lakes and landslips).
- Bedrock: Principal Aquifer.

The Groundwater Vulnerability layer on the MAGIC map reveals that the site lies within a groundwater vulnerability area classified as medium - high.

No groundwater abstraction licences are located within 500m of the site.

There are no groundwater Source Protection Zones within 1 km of the site.

FWS Consulting noted a discharge consent located 7 m to the south of the site which is held by Solvent Resource Management Ltd and relates to sewage discharges to underground water.

1.5 Hydrology

1.5.1 Surface Water

The closest water course, River Wear, is located approximately 920m north west of the site. No surface water abstraction licences were identified within 1km of the site.

1.5.2 Coastal Water

The closest natural watercourse is the Hudson Dock adjacent to the western boundary. The North Sea is also located approximately 80 m to the south east.

FWS Consulting noted a discharge consent 70 m to the east of the site related to trade discharge – process water listed to Sunderland Oil Storage Limited, possibly related to the former site use for controlled discharge to the sea.

² British Geological Survey, Available at www.bgs.ac.uk, accessed in May 2021

³ Multi-Agency Information for the Countryside – Available at: <http://www.magic.gov.uk>, accessed June 2019

1.6 Environmental Record Review

FWS Consultants identified one Local Authority Pollution Prevention Control entry within 250m that is associated with the site itself and relates to SOSL for process for the storage, loading and unloading of petrol at the terminal.

There are ten Integrated Pollution Prevention and Controls within 250m of the site. The closest is 7m to the south of the site and relates to the disposal or recovery of hazardous waste involving physico-chemical treatment.

The site is still listed as being an active lower tier COMAH site in the Envirocheck report (dated November 2020) presented by FWS Consultants in their Preliminary Contamination and Mining Risk Assessment report. The COMAH entry is listed to SOSL.

The Tradebe Solvent Recycling site immediately south of the site is operated as an upper tier active Control of Major Accident Hazards (COMAH) site.

Five Planning Hazardous Substance Consents are also located within 250m of the site. The site is located within an industrial area and there are no fuel stations within 250m of the site.

The site is located within an industrial area and there are no fuel stations within 250m of the site.

The two closest active industrial records are located 200m to the south and 355m to the southwest of the site and relate to a recycling services and car body repairs.

FWS Consultants reported one historical landfill and registered landfill site 140 to 190m west of the site which deposited inert waste and building waste and the last input was 1994. A registered waste treatment or disposal site is located 80m to the south of the site relating to recovery – solvent including fuel oils, halogenated compounds, hydrocarbons, kerosene, mineral oil. Three waste management facilities are located within 250m north and west of the site relating to household, commercial and industrial transfer stations. There are 13 Integrated Pollution Control Registered Waste Sites on site, and an additional six within 250m of the site all of which relate to recovery processes within the waste disposal industry.

2.0 Pollution History

2.1 Pollution Incidents

FWS Consultants reported two pollution incidents to controlled waters within 250m of the site which were classified as Category 3 Minor Incidents relating to oil boat/ship/transport accident. None of the pollution incidents reported were associated with the site

2.2 Historic Site Activities

It is noted that the site was previously owned by Sunderland Oil Storage Ltd (SOSL). A review of the Companies House database⁴ reveals that SOSL were formally dissolved on 26 January 2016.

Table 2 identifies the site's historic land uses as identified from historical mapping:

Table 2 Historic Onsite Land Uses

Date	Land Use and Description - Onsite
Prior to 1856	<ul style="list-style-type: none"> Western portion of the site comprises reclaimed land. With the eastern portion of the site comprising open sea.
1857-1897	<ul style="list-style-type: none"> The site was developed with a boiler and chimney in the west and a boiler and engine house in the north. A number of wagon ways/railways are present across the western part of the site. The eastern side of the site open sea with a groyne built in the centre and jetty/breakwater in the northeast.
1897-1919	<ul style="list-style-type: none"> The boiler and chimney in the west has been replaced by a Laing warehouse The boiler and engine house in the north has been further developed to become a hydraulic engine house. Further railways were added in the western part of the site. The groyne in the centre has been removed and the land in the north and east has been reclaimed with a quay wall through the centre of the site and breakwater wall along the northeastern boundary. A fish quay has been built in the centre of the along with a jetty and area of undefined shingle. The Hendon Channel is crossing the site from the east to the southwest with a jetty along the southern boundary of the site, with docking facilities protruding into Hendon Channel. A small building was built in the southern corner.
1919-1942	<ul style="list-style-type: none"> A sawmill was built in the north of the site adjacent to the hydraulic engine house, with various unidentified buildings. A building and crane were built in the northwestern corner. A travel crane was built in the central area. The fish jetty was removed the fish quay was identified as a fish market.
1942-1951	<ul style="list-style-type: none"> Land has been further reclaimed in the centre and south of the site with Hendon Channel being infilled and the fish market no longer present.

⁴ [Companies House \(company-information.service.gov.uk\)](https://www.companieshouse.gov.uk/)

Date	Land Use and Description - Onsite
	<ul style="list-style-type: none"> • Further cranes now present along the western boundary. • The travelling crane in the centre has been replaced by simple crane, and a new travelling crane was built along the western boundary. • The sawmill in the north is now identified in the central west of the site to the centre of the site. A new wagon way was added in the south. • The building in the northwestern corner has been demolished.
1951-1964	<ul style="list-style-type: none"> • The majority of the site has been completely reclaimed from the sea with the exception of the northeastern corner. • Four railway sidings are present across the majority of the reclaimed area (Area A). This area is also labelled 'timber yard'. • A road is present along the eastern boundary. • A small timber yard is present in the north. • A building was built in the northwestern corner.
1967- 1983	<ul style="list-style-type: none"> • The railway sidings across Area A have been removed and replaced with 17 No. above ground storage tanks. • Southern area of Area labelled as a depot. • Large warehouse constructed in the southwest of the site.
1983-1993	<ul style="list-style-type: none"> • All railways were removed in Area B. • All buildings and structure along the western boundary were removed. • The hydraulic engine house has been removed in the north.
1991-2000	<ul style="list-style-type: none"> • The northeastern corner of the site has now been fully reclaimed • Reconfiguration and demolition of buildings in the northeast of the site • Laing Warehouse demolished in the east of the site. • Reconfigured depot buildings in the south of the site
2009-2013	<ul style="list-style-type: none"> • Structures demolished on the west of the site. by 2000 with sawmill building in the centre west of the site demolished by 2009.
2013-2020	<ul style="list-style-type: none"> • All structures have been removed from site except for the roadway that divides the site. • By 2020 unidentified three small structures are located in the centre of the site in the northwest and west of the site

FWS Consultants have provided little detail on the potential contents of the 17 No. above ground storage tanks located at the site c.1967 to 2013. Due to the occupation of the site by SOSL it is considered likely that at least some of these tanks comprised oil.

2.2.1 Summary on Site History

The site comprised small boilers, engine rooms and a chimney prior to 1857 in the western portion of the site. The eastern area below the sea and comprised a groyne until the late 1890s. The site was then gradually reclaimed from the sea up to 1986. During this period numerous building were built and redeveloped including

a timber yard, warehouse and sawmill. Wagon/rail ways were also located onsite. Between 1954 and 1986, a large timber yard was developed in the east then replaced by a chemical depot until the 2000s. Between 1986 and 2000, most structures were removed, and the chemical depot being completely removed in the 2000s.

2.3 Historic Offsite Activities

Table 3 identifies the historic land use of the area surrounding site as identified from historical mapping.

Table 3 Historic Off-Site Activities

Date	Land Use and Description - Onsite
Prior to 1856	<ul style="list-style-type: none"> Adjacent to the north, west and south are reclaimed land as part of the docks. Groynes and embankment walls also present as part of the dock infrastructure.
1857-1897	<ul style="list-style-type: none"> Dock entrance with a half tide basin adjacent to the north. Adjacent to the west is the South Dock Waters, with a half tide basin and entrance to the north. A ship building yard and wood works is present 150 m to the north with a wood drying and processing works 200 m north.
1897-1919	<ul style="list-style-type: none"> The timber yards and ship building yard 150 m to the north have been further developed. Land directly adjacent to the south has been reclaimed, with a lifeboat house built 80 m to the south and a timber yard 150 m south. Hendon Dock constructed to the southwest. Building constructed approximately 50 m to the southwest.
1919-1942	<ul style="list-style-type: none"> Lifeboat house has been demolished.
1942-1951	<ul style="list-style-type: none"> Land has been recovered with a depot and storage tanks present to the south of the site. The ship building yard 100 m north has been further developed.
1951-1964	<ul style="list-style-type: none"> Large warehouse now presents approximately 70 m south of the site.
1967- 1983	<ul style="list-style-type: none"> Oil depot adjacent to the south has reduced in size. Large warehouse built 100 m to the southwest.
1983-1991	<ul style="list-style-type: none"> No significant changes.
1991-2000	<ul style="list-style-type: none"> All structures to the north removed.
2009-2013	<ul style="list-style-type: none"> Further land was reclaimed adjacent to the north and east of the site.
2013-2020	<ul style="list-style-type: none"> No significant changes.

2.4 Baseline Data

A Phase II intrusive investigation was undertaken between 30 November 2020 and 25 January 2021 by FWS Consultants on behalf of DTA Consultants across the site (as presented in Appendix SCR3). This Phase II investigation is based upon a Preliminary Contamination and Mining Risk Assessment also undertaken by FWS Consultants originally issued in November 2020.

The Phase II investigation identified the presence of significant contamination hazards (refer to Appendix SCR3) across the site, specifically: asbestos, polycyclic aromatic hydrocarbons (PAH), chlorides, sulphides and heavy metals in Made Ground and also total petroleum hydrocarbons (TPH) in perched groundwater.

2.4.1 Soil Quality

Historical Studies

2001:

Norquest Holst⁵ undertook testing of twenty-five samples of Made Ground in 2001 for a suite of metals, sulphates, TPH, PAH and Phenols, of which three samples were tested for speciated PAHs. In addition, twenty-two samples of Made Ground were tested for asbestos ID by Norquest Holst in 2001. None of the samples recorded asbestos above 0.001%.

2014:

IOM⁶ undertook testing for 51 soil samples from 17 trial pits at depths of between 0.0 and 3.5 m for qualitative and quantitative asbestos within Area A in July 2014. From this analysis 18 samples were found to contain asbestos containing materials (ACMs), principally chrysotile and amosite, with minor crocidolite.

2020 - 2021 Intrusive Investigation

The most recent soil investigation revealed concentrations of the following chemicals identified within Made Ground above the generic assessment criteria (GAC) at either the maximum concentration reported or the upper confidence level 95th percentile concentration:

Area A

- Benzo(a)pyrene and Dibenzo(a, h)anthracene (above Human Health GAC).
- Sulphate and chloride (above property and in ground water services GAC).
- Copper (above ecological / plant uptake GAC).

Area A2

- Dibenzo(a, h)anthracene (above Human Health GAC).
- Chloride (above property and in ground water services GAC).

Area B

- Chloride and sulphate (above property and in ground water services GAC).
- Cadmium, zinc and arsenic (above ecological / plant uptake GAC).

Asbestos was reported in 50 of the 133 samples tested at depths of between 0.4 and 7.0 m and comprised Amosite, Chrysotile and Crocidolite as microscopic loose fibres, loose fibres, bundles of fibres, asbestos debris and bundles in bitumen and insulation and debris. Asbestos quantification testing presented asbestos as <0.001% to a maximum 0.097%.

Potentially unacceptable risks to human health from elevated concentrations of hydrocarbons and asbestos sourced from Made Ground across the site have been identified.

Soil contamination is considered to be a significant risk to construction workers during redevelopment of the site. Once the site has been redeveloped for ongoing commercial use and identified soil impacts have been

⁵ Norwest Holst Soil Engineering Ltd, December 2001, Factual Report on A Ground Investigation for Port of Sunderland Regeneration Study

⁶ IOM, July 2014, Certificate of Analysis – Qualitative and Quantitative Asbestos Analysis

mitigated (i.e., clean soil covers installed in landscaped areas and hardstanding in place) the potential risk to onsite receptors is considered to be low.

2.4.2 Groundwater Quality

2020 - 2021 Intrusive Investigation

A groundwater monitoring round was undertaken between 28 and 29 January 2021.

The Phase II groundwater investigation revealed concentrations of the following chemicals identified within perched water (within Made Ground) above the applicable generic assessment criteria (GAC):

- Boron (reported at the same concentration as the potable water GAC – 1000 ug/L)
- Manganese and chloride (aquatic life GAC).
- Copper, lead, mercury, naphthalene, anthracene, fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno (1,2,3) pyrene and benzo(g, h, i)perylene, various volatile organic compounds (VOCs)/ semi volatile organic compounds (SVOCs) / tentatively identified compounds (TIC) (surface water and groundwater GAC)
- Total petroleum hydrocarbons (TPH), extractable petroleum hydrocarbons (EPH) and polycyclic aromatic hydrocarbons (PAH) (drinking water GAC).
- Sulphate (property GAC).

Visual evidence of iridescence was reported in groundwater in BH18, BH24, BH28, BH29, BH30 and BH31 during the groundwater monitoring round. FWS Consulting state that the presence of the iridescence confirms that limited free product is present at the site. FWS Consulting identified perched water groundwater contamination (hydrocarbons) in the southern area of the site. Elevated concentrations of hydrocarbons has been proven within the shallow groundwater within the made ground present a high risk to the controlled waters (North Sea and Hudson Dock).

2.4.3 Gas Monitoring

Soil gas monitoring was carried out on 28 January 2021 at 20 locations. Assessment comprised 17 installations in Made Ground strata and 3 installations in Dolomite.

The soil gas monitoring was carried out for methane, carbon dioxide, oxygen, barometric pressure, gas flow and water level, using a Geotechnical Instruments Infra-Red Gas Analyser (GA500) with internal flow measurement and a Pro-tiger Photo-Ionisation Detector. Observations of the prevailing weather conditions and measured atmospheric pressure were also recorded.

Made ground recorded to depths of 5.2 to 10.4mbgl at the site comprised heterogeneous granular fill with occasional cohesive horizons with some putrescible or biodegradable content with slight to strong unidentified hydrocarbon (possible fuel oils) vapours. Overlying locally present sand or clay superficial deposits that overlie dolomitic limestone.

The gas monitoring undertaken to date has identified Characteristic Situation 2 conditions⁷ and, therefore, gas protection measures are required in line with current guidance.

⁷ British Standards Institution, 2019, BS 8485:2015+A1:2019. Code of practice for the design of protection measures for methane and carbon dioxide ground gases for new buildings.

3.0 Permitted Activities

3.1 Proposed Permitted Activities

Wastefront are proposing to develop and operate a new (UTR) facility to process up to 77,000 tonnes per annum (tpa) of end-of-life tyres by thermal treatment, cracking and refining to produce approximately 24,000 tpa of carbon black and 30,000 tpa of liquid products for use in tyre manufacture and synthetic fuels. Steel will be recovered as a by-product.

The key process steps and proposed technology is as follows:

- Shredding of used tyres and removal of steel wire.
- Treatment of the shredded tyres within pyrolysis reactors to produce a gaseous phase, liquid phase and carbon-rich solid residues;
- Distillation of the liquid phase to produce hydrocarbon fuels;
- Combustion of the cleaned gaseous phase to provide heat for the pyrolysis reactors;
- Combustion of residual gases from the pyrolysis and distillation processes in a thermal oxidiser to raise steam for the process;
- Separation of fine wire from the char followed by grinding and pelletising of the solid carbon-black residues; and
- Storage of intermediate and final products, feedstocks and wastes.

Phase 1 of the development will include a single pyrolysis line, distillation and liquid storage and Phase 2 will include expansion of 2 further pyrolysis lines and the hydrothermal/hydrocracking units.

The facility will fall under the lower tier of the UK Control of Major Accident Hazards (COMAH) 2015 regulations, as a result of the storage capacities for the liquid products.

3.1.1 Installation Activities

The primary purpose of the development is to produce hydrocarbon fuels and as such, it is considered that the installation would be regulated under the following primary activity listed in Schedule 1 Part 2 of the Environmental Permitting (England & Wales) Regulations 2016 (as amended) ('the EPR'):

Section 1.2 Gasification, liquefaction and refining activities

Part A(1) (f) Activities involving the pyrolysis, carbonisation, distillation, partial oxidation or other heat treatment of—

- (i) other carbonaceous material...*

otherwise than with a view to making charcoal.

3.1.2 Specified Waste Management activities

The waste management activities to be carried out at the site are detailed below:

- R3: Recycling/reclamation of organic substances which are not used as solvents (including composting and other biological transformation processes).

3.1.3 Directly Associated Activities

The following directly associated activities will be undertaken at the Site:

- shredding and sorting of non-hazardous waste;
- combustion of light distillate oil in low-speed diesel engine generators;
- char processing by separation, milling and drying;
- combustion of gases in a conventional flare in extreme emergency situations only;
- receipt, storage and handling of waste;
- discharge of liquid effluent;
- storage and handling of chemicals, oils, products and residues; and
- storage of raw materials.

3.1.4 Permitted Waste Types

Table 4 below presents the lists of wastes for the activity.

Table 4 List of Wastes

Waste Code	Description
16 01	end-of-life vehicles from different means of transport (including off-road machinery) and wastes from dismantling of end-of-life vehicles and vehicle maintenance (except 13, 14, 16 06 and 16 08)
16 01 03	End-of-life tyres

3.2 Non-Permitted Activities

There will be no non-permitted activities taking place at the site.

4.0 Current Baseline Site Conditions

Paragraph 2 of Article 22 of the IED states that:

‘where the activity involves the use, production or release of relevant hazardous substances and having regards to the possibility of soil and groundwater contamination at the site of the installation, the operator shall prepare and submit to the competent authority a baseline report before starting operation of an installation or before a permit for an installation is updated for the first time after 7th January 2013.

The baseline report shall contain the information necessary to determine the state of soil and groundwater contamination so as to make a quantified comparison with the state upon definitive cessation of activities.

The baseline report shall contain at least the following information:

Information on the present use and, where available, on past uses of the site; and

Where available, existing information on soil and groundwater measurements that reflect the state at the time the report is drawn up or, alternatively, new soil and groundwater measurements having regard to the possibility of soil and groundwater contamination by those hazardous substances to be used, produced or released by the installation concerned.’

Set out below are details of how Wastefront have met the requirements of Article 22 of the IED at the EP application stage.

The site is currently demolished to ground level and generally covered by gravel hardstanding and used to store industrial mechanical presses as reported by FWS during the 2020/2021 site investigation works. These are considered to not have a significant potential contaminate source.

Table 5
Main Stages in Preparing a Baseline Report

Stage	Activity	Objective	How Wastefront has met the requirement
1	Identify which hazardous substances are used, produced or released at the installation.	Determine whether or not hazardous substances are used, produced or released in view of deciding whether a baseline report is required. If yes: produce a list of all potential hazardous substances.	A list of potentially hazardous substances used, produced or released at the Installation is listed below. As a result of historical land use: <u>General Made Ground</u> Hydrocarbons BTEX PAH Heavy metals Sulphate Asbestos Mercury PCBs SVOCs VOCs Chlorides Phenols Alcohols Ketones Coal Tar Cyanides

Stage	Activity	Objective	How Wastefront has met the requirement
			<p>Carbon dioxide Methane <u>Magnesian Limestone Bedrock</u> - Soil gas – elevated carbon dioxide As a result of the operation of the UTR: - Gasoline - Naphtha's. - Kerosene including Jet Fuels. - Gas Oil. - Diesel. - Bio Diesel. - Heavy Fuel Oil - Fuel Gas (flammable gas). - Pyrolysis Oil (flammable gas)</p>
2	<p>Identify which of the hazardous substances from Stage 1 which, according to the evaluation by suitably qualified and experienced persons, as a result of their hazardousness in respect to toxicity, mobility, persistence and biodegradability (as well as other characteristics), are capable of contaminating soil or groundwater.</p> <p>Discard those hazardous substances that are incapable of contaminating soil or groundwater. Justify and record the decisions taken to exclude certain hazardous substances.</p>	<p>To restrict further consideration to only the relevant hazardous substances that are capable of contaminating soil or groundwater in view of deciding on the need to prepare and submit a baseline report.</p>	<p>All of the substances detailed above would be capable of contaminating soil and groundwater if there were no mitigation measures in place at the Installation.</p> <p>However, mitigation measures proposed for the Site (please refer to the Environmental Risk Assessment (ERA) and BAT-OT submitted with this EP application) will ensure that no contamination occurs as a result of the proposed activities to be undertaken at the site.</p>
3	<p>For each relevant hazardous substance brought forward from Stage 2, identify the actual possibility for soil or groundwater contamination at the site of the installation, including the probability of releases and the consequences of releases, taking particular account of:</p> <ul style="list-style-type: none"> - the quantities of each hazardous substance concerned; - how and where they are stored; - how they are to be transported around the installation - how they are used 	<p>To identify which of the hazardous substances from Stage 2 represent a potential pollution risk at the site based on the likelihood of emissions of such substances occurring.</p> <p>These are the 'relevant' hazardous substances for which information must be included in the baseline report.</p> <p>Note: Where it is found that, due to the quantities of the hazardous substances used, produced or released, that there is no possibility of soil and groundwater</p>	<p>As detailed in Stage 2, mitigation measures will be in place to protect the groundwater, surface water and soil within the installation permit boundary from contamination.</p> <p>The mitigation measures to be employed at the site are fully outlined in the ERA and BAT-OT submitted with this EP application. Please refer to these documents for full details of how the Installation will be operated to protect against fugitive emissions to water and land.</p>

Stage	Activity	Objective	How Wastefront has met the requirement
	<ul style="list-style-type: none"> - where they are emitted - measures that have been and, for new installations, will be adopted to protect soil and groundwater at the installation. 	<p>contamination a baseline report does not need to be prepared or submitted. However, in those cases it is expected that a record of such a decision, including the reasons for the decision, will be made and held by the competent authority.</p>	
4	Provide site history.	Identify potential sources which may have resulted in the relevant hazardous substances identified in Stage 3 being present on the site of the installation.	Please refer to Section 2 of this SCR for details of past land use, historic pollution incidents and baseline data.
5	Identify the site's environmental setting.	Determine where hazardous substances may go if emitted and where to look for them. Also identify the environmental media and receptors that are potentially at risk and where there are other activities in the area which release the same hazardous substances and may cause them to migrate onto the site.	<p>Please refer to sections 1.2 and 1.3 of this SCR for details of present environmental settings and the Site's surroundings.</p> <p>Please refer to the ERA included with this EP application.</p>
6	Use the results of Stages (3) to (5) to describe the site, in particular demonstrating the location, type, extent and quantity of historic pollution and potential future emissions noting the strata and groundwater bodies likely to be affected by those emissions – making links between sources of emissions, the pathways by which pollution may move and the receptors likely to be affected.	<p>Identify the location, nature and extent of existing pollution on the site and to determine which strata and groundwater bodies might be affected by such pollution.</p> <p>Compare with potential future emissions to see if areas are coincident.</p>	<p>Please refer to Appendix SCR2, SLR Phase 1 Environmental Site Assessment (May 2018) and SCR3 Groundsure Enviro Insight Report.</p> <p>Please refer to the ERA included with this EP application.</p> <p>Drawing 02 illustrates the areas of the Site designated for waste storage, handling and treatment.</p>
7	If there is sufficient information to quantify the state of soil and groundwater pollution by relevant hazardous substances on the basis of Stages (1) to (6) then go directly to Stage 8. If insufficient data exists, then intrusive investigation of the site will be required in order to gather such information.	Collect additional data as is necessary to allow a quantified assessment of soil and groundwater pollution by relevant hazardous substances.	The existing ground investigation studies as referenced in section 2.3 of this SCR enable the quantification of the state of soil and groundwater by relevant hazardous substances for the site.
8	Produce a baseline report for the installation that quantifies the state of soil and groundwater	Provide a baseline report in line with the IED.	Provided with this table and SCR.

Stage	Activity	Objective	How Wastefront has met the requirement
	pollution by relevant hazardous substances.		

4.1 Environmental Monitoring and Compliance

Monitoring of point source and fugitive emissions throughout the lifetime of the site will be undertaken in line with the conditions outlined within the EP.

Reporting of emissions will be undertaken in line with the conditions outlined in the EP.

4.2 Operation of the Installation and Management System

The Facility will be managed by technically competent personnel in accordance with site procedures and the Environmental Management System (EMS). This will ensure good practice on site and minimise environmental risk throughout the operation.

4.3 Environmental Risk Assessment

As required by EA guidance, an ERA has been undertaken and is included as part of the EP application.

The ERA is provided in section 5 of the EP application and is an assessment of the risks to the environment and to human health that may be associated with the proposed operations at the Site. The ERA reviews a 1km radius from the Site's EP boundary for potentially sensitive receptors of ecological importance along with features such as sites of cultural and natural heritage. A radius of 500m from the Site's EP boundary has been adopted for all other potentially sensitive receptors (for example, residential, commercial, industrial, agricultural and surface water receptors).

4.4 SCR Updates

Wastefront will maintain the SCR over the lifetime of the site to detail potential or recorded change to the condition of the Site.

APPENDIX SCR1: H5 TABLE

1.0 SITE DETAILS

Name of the applicant	Wastefront Sunderland Limited
Activity address	Sunderland Used Tyre Recycling (UTR) Facility, to be located at Extension Road, East End, within the Port of Sunderland, SR1 2NR (the site).
National grid reference	NZ 41364 56893

Document reference and dates for Site Condition Report at permit application and surrender	<ul style="list-style-type: none"> • Draft DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 1 of 4. Ref: 3717-14-001 Issue 1 dated 03 February 2021. • Draft DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 2 of 4 dated 03 February 2021 comprising: • FWS. Geotechnical & Environmental Consultants. Preliminary Contamination and Mining Risk Assessment on Land at Hudson Dock East, Port of Sunderland. Ref: 38990RD1/Rev01. Dated 29 January 2021. • Draft DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 3 of 4.: Dated 03 February 2021. Comprising: <ul style="list-style-type: none"> ○ FWS Geotechnical & Environmental Consultants. Phase 2 Ground Investigation on Land at Hudson Dock East, Port of Sunderland. Reference 3899OR02 dated 29 January 2021.
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Document references for site plans (including location and boundaries)	Drawing 01 Site Location Plan Drawing 02 Environmental Permit Boundary & Site Layout Drawing 03 Environmental Site Setting & Receptors Drawing 004 Cultural and natural Heritage Drawing 05 Fire Prevention & Management
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2.0 Condition of the land at permit issue

Environmental setting including: <ul style="list-style-type: none"> • geology • hydrogeology • surface waters 	Please refer to sections 1.3, 1.4 and 1.5 of the SCR for details of the environmental settings (geology, hydrology, hydrogeology) of the site and its surroundings.
Pollution history including: <ul style="list-style-type: none"> • pollution incidents that may have affected land 	Please refer to sections 2.0 of the SCR for details of the pollution incidents, potentially polluting activities, historical land uses and evidence of existing contamination of the site and, where appropriate its surroundings.

<ul style="list-style-type: none"> historical land-uses and associated contaminants any visual/olfactory evidence of existing contamination evidence of damage to pollution prevention measures 	
<p>Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)</p>	<p>Please refer to section 2.4 of the SCR for a summary of Ground Investigations</p>
<p>Baseline soil and groundwater reference data</p>	<p>Appendix SCR2: Draft DTA Report: Site Investigation Volume 2 of 4 (Phase 1 Site Setting)</p> <p>Draft DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 2 of 4 dated 03 February 2021 comprising:</p> <ul style="list-style-type: none"> FWS. Geotechnical & Environmental Consultants. Preliminary Contamination and Mining Risk Assessment on Land at Hudson Dock East, Port of Sunderland. Ref: 38990RD1/Rev01. Dated 29 January 2021. <p>Appendix SCR3: Draft DTA Report: Site Investigation Volume 3 of 4 (Intrusive Investigation)</p> <p>Draft DTA Consulting Engineers. Site Investigation for the Wastefront Development at the Port of Sunderland Volume 3 of 4.: Dated 03 February 2021. Comprising:</p> <ul style="list-style-type: none"> FWS Geotechnical & Environmental Consultants. Phase 2 Ground Investigation on Land at Hudson Dock East, Port of Sunderland. Reference 3899OR02 dated 29 January 2021.
<p>Supporting information</p>	<ul style="list-style-type: none"> SCR – Ref: 416.11075.00004/SCR ERA – Ref: 416.11075.00004/ERA Appendix SCR2: Draft DTA Report: Site Investigation Volume 2 of 4 (Phase 1 Site Setting) Appendix SCR3: Draft DTA Report: Site Investigation Volume 3 of 4 (Intrusive Investigation)

3.0 Permitted activities

<p>Permitted activities</p>	<p>Please refer to section 3.0 of the SCR for a description of the proposed permitted activities for the site.</p>
<p>Non-permitted activities undertaken</p>	<p>Not applicable.</p>

<p>Document references for:</p> <ul style="list-style-type: none">• plan showing activity layout; and• environmental assessment. <p>risk</p>	<ul style="list-style-type: none">• Drawing 001 Site Location Plan• Drawing 002 Environmental Permit Boundary & Site Layout• Drawing 003 Environmental Site Setting & Receptors Drawing 004 Cultural and natural Heritage• Drawing 005 Fire Prevention & Management• ERA – Ref: 416.11075.00004/ERA
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4.0 Changes to the activity

Have there been any changes to the activity boundary?	If yes, provide a plan showing the changes to the activity boundary.
Have there been any changes to the permitted activities?	If yes, provide a description of the changes to the permitted activities
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	If yes, list of them
Checklist of supporting information	<ul style="list-style-type: none"> • Plan showing any changes to the boundary (where relevant) • Description of the changes to the permitted activities (where relevant) • List of 'dangerous substances' used/produced by the permitted activities that were not identified in the Application Site Condition Report (where relevant)

5.0 Measures taken to protect land

Use records that you collected during the life of the permit to summarise whether pollution prevention measures worked. If you cannot, you need to collect land and/or groundwater data to assess whether the land has deteriorated.

Checklist of supporting information	<ul style="list-style-type: none"> • Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures
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6.0 Pollution incidents that may have had an impact on land, and their remediation

Summarise any pollution incidents that may have damaged the land. Describe how you investigated and remedied each one. If you cannot, you need to collect land and/or groundwater reference data to assess whether the land has deteriorated while you have been there.

Checklist of supporting information	<ul style="list-style-type: none"> • Records of pollution incidents that may have impacted on land • Records of their investigation and remediation
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7.0 Soil gas and water quality monitoring (where undertaken)

Provide details of any soil gas and/or water monitoring you did. Include a summary of the findings. Say whether it shows that the land deteriorated as a result of the permitted activities. If it did, outline how you investigated and remedied this.

Checklist of supporting information

- Description of soil gas and/or water monitoring undertaken
- Monitoring results (including graphs)

APPENDIX SCR2

Phase 1 Site Investigation (attached separately)

APPENDIX SCR3: Site Investigation (attached separately)

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