Barking Metal Recycling Facility, Environmental Permit Variation Application

Baseline Site Condition Report

S Norton & Co Limited

Prepared by:

SLR Consulting Limited

3rd Floor, Brew House, Jacob Street, Tower Hill,
Bristol, BS2 0EQ

LR Project No.: 416.064707.00001

Client Reference No: 64371

5 September 2023

Revision: 01

Basis of Report

This document has been prepared by SLR Consulting Limited (SLR) with reasonable skill, care and diligence, and taking account of the timescales and resources devoted to it by agreement with S Norton & Co Limited (the Client) as part or all of the services it has been appointed by the Client to carry out. It is subject to the terms and conditions of that appointment.

SLR shall not be liable for the use of or reliance on any information, advice, recommendations and opinions in this document for any purpose by any person other than the Client. Reliance may be granted to a third party only in the event that SLR and the third party have executed a reliance agreement or collateral warranty.

Information reported herein may be based on the interpretation of public domain data collected by SLR, and/or information supplied by the Client and/or its other advisors and associates. These data have been accepted in good faith as being accurate and valid.

The copyright and intellectual property in all drawings, reports, specifications, bills of quantities, calculations and other information set out in this report remain vested in SLR unless the terms of appointment state otherwise.

This document may contain information of a specialised and/or highly technical nature and the Client is advised to seek clarification on any elements which may be unclear to it.

Information, advice, recommendations and opinions in this document should only be relied upon in the context of the whole document and any documents referenced explicitly herein and should then only be used within the context of the appointment.

Table of Contents

Tables in Text

Appendices

1.0 Introduction

SLR Consulting Ltd (SLR) has been instructed by S. Norton & Co Limited (S Norton) to prepare an Environmental Permit (EP) variation application for the Metal Recycling Facility (Ref: EPR/CB3807HV) (the Permit) for their Barking facility located at 72/76 River Road, Barking, Essex, IG11 0DS (the Site). The proposed changes include additional waste codes, the storage of hazardous waste types above 50 tonnes at any one time as a new installation activity and the processing of Large Domestic Appliances (LDA) as a new WEEE treatment activity.

A separate Standard Rules EP for the adjacent area to the Site (the Western Area) was transferred to S Norton in February 2019 (Ref: EPR/DB3639RX). The Western Area is already included within the marked 'Site Plan' in Schedule 7 of the Permit, and both permits are authorised to carry out the receipt, storage and handling/processing of ferrous and non-ferrous (NF) material for recovery, however, the two permits were not formally consolidated. Therefore, in addition to the EP variation for the Permit, which will be permitted as an Industrial Emissions Directive (IED) 'installation', S Norton wish to consolidate the two EPs into one to cover the entire metal recycling operations.

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 H5 guidance[1] with regards to the requirements of a baseline report to meet the requirements of Article 22 (2) of IED. A completed H5 template is included as Appendix 01.

The objective of the SCR is to record and describe the condition of the land at the site at the time of the permit application. The SCR provides a point of reference and baseline environmental data so that when the permit 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 ensure that the condition of the land is in a 'satisfactory state' on surrender of the permit.

A previous SCR was prepared in March 2017 by Axion Consulting (Site Condition Report (Axion Polymers, March 2017)) as part of the previous permit variation that was completed in March 2018. The SCR template in Appendix 01 of this report that will supersede the previous SCR from March 2017 has been completed with information from that previous SCR (included in Appendix 02 of this report) and with the proposed changes for both permits (the Site and the Western Area) to date. This includes the proposed change in activities and consolidation of the 2 permits into 1. It also includes all the key sources listed below.

1.1.1 Sources

This SCR has been informed by a desk-based study carried out for the Site and Western Area by SLR which references the following key sources:

- Appendix 02: SCR (Axion Consulting, March 2017). This will be superseded by the new updated SCR template in Appendix 01
- Appendix 03: Phase 1 Site Survey and Phase 2 Site Investigation Report (Terragen Environmental Consultants, August 2011) (the report includes an excerpt from Contamination Investigation Report (JPB, Circa 1997))
- Appendix 04: Phase 2 Geo-environmental Investigation and Assessment Report ref: 8860G-WML-00-XX RP-G-001 (WML Consulting, July 2020)

[1] EA Guidance; Site Condition Report – guidance and templates, Version 3, May 2013.

- Appendix 05: Remediation Strategy For the Barking Yard Redevelopment Report ref: 8860G-WML-00-XX RP-G-002 (WML Consulting, November 2020)
- Appendix 06: Detailed Unexploded Ordnance Risk Assessment (1st Line Defence, April 2020)

1.2 Present Use of the Site

1.2.1 Site Location

The Site is centred on National Grid Reference TQ 45852 81666, located at 72-76 River Road, Barking, Essex and is approximately 4.3km to the south west of Dagenham town centre, and 2.86km to the south east of Barking town centre.

The currently separately permitted Western Area is already included within the marked 'Site Plan' in Schedule 7 of the Permit. The Site including the Western Area is circa 1.87 hectares and roughly rectangular with a narrow entrance/exit section 100m off and leading to River Road leading to River Road. The site location is presented in Drawing 01.

There is one statutory protected Local Nature Reserve (LWR) and one Local Wildlife Site (LWS) within 2km of the Site.

1.2.2 Current on-Site Land Use

The Site is permitted as a metal recycling facility to process ferrous and non-ferrous (NF) metal and is authorised to carry out the receipt, storage and handling of ferrous and NF metals for recovery and the shearing and cutting of oversize ferrous metal to specification.

The Western Area is a separately permitted site also owned by S Norton and located adjacent to the Site that also processes ferrous and NF metal.

The Western Area underwent redeveloped in 2021 with a number of changes within its existing site, which included the following:

- Installation of a new reinforced concrete yard slab;
- Modifications to below ground drainage systems (including two new manhole to allow for drainage of surface water);
- Installation of new surface-mounted weighbridge;
- Construction of NF building with adjacent canopy covered storage area ;
- Construction of new workshop building, incorporating overhead runway crane;
- Installation of new steel material storage bins; and
- Installation of new steel push wall.

1.2.3 Current Surrounding Land Use

The Site and Western Area are located within a predominantly industrial area which has a recorded history of industrial use for over 120 years and is still significantly industrial and is bordered to the north and east by two other waste processing sites.

Refer to the previous SCR (Axion Polymers, March 2017) for a record of the surrounding land use.

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

Table 1-1: Surrounding Land Uses

Boundary	Description
North	Hospitality (restaurants), commercial and industrial properties, local road network (River Road) and an open space with small surface water feature beyond
East	Commercial and industrial properties, local road network (River Road)
South	River Thames
West	Industrial property adjacent. Green open space (Creekmouth Open Space), the River Roding Confluence, Barking Creek Barrier (tidal barrier) and Beckton Sewage Treatment Works further beyond

1.3 Environmental Setting

1.3.1 Geology

A review of the British Geological Survey (BGS) map[2] reveals that the site is underlain by bedrock of Thanet Formation, comprising of sedimentary rock which formed between 59.2 and 56 million years ago during the Palaeogene period.

1.3.2 Hydrogeology

The bedrock underlying the Site is classified as an unproductive Aquifer. The superficial deposits are also classed as unproductive on the Multi-Agency Information for the Countryside (MAGIC)[3] website.

There are no Source Protection Zones (SPZs) within 2km of the site boundary.

1.3.3 Hydrology

The Groundwater Vulnerability layer on the MAGIC map reveals that the Site lies within an area of Medium – High soluble rock risk groundwater vulnerability. MAGIC map also reveals the Site lies within an area that is considered Soluble Rock Risk.

The Site lies within a Flood Zone 4 and therefore has a high probability of flooding from rivers and the sea[4].

1.4 Environmental Record Review

The SCR (Axion Polymers, March 2017) noted that:

- Waste and Landfill – There are 31 licensed waste treatment, transfer or disposal sites within 1.5km relating to a range of waste recycling and transfer stations.
- Landfill – There are no operational landfill sites within 1km. There are seven historic landfill sites within 1km, the closets of which relating to the Beckton Sewage Treatment Works (STW) 350m south west for the deposit of inert and liquid sludge waste (permit was surrender in 2007).
- Recent industrial land use – There is a historic integrated pollution control (IPC) authorisation listed within 500m, relating to chemical fertiliser production at the Site itself by Seabright Industries Limited (Seabright), which was revoked in 1995.

2 British Geological Survey, Available at www.bgs.ac.uk, accessed in March 2023

3 Multi-Agency Information for the Countryside – Available at: http://www.magic.gov.uk, accessed in March 2023

4 Flood Map for Planning https://flood-map-for-planning.service.gov.uk, accessed March 2023

- Licensed industrial activities – There are 18 Part A(2) and Part B activities and enforcements within 500m of the site for a wide range of industrial activities.
- Sites determined as Contaminated Land under Part 2A EPA 1990 – No determined sites within 500m of the site.
- Licensed pollutant (discharge) release – There are 26 within 500m of the Site, 23 relate to trade discharges, sewage discharges and process water to the Thames and Barking Creek from the Beckton STW to the west of Barking Creek. The remaining two consents relate to trade discharges to the River Roding and Barking Creek to the north west of the Site.
- Pollution inventory substances – There are four List 1 dangerous substances inventory sites within 500m of the site, three of which relate to Beckton STW to the west and north west of the Site and one relates to Nuplex Resins circa 290m to the west. There are 39 List 2 dangerous substances inventory sites within 500m, all of which are sited 290m to the west and relate to a wide range of industrial activities and a wide range of authorised substances.

2.0 Pollution History on Barking Facility

2.1 Pollution Incidents

The SCR prepared (March 2017) by Axion Consulting includes a summary of pollution incidents that may have impacted the Site either directly on-site or its surroundings, i.e., off-site.

There were seven recorded pollution incidents off-site within 250m of the Site. The closest of which relates to a fire incident in 2003 and specifically fire-fighting run-off circa 55m to the north of the Site.

2.1.1 The Site

There have been no pollution incidents associated or recorded at the Site whilst the site has been under S Norton's control.

2.1.2 The Western Area

There have been no pollution incidents associated or recorded at the Western Area whilst the site has been under S Norton's control.

2.2 Historic Site Activities

The following section presents a summary of the history of the Site that includes the land of the separately permitted and adjacent Western Area and its surroundings.

2.2.1 Summary of Historic Site Activities On-Site

It is understood from the Phase 1 and Phase 2 Report (Terragen Environmental Consultants, 2011; referred to as 'TGEN, 2011 report') that following the revocation of the permit in 1995 for the manufacture of chemical fertilisers, a new Waste Management Licence (WML) was issued to Dockgrange Limited to operate a waste recycling centre on the land of the Site and Western Area. After 2011, the existing WML was surrendered and two new EPs were issued to two different operators; Humphries Limited (Humphries) and Cronifer UK Limited (Cronifer) to operate separate scrap metal recycling facilities at the Site and the adjacent Western Area. The EP for the Western Area was transferred from Cronifer to S Norton in 2019.

Refer to Site Condition Report (Axion Polymers, March 2017) that is included in Appendix 02 of this report for a detailed summary of the historic site activities on-Site.

Due to the facilities location within an area known to have suffered significant German bombing during WWII, a Detailed Unexploded Ordnance (UXO) Risk Assessment was undertaken. Refer to the Detailed Unexploded Ordnance Risk Assessment (1st Line Defence, April 2020) included in Appendix 06 for a detailed summary of incidents within and immediately adjacent to the facility, including bomb strikes in the centre of the site boundary and to the immediate north and north west.

2.2.2 Summary of Historic Site Activities Off-Site

Refer to Site Condition Report (Axion Polymers, March 2017) that is included in Appendix 02 of this report for a detailed summary of the historic site activities off-Site.

2.2.3 Evidence for Historic Contamination

A Phase 1 and Phase 2 contaminated land investigation and associated report (Contamination Investigation Report (JPB, Circa 1997) is associated with the land that is now the Site and which included the land of the Western Area on its permit when Seabright was operating.

A copy of the report is not available, however an excerpt of the circa 1997 report can be found in Phase 1 Site Survey and Phase 2 Site Investigation Report (TGEN, 2011). The report is included in Appendix 03 of this SCR.

Four boreholes were excavated on the land of the Site sometime during 2011 to support the ground investigation works associated with the JPB Report (Circa 1997) and TGEN noted:

- '*In general, the concentrations of potential contaminants returned by the four samples would not be considered indicative of significant contamination with the exception of elevated concentrations of arsenic, lead, copper, zinc, polyaromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH) in Sample 1'*.
- '*The risk attributed to the potential for contamination to exist at the Site in its current state is considered to be moderate*'.

Due to the presence of potential sources of contamination, sensitive receptors and plausible pathways between the two, TGEN carried out a Phase 2 site investigation and Tier 2 Ground Quantitative Risk Assessment (GQRA) (included in Appendix 03 of this SCR) in order to confirm the qualitative assessment and as a baseline for future investigations to be compared against.

The TGEN, 2011 report noted:

'It should be noted that whilst contamination has been encountered at the site as part of this investigation it is likely based on comparisons to the findings of the previous report carried out by JPB in circa 1998, that the contamination is largely due to activities at the site and surrounds (e.g. chemical, fertiliser and manure manufacture, neighbouring industrial uses and STW) prior to the activities authorised by the existing WML (waste treatment and transfer station).'

The report continues:

'*Many of the contaminants particularly in the groundwater would be considered as ubiquitous, entering from a variety of point and diffuse sources within industrial and urbanised areas such as London. Indeed, such concentrations may well be viewed as endemic in the vicinity of the site. It would however be necessary to substantiate this preliminary conclusion by either obtaining existing groundwater data/information from*

monitoring of nearby boreholes and/or excavating, installing and sampling groundwater monitoring boreholes up-hydraulic gradient of the site.'

2.2.3.1 The Western Area

Axion Polymers Ltd (a sister company of S Norton) commissioned a Geo-environmental Investigation (Phase 2 Geotechnical Report (WML Consulting, July 2020)) (included as Appendix 04 in this SCR) on the Western Area prior to the construction activity that commenced in 2020. Intrusive investigations were undertaken on the land of the Western Area to aid verification of the preliminary site conceptual model and to confirm the anticipated low environmental risk.

2.2.3.2 Potential Sources of contamination

The Site, including the land of the separately permitted Western Area and its surrounds have a long history of potentially contaminative uses that spans for the previous 120 years, including chemical and fertiliser manufacture, and scrap metal recycling.

The Conceptual Site Model in the TGEN, 2011 report noted that there are potential low and low/moderate risks of pollutant linkages between leachable mobile contaminants and made ground across the Site, including:

- Downward leaching and lateral migration to controlled water from metals, non-metals and PAH to secondary and principal aquifers, River Thames and River Roding (low risk)
- Impairment of potable water through permeation, structural or physical deterioration or contamination from metals, non-metals organic compounds to water supply pipes (low/moderate risk)

The TGEN, 2011 report identified the following:

'Potential sources of contamination associated with the historic use at the Site:

- *On site chemical and fertiliser manufacture*
- *On site scrap metal recycling*
- *Wide range of off-site potentially contaminative industrial uses (including STW, manure manufacture, waste treatment, transfer and disposal facilities etc.)'*

The TGEN, 2011 report also reviewed the list of potential contaminates and consider:

'The following potential contaminates of concern (PCoC):

- *Heavy metals (including arsenic, copper, lead, zinc)*
- *Total petroleum hydrocarbons (TPH)*
- *Polyaromatic hydrocarbons (PAH)*
- *Volatile organic compounds (VOC)*
- *Acids/alkalis (pH)*
- *Chemical oxygen demand (COD)/total organic carbon (TOC)*
- *Ammonia*
- *Sulphate*
- *Phosphate*
- *Cyanide*

- *Nitrate*
- *Chloride*
- *Asbestos'*

Based on the review and conclusions of the above reports, there is, therefore, a high potential for the presence of historical industrial pollution at the Site and in the surrounding area.

The most likely / significant potential contaminant linkages appear to be:

- S1 – Potential Harm to Made Ground (from potential contaminants associated from the historic industrial activities);
- S2 – Potential Harm to the Surface Water (horizontal migration of impacted perched water to surface water receptors);
- S3 – Potential Risks to Health or the Environment from Construction Materials Exposure (direct contact of chemical contaminants with subsurface building materials); and
- S4 – Potential Risks to Health or the Environment from Unidentified Sources.

2.3 Baseline Data

2.3.1 Ground Investigation / Monitoring

During ground investigation on the Site (which included the Western Area) in 2011, monitoring standpipes were installed at 4 of the exploratory hole locations (BH1, BH2, BH3 and BH5) (refer to Phase 1 Site Survey and Phase 2 Site Investigation Report (TGEN, 2011). Each groundwater sample was tested for a broad screen of potential contaminants.

Leachate testing was undertaken on 3 samples of made ground that returned elevated total concentrations of a range of metals, TPH and PAH.

Groundwater samples were recovered after an appropriate period of settlement from the 4 monitoring standpipes (groundwater results are presented in Appendix Q of the TGEN, 2011 report). A number of parameters were found to exceed their Tier 2 generic assessment criteria (GAC). The Phase 1 and Phase 2 Report (TGEN, 2011) concluded that:

- 'The *results of the leachate and groundwater testing would appear to corroborate the findings of the JPB contamination investigation report in that there was in all likelihood significant contamination present within the soils below the site as a result of former activities (i.e. manufacture of fertilisers, insecticides, sulphuric acid and manure etc.) at and in the immediate vicinity of the site prior to the commencement of former and current waste recycling activities.'*
- *'Without the results of the previous site investigation it is not possible to provide a definitive statement as to whether the former and current waste recycling activities have had a detrimental impact on controlled waters, although it would appear that the quality of controlled water was poor prior to the commencement of waste recycling activities.'*
- *'In many cases, the concentrations of contaminants was significantly higher in the groundwater than in the leachates. This suggests that the contaminants present in the groundwater, at least in part, present as a result of off site sources. The only significant exception is for several PAH compounds that are present at elevated concentrations in both the leachates produced from the soils below the site and in the groundwater.'*

2.3.2 Intrusive Ground Investigations

Intrusive ground investigations were carried out as part of Phase 2 ground investigation on the land that is now the Site and which included the land of the Western Area on its permit when Seabright was operating. A copy of the JPB Report (Circa 1997) and its findings is not available, however TGEN carried out intrusive ground investigations in 2011 to support the ground investigation works associated with the JPB Report (Circa 1997). TGEN noted:

- '*In general, the concentrations of potential contaminants returned by the four samples would not be considered indicative of significant contamination with the exception of elevated concentrations of arsenic, lead, copper, zinc, polyaromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH) in Sample 1'*.
- '*The risk attributed to the potential for contamination to exist at the Site in its current state is considered to be moderate*'.

Due to the presence of potential sources of contamination, sensitive receptors and plausible pathways between the two, TGEN carried out a Phase 2 site investigation and Tier 2 Ground Quantitative Risk Assessment (GQRA) in order to confirm the qualitative assessment, refine the preliminary Conceptual Site Model (CMS) and to serve as an assessment against previous investigations undertaken at the Site and a baseline for future investigations to be compared against.

Conclusions from the Phase 2 site investigation and GQRA are detailed in the Phase 1 and Phase 2 Report (TGEN, 2011), with the report noting:

- *'The findings of this report can be used to determine the current baseline conditions at the site, to which reference should be made at permit surrender. Where necessary the site should be returned to the baseline conditions through appropriate remediation. It is our opinion however that at least 2 further rounds of groundwater monitoring and sampling should be undertaken to provide a more baseline dataset.'*

2.3.2.1 Western Area

In addition, Axion Polymers Ltd (a sister company of S Norton) commissioned a Geo-environmental Investigation (Phase 2 Geotechnical Report (WML Consulting, July 2020)) (included as Appendix 04 in this SCR) on the Western Area prior to the construction activity that commenced in 2020. Intrusive investigations were undertaken on the land of the Western Area to aid verification of the preliminary site conceptual model and to confirm the anticipated low environmental risk.

The Phase 2 Geotechnical Report (WML Consulting, July 2020) (included as Appendix 04) noted that:

'*Prior to its use as a recycling facility, the site was historically part of a large 'Chemical Works' with associated buildings. The likelihood of significant ground contamination sources being present as a result of the site's past use cannot therefore be discounted'*; however, '*No visual and/or olfactory evidence of significant ground contamination was identified within the exploratory holes during the investigation.'*

3.0 Permitted Activities

3.1 Existing Activities

The Site is permitted as a metal recycling facility to process ferrous and NF metals. The Western Area is a separately permitted facility also owned by S Norton and located adjacent to the Site and similarly processes ferrous and NF metal.

Both permits are authorised to carry out the receipt, storage and handling/processing of ferrous and NF material for recovery. Some waste materials received are exposed to treatment processes to facilitate size reduction, densification and to improve the metal content to a required quality for charging furnaces at a melter (located off-site). These are typically ferrous metals including Heavy Metal Steel (HMS) and plate & girder (P&G). The Western Area of the Site is used predominantly for the handling and processing of NF materials in the warehouse buildings. Site activities in the Western Area include sorting and grading of NF wastes, including the sorting of batteries into waste types.

The Western Area which is to be consolidated as part of this permit variation already includes the sorting and handling of hazardous waste.

As part of the permit variation in 2018, the annual tonnage of waste accepted at the Site increased from 75,000 tonnes to 200,000 tonnes per annum, facilitated by the installation of a new shear. The following changes were also made:

- Construction of steel wall alongside the eastern and northern site boundary, consisting of a 430mm thick steel barrier 5 metres high comprising 15mm steel plate;
- 2 temporary office buildings; and
- 100,000 litre water tank.

3.1.1 Permitted Activities

The proposed changes and consolidation of the two permits will comprise of listed activities that are already included in Table S1.1 listed under Schedule 1 of the Permit in accordance with Schedule 9 of the Environmental Permitting (England & Wales) Regulation 2016 (as amended):

- **R4**: Recycling/reclamation of metals and metal compounds
- **R5:** Recycling/reclamation of other inorganic compounds
- **R13**: Storage of waste pending any of the operations numbered R1 to R12 (excluding temporary storage, pending collection on the site where it is produced).

3.2 Proposed Activities

3.2.1 Consolidation of the 2 permits

A separate EP for the Western Area adjacent to the Site was transferred to S Norton in February 2019 (Ref: EPR/DB3639RX) and S Norton wish to consolidate this with the main Site so that there is only one EP to cover the entire metal recycling operations. Therefore, this variation application seeks to consolidate the bespoke environmental permit (Ref: EPR/CB3807HV) with the adjacent Standard Rules permit (Ref: EPR/DB3639RX) into one Installation permit. This will be achieved by varying the designated bespoke permit to include the Standard Rules permit.

The Western Area already includes activities for the sorting and handling of hazardous waste and the area will continue to be used predominantly for the handling and processing of NF materials in the open structured warehouse buildings. There is no change to the existing activities under the adjacent permit apart from the sorting and handling of some additional waste types (see below section 3.2.2 and 3.2.3).

As a result of the consolidation of the 2 permits, S Norton wish for the tonnages of the 2 EPs to be added together. Therefore, the new combined tonnage of the consolidated permit will be 275,000 tonnes.

3.2.2 Additional Waste Types

S Norton require some new waste codes to be included in the permit. Table 3-1 below presents the additional lists of wastes that will be accepted as part of the proposed changes in the permit.

Both permits that are being consolidated as part of this EP variation are already permitted to handle NF metals and have appropriate provisions in place for safe storage and handling. Operatives will ensure the different types of waste will not be mixed and are segregated appropriately. Operating techniques in accordance with Best Available Techniques (BAT) are included in the BAT-OT document submitted with this application (SLR ref. 416.064707.00001_BATOT).

These additional waste types will only be subject to sorting and grading, with the exception of LDA which will be sorted and treated in the existing shear as described further below.

Table 3-1: List of Additional waste types

Waste Description	EWC Code	EWC Code Description
Cast iron brake discs	16 01 12	brake pads other than those mentioned in 16 01 11
ELV wiring looms	16 01 21*	hazardous components other than those mentioned in 16 01 07 to 16 01 11 and 16 01 13 and 16 01 14
Electric motors	16 02 16	components removed from discarded equipment other than those mentioned in 16 02 15
Cables containing hazardous substances	17 04 10*	cables containing oil, coal tar and other hazardous substances
LDAs	20 01 36	discarded electrical and electronic equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35

3.2.3 Temporary Storage of Hazardous Waste

The proposed change in the permit to store hazardous waste types above 50 tonnes at any one time will require facility to be permitted and regulated as an IED 'installation' rather than a waste operation under *Section 5.6 Part A(1) (a) Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections…5.3*

3.2.4 Processing of WEEE

S Norton also require the additional activity to process WEEE (in the form of non-hazardous LDAs) to make them easier to handle, store and transport in order to facilitate their onward recovery. Following processing through the LeFort shear the processed LDA's will be transferred into a separate storage bay for temporary storage prior to bulk transport to S Norton's AATF site in Liverpool where it is treated through a shredding and downstream separation process.

3.3 Non-Permitted Activities

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

4.0 Current Baseline Site Conditions

The EA H5 SCR guidance (April 2013) states that:

Section 3.1 For new installations subject to the IED

These are installations carrying out any of the activities listed in Part 2 of Schedule 1 to the EPR 2010 (including as amended in 2013 to transpose the IED) for which an application was submitted after 7 January 2013.

> *If your proposed activity involves the use, production or release of RHS you must submit baseline data as part of your application SCR. We recommend that you to carry out baseline monitoring of groundwater and soil and submit these results in your report. Alternatively you could use good quality existing data, if it is available. This will quantify the levels of pollutants present prior to you starting operation, which you will compare to the levels you find when you cease carrying out the activity and wish to surrender your permit. However, if you choose not to submit any monitoring data you will be accepting that there is zero pre-existing contamination and accepting the risk that you may be required to clean up any pre-existing contamination when you surrender your permit.*

Set out below are details of how S Norton have met the baseline data requirements, which detail *monitoring of groundwater and soil.*

The Site is already covered by concrete surfacing and operates within a heavily industrialised and commercial area in Barking. These are to be considered in the context of the potential for the use, production or release of relevant hazardous substances.

Table 4-1: Main Stages in Preparing a Baseline Report

Stage	Activity	Objective	How the requirements have been met at the site
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 the existing and proposed operation of the Metal Recycling Facility:** • Heavy metals; • Total petroleum hydrocarbons (TPH); and • Polyaromatic hydrocarbons (PAH).
2	Identify which of the hazardous substances from Stage 1 which, according to the evaluation by suitably qualified and experiences 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. Discard those hazardous substances that are incapable of contaminating soil or groundwater. Justify and record the decisions taken to exclude certain hazardous substances.	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.	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. However, existing mitigation measures in place for the Site (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 existing or proposed activities to be undertaken at the site.

Stage	Activity	Objective	How the requirements have been met at the site
3	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: - 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 - where they are emitted - measures that have been and, for new installations, will be adopted to protect soil and groundwater at the installation.	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. **These are the 'relevant' hazardous substances for which information must be included in the baseline report.** 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 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.	As detailed in Stage 2, existing mitigation measures are in place to protect the groundwater, surface water and soil within the installation permit boundary from contamination. 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.
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.	Four boreholes were excavated on the land of the Site sometime during 2011 to support the ground investigation works associated with the JPB Report (Circa 1997) and TGEN noted in their report included as Appendix 03: '*In general, the concentrations of potential contaminants returned by the four samples would not be considered indicative of significant contamination with the exception of elevated concentrations of arsenic, lead, copper, zinc, polyaromatic hydrocarbons (PAH) and total petroleum*

Stage	Activity	Objective	How the requirements have been met at the site
			hydrocarbons (TPH) in Sample 1'. Therefore, all potentially hazardous substances associated with existing and proposed operation of the Metal Recycling Facility have been identified on site and associated with historical on site and potentially contaminative industrial uses and these are: • Heavy metals (including arsenic, copper, lead and zinc); • Total petroleum hydrocarbons (TPH); and • Polyaromatic hydrocarbons (PAH). **More generally, the TGEN, 2011 report list all the following as Potential Contaminates of Concern (PCoC) as a result of historical on site and potentially contaminative industrial uses:** • Heavy metals (including arsenic, copper, lead and zinc); • Polyaromatic hydrocarbons (PAH); • Total petroleum hydrocarbons (TPH); • Volatile organic compounds (VOC); • Acid/alkalis (pH) • Chemical oxygen demand (COD/total organic carbon (TOC); • Ammonia; • Sulphate; • Phosphate; • Cyanide; • Nitrate; • Chloride; and • Asbestos. Please refer to Section 2 of this SCR for details of past land use, historic pollution incidents and baseline data.

Stage	Activity	Objective	How the requirements have been met at the site
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.	Please refer to sections 1.2 and 1.3 of this SCR for details of present environmental settings and the Site's surroundings. Refer to the ERA included with this EP application.
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.	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. Compare with potential future emissions to see if areas are coincident.	Please refer to Section 2 of this SCR for details of past land use, historic pollution incidents, and potential source-pathway-receptor linkages. Drawing 02 illustrates the areas of the Site subject to waste storage, handling and treatment.
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.	
8	Produce a baseline report for the installation that quantifies the state of soil and groundwater pollution by relevant hazardous substances.	Provide a baseline report in line with the IED.	Please refer to Section 2 of this SCR for details of past land use, historic pollution incidents, potential source-pathway-receptor linkages, and baseline data.

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 Site and Management System

The Site will continue to be operated in accordance with an Integrated Management System ('IMS') which is ISO 14001:2015 accredited. In addition, S Norton will continue to operate to a Competence Management System under the approved industry scheme with Energy Utilities (EU) Skills Group. The scheme is approved by Defra and the Welsh Government as a method of demonstrating technical competence of permitted sites where that operator shall comply with the requirements of an approved competence scheme.

These will continue to 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 permit application.

The ERA is provided in Section 6 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 2km radius from the Site's EP boundary for potentially sensitive receptors of ecological importance 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

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

Sections 1 to 3 of the EA's SCR template have been completed from the preparation of the SCR prepared in March 2017, which comprises the following:

- site details;
- condition of the land at permit issue;
    - geology;
    - hydrogeology;
    - hydrology;
    - pollution history;
    - evidence of historic contamination; and
- permitted activities.

Section 4 of the SCR template has been completed to incorporate the proposed changes associated with the EP variation application including consolidation of the two EPs so that there is only one EP to cover the metal recycling operation, acceptance of new additional waste types and the processing of LDAs.

Sections 4 to 7 of the SCR template will continue to be maintained during the life of the permit.

Sections 8 to 10 will be completed and submitted in support of the application to surrender the permit.

Appendix 01. HS Table

Barking Metal Recycling Facility, Environmental Permit Variation Application

Baseline Site Condition Report

S Norton & Co Limited

LR Project No.: 416.064707.00001

5 September 2023

1.0 SITE DETAILS	
Name of the applicant	S. Norton & Co Limited
Activity address	S Norton & Co Limited 62/66 River Road Barking Essex IG11 0DS
National grid reference	TQ 45852 81666 (NGR of the Western Area – TQ 45825 81667)

Document reference and dates for Site Condition Report at permit application and surrender	This SCR has been informed significantly by the Site Condition Report (Axion Polymers, March 2017) and by a review of a number of Risk Assessments carried out for the Site including the Western Area by SLR which references the following key sources: • SCR (Axion Polymers, March 2017) • Phase 1 Site Survey and Phase 2 Site Investigation Report (TGEN, August 2011) (the report includes an excerpt from Contamination Investigation Report (JPB, Circa 1997)) • Phase 2 Geo-environmental Investigation and Assessment Report ref: 8860G-WML-00-XX RP-G-001 (WML Consulting, July 2020) • Remediation Strategy For the Barking Yard Redevelopment Report ref: 8860G-WML-00-XX RP-G-002 (WML Consulting, November 2020) • Detailed Unexploded Ordnance Risk Assessment (1st Line Defence, April 2020)

Document references for site plans (including location and boundaries)	Drawing 01 – Site Location Drawing 02 – Site Layout and Emission Points Drawing 03 – Sources, Pathways and Receptors Drawing 04 – Cultural and Natural Heritage Drawing 05 – Fire Prevention & Management

2.0 CONDITON OF THE LAND AT PERMIT ISSUE	
Environmental setting including: • geology • hydrogeology • surface waters	The metal recycling facility is located at Barking; National Grid Reference TQ 45852 81666. The Site and Western Area is bounded to the south by the River Thames and to the north and east by existing industrial premises off River Road and to the west by open ground of both a hard surfaced and grassland nature. The River Roding and Barking Creek Barrier lie approximately 120m to the west. The Site is accessed via a track approximately 100m off River Road which is included in the permitted area. The majority of the Barking Riverside development will be located to the east of the Site and will lie more than 500m from the site boundary.

2.0 CONDITON OF THE LAND AT PERMIT ISSUE	
	A review of the British Geological Survey (BGS) map[5] reveals that the Site is underlain by bedrock of Thanet Formation, comprising of sedimentary rock which formed between 59.2 and 56 million years ago during the Palaeogene period. The Site lies within a Flood Zone 4 and therefore has a high probability of flooding from rivers and the sea[6]. The superficial deposits are classified as an unproductive Aquifer while the bedrock is also classified as an unproductive Aquifer. The Groundwater Vulnerability layer on the MAGIC map reveals that the Site lies within an area of Medium – High soluble rock risk groundwater vulnerability. Please refer to sections 1.3, 1.4 and 1.5 of the SCR for further details of the environmental settings (geology, hydrology, hydrogeology) of the site and its surroundings.
Pollution history including: • pollution incidents that may have affected land • historical land-uses and associated contaminants • any visual/olfactory evidence of existing contamination • evidence of damage to pollution prevention measures	**4.4.1.1 Pollution History** The SCR prepared by Axion Consulting (March 2017) for the Site as part of the 2018 EP variation application includes a summary of pollution incidents that may have impacted the Site either directly on-site or its surrounds. On site: There are no recorded pollution incidents within the site boundary that may have affected the land beneath the Site including the Western Area whilst both sites have been under S Norton's control. Off site: There were seven recorded pollution incidents off-site within 250m of the Site. The closest of which relates to a fire incident and specifically fire-fighting run-off circa 55m to the north of the Site in 2003. **4.4.1.2 Historical Land-uses** A summary of the history/former uses of the Site prior to the construction and operation of the metal recycling facility is as follows: • Comprised in the 1890s of buildings listed as a chemical works with a wharf and landing stages located along the boundary to the south; • By 1920s the buildings on Site listed as chemical manure works; • Between 1939 and 1945, the Site and Western Area shown to be occupied by the Lawes Chemical Company for the manufacture of artificial fertilisers, sulphuric acid and other chemical fertilisers. By 1969 the chemical works trading under the name of Seabright Chemicals Ltd; • Between the 1920s and 1940s, the structures on the Western Area appear to have been locally modified,

[5] British Geological Survey, Available at www.bgs.ac.uk, accessed in March 2023

[6] Flood Map for Planning https://flood-map-for-planning.service.gov.uk, accessed March 2023

2.0 CONDITON OF THE LAND AT PERMIT ISSUE	
	prior to development into a smaller unnamed works sometime prior to 1944; • Features to the immediate south of the chemical works along the south boundary include two cranes, a wharf and a pier until between 1958 and 1962 where cranes and pier are no longer shown; • In 1995 following revocation of the permit for the manufacture of chemical fertilisers, a new WML was issued to Dockgrange Limited to operate a waste recycling centre on the land of the Site and Western Area; • After 2011 the existing WML was surrendered for two new EPs to be issued to different operators to operate separate scrap metal recycling facilities at the Site (Humphries) and the adjacent Western Area (Cronifer); and • The EP for the Western Area was transferred from Cronifer to S Norton in 2019 with redevelopment of part of the area in 2021 as detailed in Section 1.2.2 of this SCR. Please refer to Section 2.2 of the SCR for further details of the historical land uses of the Site and its surrounds. **Existing Contamination** The mapping suggests the Site including the land of the Western Area and its surrounds have a long history of potentially contaminative uses that spans for the previous 120 years, including chemical and fertiliser manufacture and scrap metal recycling. The area is still significantly industrial. Although records don't suggest point sources of contamination the historical phases of development and redevelopment and their dates suggest that Made Ground will be present, and that the Made Ground may contain contaminants associated with the source of the fill and/or the industrial use of the Site. There is, therefore, a high potential for the presence of historical industrial pollution at Site/the Western Area and in the surrounding area. Primary sources of off-site contamination are associated with commercial/industrial uses that may have impacted ground and/or groundwater with pollution from their activities, surface water from migration of impacted perched water and buildings/construction materials exposure from direct contact of chemical contaminants with subsurface building materials. Please refer to sections 2.0 of the SCR for further details of the pollution incidents, potentially polluting activities, historical land uses and evidence of existing contamination of the site and, where appropriate its surroundings.
Evidence of historic contamination, for example, historical site investigation, assessment, remediation and verification reports (where available)	Section 2.3 of this SCR summarises previous intrusive ground investigation in 2011 and subsequent environmental monitoring. This includes the installation of monitoring standpipes at 4 of the exploratory hole locations (BH1, BH2, BH3 and BH5). Refer to Section 2.3 if this SCR for a summary of the leachate and groundwater testing and findings.

2.0 CONDITON OF THE LAND AT PERMIT ISSUE	
	Please refer to the reports listed below for a detailed account of the historical site investigation and verification reports.
Baseline soil and groundwater reference data	Section 2.3 of this SCR includes a review of the baseline soil and groundwater reference data for the Site. The Phase 1 Site Survey and Phase 2 Site Investigation Report (TGEN, 2011) which covers the Site and Western Area states that '*The findings of this report can be used to determine the current baseline conditions at the site, to which reference should be made at permit surrender. Where necessary the site should be returned to the baseline conditions through appropriate remediation. It is our opinion however that at least 2 further rounds of groundwater monitoring and sampling should be undertaken to provide a more baseline dataset*.'
Supporting information	• SCR – Ref: 416.06407.00001 • ERA – Ref: 416.06407.00001 • Appendix 02: Site Condition Report (Axion Polymers, March 2017) • Appendix 03: Phase 1 Site Survey and Phase 2 Site Investigation Report (TGEN, August 2011) (the report includes an excerpt from Contamination Investigation Report (JPB, Circa 1997)) • Appendix 04: Phase 2 Geo-environmental Investigation and Assessment Report ref: 8860G-WML-00-XX RP-G-001 (WML Consulting, July 2020) • Appendix 05: Remediation Strategy For the Barking Yard Redevelopment Report ref: 8860G-WML-00-XX RP-G-002 (WML Consulting, November 2020) • Appendix 06: Detailed Unexploded Ordnance Risk Assessment (1st Line Defence, April 2020)

3.0 PERMITTED ACTIVITIES	
Permitted activities	The Site was formerly two separate permits both operating as metal recycling facilities. Both permits authorised the sites to carry out the receipt, storage and handling of ferrous and non-ferrous metal for recovery including the sorting and grading of NF metal. The Site predominantly handles ferrous metals where waste materials received are exposed to treatment processes to facilitate size reduction, densification and to improve the metal content to a required quality for charging furnaces at a melter (located off-site). The Western Area of the site predominantly handles NF metals and activities include the sorting (of hazardous and non-hazardous wastes) and grading of NF wastes in the warehouse, including cable sorting and stripping where appropriate and the sorting of batteries into waste types. As part of the Permit variation in 2018, the annual tonnage of waste accepted at the Site increased from 75,000 tonnes to

3.0 PERMITTED ACTIVITIES	
	200,000 tonnes per annum, facilitated by the installation of a new shear. The permit and land of the Western Area underwent redeveloped in 2021 with a number of changes within its existing site including improvements to infrastructure (new warehouses and drainage). See SCR (Axion Polymers, March 2017) included in Appendix 02 for a list of the changes made by S Norton. Please refer to section 3.0 of the SCR for a detailed description of the permitted activities for the Site including the Western Area.
Non-permitted activities undertaken	No non-permitted activities will be undertaken.
Document references for: • plan showing activity layout; and • environmental risk assessment.	• Drawing 01 Site Location Plan • Drawing 02 Environmental Permit Boundary & Site Layout • Drawing 03 Environmental Site Setting & Receptors • Drawing 04 Cultural and natural Heritage • Drawing 05 Fire Prevention & Management • ERA – Ref: 416.064707.00001/ERA

4.0 CHANGES TO THE ACTIVITY	
Have there been any changes to the activity boundary?	A separate EP for the Western Area adjacent to the Site was transferred to S Norton in February 2019 (Ref: EPR/DB3639RX) and S Norton wish to consolidate the two EPs into one to cover the entire metal recycling operations. Refer to the following new plans for the new boundary as part of this EP variation application: • Drawing 01 Site Location Plan • Drawing 02 Environmental Permit Boundary & Site Layout • Drawing 03 Environmental Site Setting & Receptors • Drawing 04 Cultural and natural Heritage • Drawing 05 Fire Prevention & Management
Have there been any changes to the permitted activities?	As part of the current variation application, additional waste codes will be included in the permit. Refer to table 3-1 for a list of the additional EWC codes and waste descriptions. Both permits that are being consolidated as part of this EP variation are already permitted to handle NF metals and have appropriate provisions in place for safe storage and handling. Operatives will ensure the different types of waste will not be mixed and are segregated appropriately. Operating techniques in accordance with Best Available Techniques (BAT) are included in the BAT-OT document submitted with this application (SLR ref. 416.064707.00001_BATOT). In addition, the proposed change in the permit to store hazardous waste types above 50 tonnes at any one time will require facility to be permitted and regulated as an IED 'installation' rather than a waste operation under *Section 5.6 Part A(1) (a) Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes pending any of the activities listed in Sections…5.3.*

4.0 CHANGES TO THE ACTIVITY	
	S Norton also require the additional activity to process WEEE (in the form of non-hazardous LDAs) to make them easier to handle, store and transport in order to facilitate their onward recovery. Following processing through the LeFort shear the processed LDA's will be transferred into the infeed storage bay for temporary storage prior to bulk transport to S Norton's AATF site in Liverpool where it is treated through a shredding and downstream separation process.
Have any 'dangerous substances' not identified in the Application Site Condition Report been used or produced as a result of the permitted activities?	No.
Checklist of supporting information	• Operating Techniques – Ref: 416.064707.00001/OT • ERA – Ref: 416.064707.00001/ERA

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	• Inspection records and summary of findings of inspections for all pollution prevention measures • Records of maintenance, repair and replacement of pollution prevention measures

6.0 POLLUTION INCIDENTS THAT MAY HAVE HAD AN INFLUENCE 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	• Records of pollution incidents that may have impacted on land • Records of their investigation and remediation

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 02. Site Condition Report (Axion Polymers, March 2017)

Barking Metal Recycling Facility, Environmental Permit Variation Application

Baseline Site Condition Report

S Norton & Co Limited

LR Project No.: 416.064707.00001

5 September 2023

SITE CONDITION REPORT

S Norton & Co Ltd

Prepared by Axion Consulting
March 2017

Matt Sargent

Contents

1.0 Site details

Name of applicant – S Norton & Co Ltd
72-76 River Road, Barking, Essex IG11 0DS
National Grid Reference: TQ4587281662
Reference: SNBPSCR1

2.0 Condition of land at permit issue

2.1 Environmental Setting

The site comprises a roughly rectangular plot of land (circa 1.9ha) located immediately to the S of River Road in Barking to the E of London and centred approximately at National Grid Reference (NGR) TQ 4585 8166. A site location plan is presented in Figure 1.

2.1.1 Site History

The earliest records dating from 1896 show the site as being located in an area known as Creekmouth, with the River Thames immediately to the S and Barking Creek immediately to the W. Buildings listed as a chemical works are located at the site, with a wharf and landing stages along the S boundary. A row of terraced houses, a school, allotments and public house are shown to the NW of the site, with two (2) magazines (ammunition stores) shown circa 150m to the NW of the site. A sewage works is shown circa 400m to the W on the opposite banks of Barking Creek with buildings listed as guano works (understood to be sea-fowl manure form the South Pacific) located circa 250m to the E of the site. To the N of the site are largely open tracts of land with a number of drainage channels.
By 1916 there is very little change at the site or in the immediate surrounds. Several cranes are shown along the wharf to the S and a road is shown along the current location of River Road to the N of the site. There is a small amount of development to the NW, where one of the buildings adjacent to the magazines is listed as a mission room.
By 1920 the buildings at the site are listed as chemical manure works. By 1961 the houses and magazines to the NW of the site are no longer present. By 1965 there is significant commercial development to the NW, N, NE and E of the site. By 1974 there has been significant development of the sewage works beyond Barking Creek.
From the 1960's to the 1990's there are several changes to the configuration of the buildings and works at the site itself, with ongoing largely commercial development of the immediate surrounds. By 2011 the buildings previously shown on the site are no longer present.
It is understood that previously the site was operated by Seabright Industries for the manufacture and subsequent storage of fertilisers.

2.1.2 Geology

2.1.2.1 Published Geology

The published geological survey map (1:50,000 scale, British Geological Survey, Sheet 257, Romford, Solid and Drift Edition) for the Barking area is summarised in sequence from the surface in the table overleaf:

Strata	Aquifer Designation	Area Covered	Estimated Thickness	Age	Typical Description
Near Surface Soil/ Made Ground	No	Whole Site	0 to 1m	Recent	Sandy, clayey gravel with brick*.
Alluvium	**Secondary (Undifferentiated)**	Whole Site	Up to 10m	Quaternary	Mainly sand, silt and clay with some gravel.
Thanet Sand	**Secondary (A)**	N of Site	5 to 32m	Palaeocene	Fine-grained sand.
Upper Chalk	**Principal**	Whole Site	79 to 102m	Cretaceous	White chalk with flints.

*Whilst the geological map does not record near surface soil or made ground we have assumed from observations made during the walkover that a superficial layer of made ground up to circa 1m thick is present below the majority of the site.

Beyond the N boundary of the site, the Thanet Sand would appear to be overlain by the Woolwich and Reading Beds (clay, mottled in part, with beds of sand, pebbles and shells) and in the very S of the site, the Thanet Sand would appear to be absent where the alluvium may directly overly the Upper Chalk.

2.1.1.2 Borehole record

Several BGS records exist for exploratory holes excavated in the vicinity of the site and can besummarised as follows:

Borehole TQ48SE479 (ref Barking Creek, Lawes' Manure Works) was located on or within 10m of the W boundary. The records do not include a full profile description, but indicate that the London Clay was reported to be only 1.8m thick, with the underlying chalk encountered at circa 25mbgl. Borehole TQ48SE30 (ref Barking Creek, Creekmouth, Barking, Essex) was located immediately to the SE of the site and shows the following strata succession:

Strata	Description	Thickness
Alluvium	Yellow clay. Dark clay. Peat.	0.76m 1.22m 4.11m
Valley Drift	Sharp, rough grit sand with water. Rough hard gravel with water.	0.91m 3.96m
Thanet Sand	Fine sand and mud with water.	3.05m
Upper Chalk	White chalk with flints.	>3.96m

In general, the BGS records corroborate the published geology with it likely that any near surface soil (made ground) will be underlain by circa 6m of alluvium and 5m of valley drift (sand and gravel). The Thanet Sand would appear to be circa 14mbgl and the Upper Chalk circa 18mbgl.

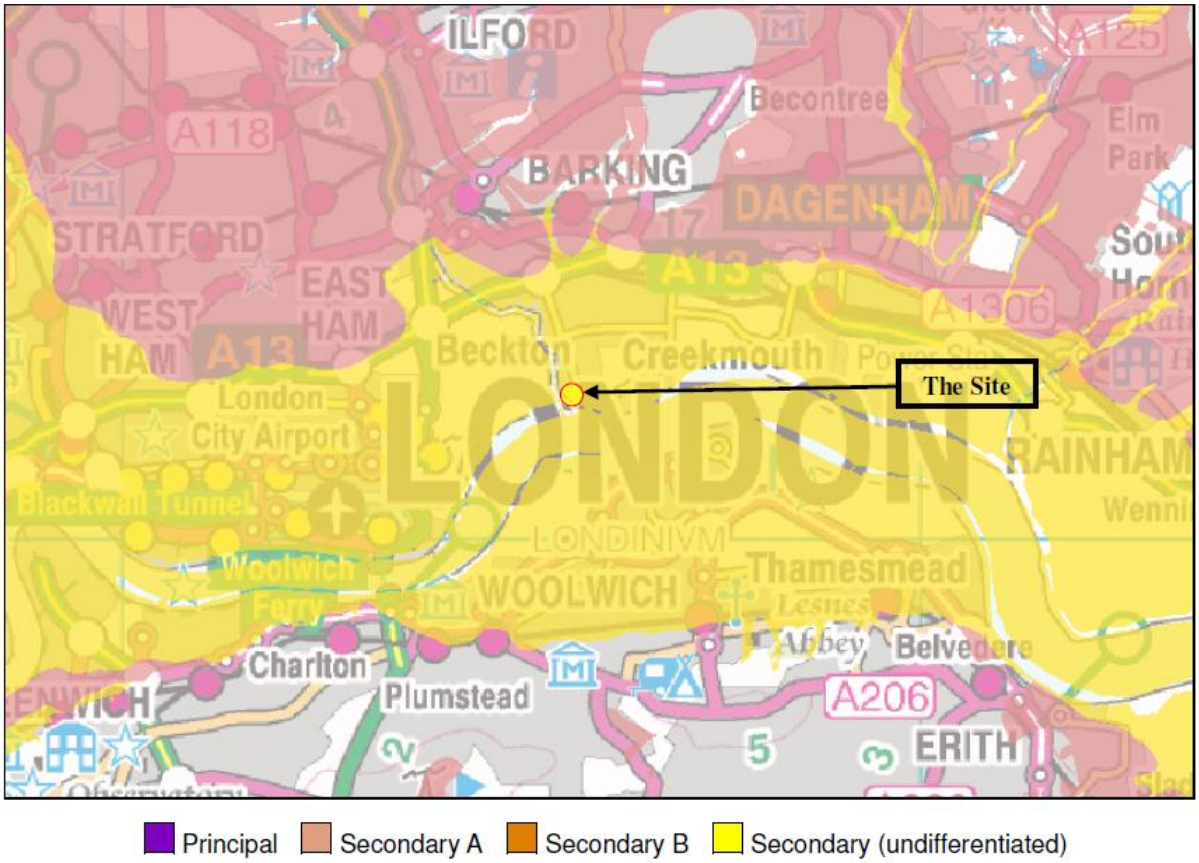
The borehole log does not record a depth to groundwater, although water is reported in the valley drift at 7mbgl and the Thanet Sand at 14mbgl. It is therefore likely that any water in the alluvium is in hydraulic continuity with the underlying water bearing strata.

2.1.1.3 Other ground conditions

- The site is allocated a moderate hazard rating for risks associated with compressible ground and running sand.
- The site is not within a radon affected area as less than 1% of properties are above the radon action level. Therefore, in accordance with BRE Report BR211 no radon protective measures are considered necessary.
- The site is not listed as being within 75m of an area potentially affected by coal mining.

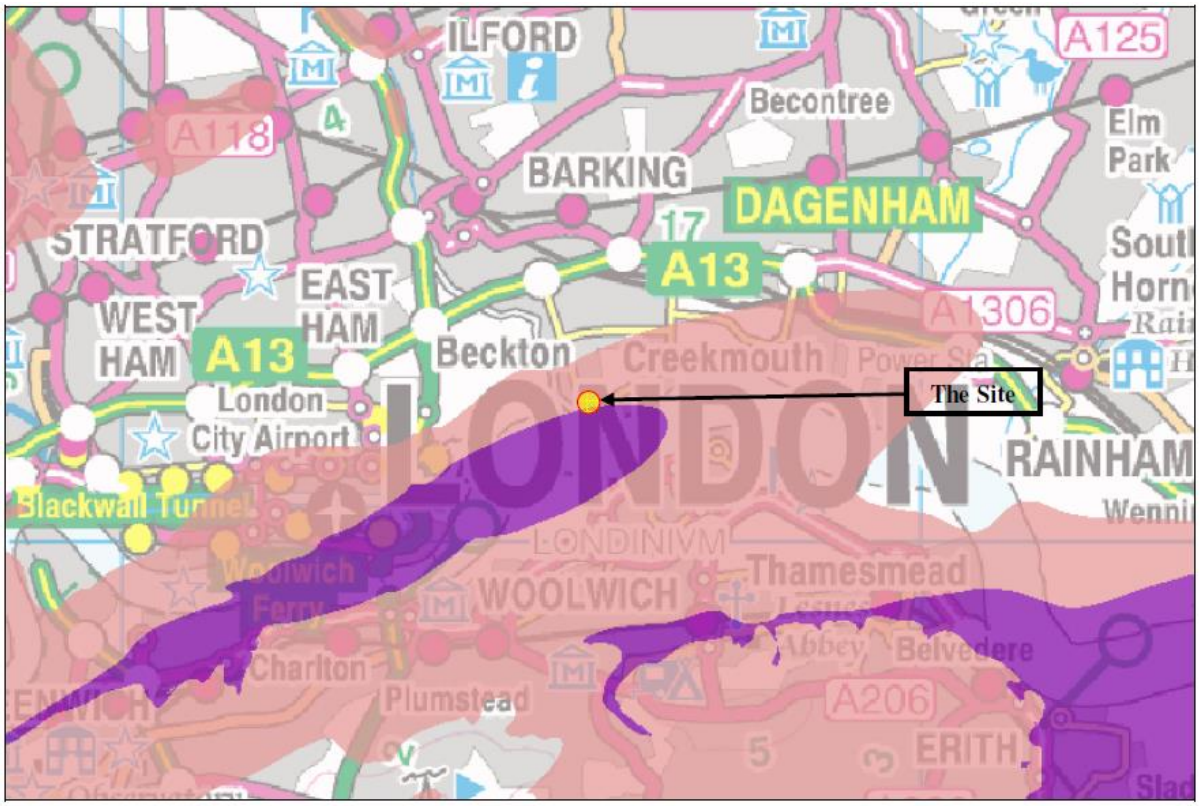
2.1.3 Hydrogeology

The superficial deposits at the site (alluvium) are classified by the agency as a secondary (undifferentiated)* aquifer, as shown on the map below:

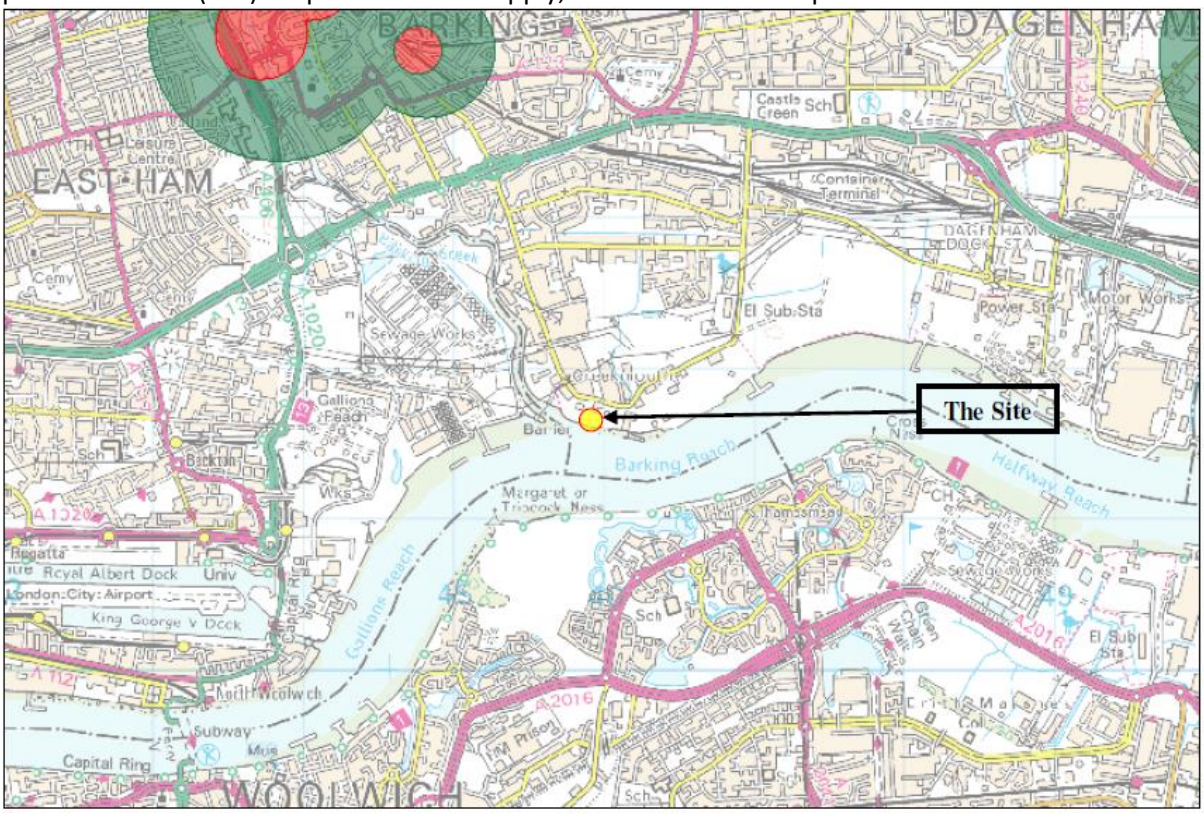


Unproductive strata are described as those with low permeability and of negligible significance for water supply or river base flow.
Secondary (A) aquifers are defined as permeable layers capable of supporting water supplies at a local rather than strategic scale and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.
Secondary (B) aquifers are defined as predominantly lower permeability layers, which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.
***Secondary (Undifferentiated)** aquifers are assigned in cases where it has not been possible to attribute either category A or B to a rock type. In most cases, this means that the layer in question has previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type.
Principal aquifers are defined as layers of rock or drift deposits that have high inter-granular and/or fracture permeability; meaning they usually provide a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifers.

The bedrock (Thanet Sand) at the site is classified by the agency as a secondary (A) aquifer. In the very S of the site, where the Thanet Sand is absent, the bedrock (Upper Chalk) is classified as a principal aquifer, as shown on the map overleaf:



The river basin management plan (RBMP) for the Thames region classifies the Greenwich Tertiaries aquifer as being of poor quantitative quality (current and predicted) and poor chemical quality (current and predicted). The site is not located in or within 1km of an agency designated source protection zone (SPZ) for potable water supply, as shown on the map below:



There is/are:

- No groundwater abstraction licenses listed within 1km of the site boundary.
- One (1) potable abstraction license listed between within 2km of the site, related to a surface abstraction for a desalination plant at Beckton, circa 565m to the W of the site.

2.1.4 Surface waters

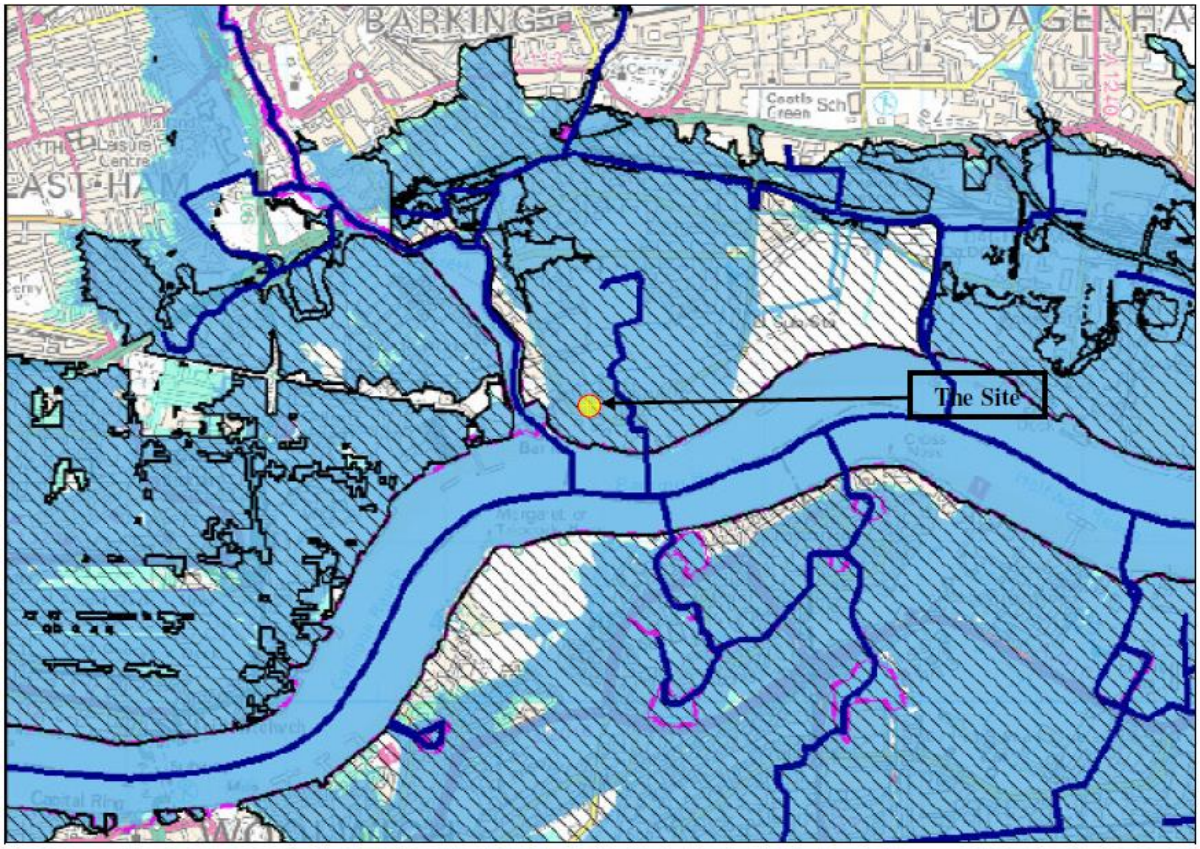
There is/are:

- Seventeen (17) detailed river network entries within 500m of the site, including the River Thames immediately to the S of the site and Barking Creek to the SE. Buzzards Mouth Sewer to the N and E of the site is listed as both a culvert and primary river.
- Non-designated surface water features listed within 250m of the site boundary, assumed to be drains/small streams.
- No agency general quality assessment (GQA) monitoring points for river quality within 1.5km of the site boundary.
- No surface water abstraction licenses listed within 1km of the site boundary.

The RBMP (rivers) for the Thames region classifies the Seven Kings Water to Barking Creek stretch of the River Roding, to the W of the site, within the Roding Beam and Ingrebourne catchment as a low, small, calcareous and heavily modified channel of moderate ecological potential (current and predicted) and with a current chemical status of fail and predicted chemical status of good.

2.1.4.1 Flood Risk

The site is located in Zone 2/3 of an agency indicative floodplain that is liable to flooding. The site is within an area that benefits from flood defences as shown graphically on the diagram below:



- Flooding from rivers or sea without defences.
- Extent of extreme flood.
- Hatched areas benefit from flood defences.

The risk attributed to the susceptibility from groundwater flooding is moderate.

2.2 Pollution history

The site and surrounds have a long history of potentially contaminative uses, including chemical and fertiliser manufacture, and scrap metal recycling. Potential sources of contamination associated with the historic use have been identified at the site, including the following:

- On site chemical and fertiliser manufacture.
- On site scrap metal recycling.
- Wide range of off-site potentially contaminative industrial uses (including STW, manure manufacture, waste treatment, transfer and disposal facilities etc.).

However, there have been no pollution incidents whilst the site has been under S Norton control.

2.2.1 Local authorisations, incidents and registers

There is/are:-

- No entries in the contaminated land register under Section 78R of the Environmental Protection Act 1990 Part IIA for the site or within 500m.
- One (1) historic integrated pollution control (IPC) authorisation listed within 500m of the site, relating to chemical fertiliser production at the site itself by Seabright Industries Limited, which was revoked in 1995.
- Twenty six (26) licensed discharge consents within 500m of the site boundary, the closest of which relates to trade discharges (mineral workings) from the site itself to the Thames. Twenty three (23) of the remaining consents relate to trade discharges, sewage discharges and process water to the Thames and Barking Creek from the Beckton Sewage Treatment Works (STW) to the W of Barking Creek. The remaining two (2) consents relate to trade discharges to the River Roding and Barking Creek to the NW of the site.
- Four (4) records of List 1 dangerous substances inventory sites within 500m of the site boundary, three (3) of which relate to Beckton STW to the W and NW of the site and one to Nuplex Resins circa 290m to the W of the site.
- Thirty-nine (39) records of List 2 dangerous substances inventory sites within 500m of the site, all of which are sited 290m to the W and relate to a wide range of industrial activities and a wide range of authorised substances.
- Eighteen (18) Part A(2) and Part B activities and enforcements within 500m of the site for a wide range of industrial activities.
- Seven (7) agency recorded pollution incidents within 250m of the site, the closest of which relates to fire-fighting run-off circa 55m to the N of the site in 2003.

2.2.2 Landfill and other waste sites

There is/are:-

- No operational landfill sites within 1km of the site boundary,
- Seven (7) historic landfill sites within 1km of the site boundary, the closest of which was located at the Beckton STW 350m to the SW of the site, the license for which related to inert and liquid sludge waste and was surrendered in 2004.
- Two (2) waste treatment, transfer and disposal sites listed within 500m of the site, both of which relate to the site itself operating as a scrapyard.
- Thirty one (31) agency licensed waste sites within 1.5km of the site boundary, relating to a range of waste recycling and transfer stations.

2.2.3 Current land uses

There is/are:-
One (1) contemporary trade directory entry for the site itself, relating to a travelling crane.
Forty one (41) contemporary trade directory entries for potentially contaminative industrial activities listed within 250m of the site boundary, which include:

• Moorings & unloading facilities. • Hoppers & silos(2no.). • Demolition services (2no.). • Recycling, reclamation & disposal (2no.). • Scarp metal merchants (3no.). • Distribution & haulage. • Office & shop equipment. • Pylons. • Tanks (generic) (3no.). • Container & storage (3no.). • Milling, refining & food additives. • Gas features. • Baby nursery & playground equipment.	• Electricity sub-stations (5no.). • Concrete products. • Works/factories (2no.). • Waste collection, processing & disposal equipment (2no.). • Industrial engineers. • Electrical production & manipulation equipment. • Distribution & haulage. • Lifting & handling equipment (2no.). • Business parks & industrial estates. • Structural engineers. • Construction & tool hire. • Waste storage, processing & disposal.

There are no active fuel station entries listed within 500m of the site boundary.

2.2.4 Environmentally sensitive land use

There are no designated environmentally sensitive sites within 500m of the site boundary.

2.3 Site setting

The site is located in an area which has a recorded history of industrial use for over 120 years, and is still significantly industrial. There is therefore, a high potential for the presence of historical industrial pollution at site and in the surrounding area.

However, since 2011, the site has been covered in reinforced concrete and an interceptor installed which is maintained regularly. A site walkover undertook in 2011 recorded the following information:

Site Address	72-76 River Road, Barking, London, IG11 0DS.	
Site Area	1.9ha.	
Grid Reference	TQ4585 8166.	
Usage	Waste recovery, treatment and recycling (scrap metal).	
Feature	**Details**	**Description**
Land-Use Surrounding the Site	North	Commercial and industrial.
	South	River Thames.
	East	Commercial and industrial.
	West	River Roding with commercial and industrial beyond.
Access	n/a	Via access road from River Road in the NW corner of the site.
Topography	Site	Relatively flat.
Buildings	Site	No permanent buildings were located on site, although several portacabins being used as offices were located in the W section of the site.
Surfacing	Site	The vast majority of the site is under permanent hard-standing installed in 2011 and in a good state of repair. A section of the site to the W and SW remains un-surfaced.
Vegetation	Site	None.
Foundations	Site	Not investigated.
Services	Site	Not investigated. It is assumed that electricity, gas and water enter the site from River Road along the NW boundary.
Activities	Site	At the time of the site visit, the site was an operational waste recovery, treatment and recycling facility (scrap metal).
Tanks	Site	No above ground storage tanks (AST) or evidence of underground storage tanks (UST) was observed.
Interceptors	Site	None observed, although it is assumed that there are a number of interceptors located across the site.
Surface Water	Site	None observed on site. The River Thames is located immediately to the S of the site and the River Roding (Barking Creek) a short distance to the W of the site.
Additional Observations	Site/ Surrounds	n/a.

A site visit undertook by the EA in conjunction with the site manager and Axion consultant on 29/09/16 recorded the following:

Site observations summary
S. Norton & Co Ltd EWAML 103643
Time on site 10:55am to 13:57pm
Pre application meeting with operator representatives John Tomkins and Michael Duke (TCM)

- Works on site are scheduled and ongoing until the end of 2016.
- Site surface has started at the rear of the site.
- Fitting of the fire hydrants with underground connection hose has started.
- Fitting of new metal fencing alongside the neighbouring Mix it and MSK sites would be done.
- Site has acquired new shearer machine that would use to process metal waste, located at the rear of side beside MSK. Machine duration are intended to be between 7 and 5 pm.
- There is a new green diesel tank not yet in operation with a bund surrounded. Located at the front of yard.
- The existing red oil diesel tank is still in used. The bund is filled with oil.
- There was no dust nor odour or noise from the site boundary.

A site walkover was undertaken on 15/03/17 by the Axion consultant and the following changes were recorded:

- Installation of New shear on hard standing completed in north east corner of site.
- New water tank installed (100,000 litre capacity).
- New plate steel wall installed along northern and eastern site boundary.
- New ring main with hydrants completed.
- Green diesel tank in operation.
- Red diesel tank removed.
- New office buildings installed on same location as previous but now over two floors.

3.0 Permitted activities

3.1 Current permitted activities

Operations undertaken on-site are done so with the consent of the Environment Agency and are in-line with those authorised activities, as set out in EPR/CB3807HV of the sites Environmental Permit. S. Norton & Co Ltd. is only authorised to carry out the activities specified in the **Table 2.1.1** as represented below:

S Norton treatment process	Description of activity for waste operations ('R' Codes)
The receipt, storage and handling of ferrous scrap metal for recovery	R13, ferrous metals received on-site are inspected for non-conforming material and then stockpiled for onward movement and/ or export.
The receipt, storage and handling of non-ferrous scrap metal for recovery	R13, non-ferrous metals received on-site are inspected for non-conforming material and then stockpiled for on-ward movement and/ or export.
Shearing of oversize ferrous metal (size reduction to specification)	R4, oversize ferrous metal is received on-site and may be processed through the shear for size reduction to ensure customer sizing specifications are met.
Burning of oversize ferrous metal (size reduction to specification)	R4, oversize ferrous metal is received on-site and may be burned/ hot cut for size reduction to ensure customer sizing specifications are met.

3.2 Proposed changes to permitted activities

It is proposed that the total quantity of waste accepted at the site will be increased from 75,000 tonnes per annum to 200,000 tonnes per annum. This will be facilitated by the installation of the following new equipment:

- Installation of shear capable of processing 35 tonnes of material per hour
- Construction of steel wall alongside the eastern and northern site boundary. This provides a thermal boundary around the perimeter of the site. It consists of a 430mm thick steel barrier 5 metres high comprising 15mm steel plate.
- CCTV system to cover 80% of the site
- 2 temporary office buildings
- Ring main system alongside the northern and eastern boundary
- 100,000 litre water tank
- Two pumps; one diesel and one electric each capable of delivering 1500 litres per minute at 10 bar pressure
- In addition, two new mobile plant grabs will be commissioned for summer 2017 to increase the throughput on site. They can also be used to remove material to be quarantined if required.

Appendix 03. Phase 1 Site Survey and Phase 2 Site Investigation Report (Terragen Environmental Consultants, August 2011) (the report includes an excerpt from Contamination Investigation Report (JPB, Circa 1997))

Barking Metal Recycling Facility, Environmental Permit Variation Application

Baseline Site Condition Report

S Norton & Co Limited

LR Project No.: 416.064707.00001

5 September 2023

- Not included (to be sent by file transfer with the application

Appendix 04. Phase 2 Geo-environmental Investigation and Assessment Report ref: 8860G-WML-00-XX RP-G-001 (WML Consulting, July 2020)

Barking Metal Recycling Facility, Environmental Permit Variation Application

Baseline Site Condition Report

S Norton & Co Limited

LR Project No.: 416.064707.00001

5 September 2023

- Not included (to be sent by file transfer with the application)

Appendix 05. Remediation Strategy For the Barking Yard Redevelopment Report ref: 8860G-WML-00-XX RP-G-002 (WML Consulting, November 2020)

Barking Metal Recycling Facility, Environmental Permit Variation Application

Baseline Site Condition Report

S Norton & Co Limited

LR Project No.: 416.064707.00001

5 September 2023

- Not included (to be sent by file transfer with the application)

Appendix 06. Detailed Unexploded Ordnance Risk Assessment (1st Line Defence, April 2020)

Barking Metal Recycling Facility, Environmental Permit Variation Application

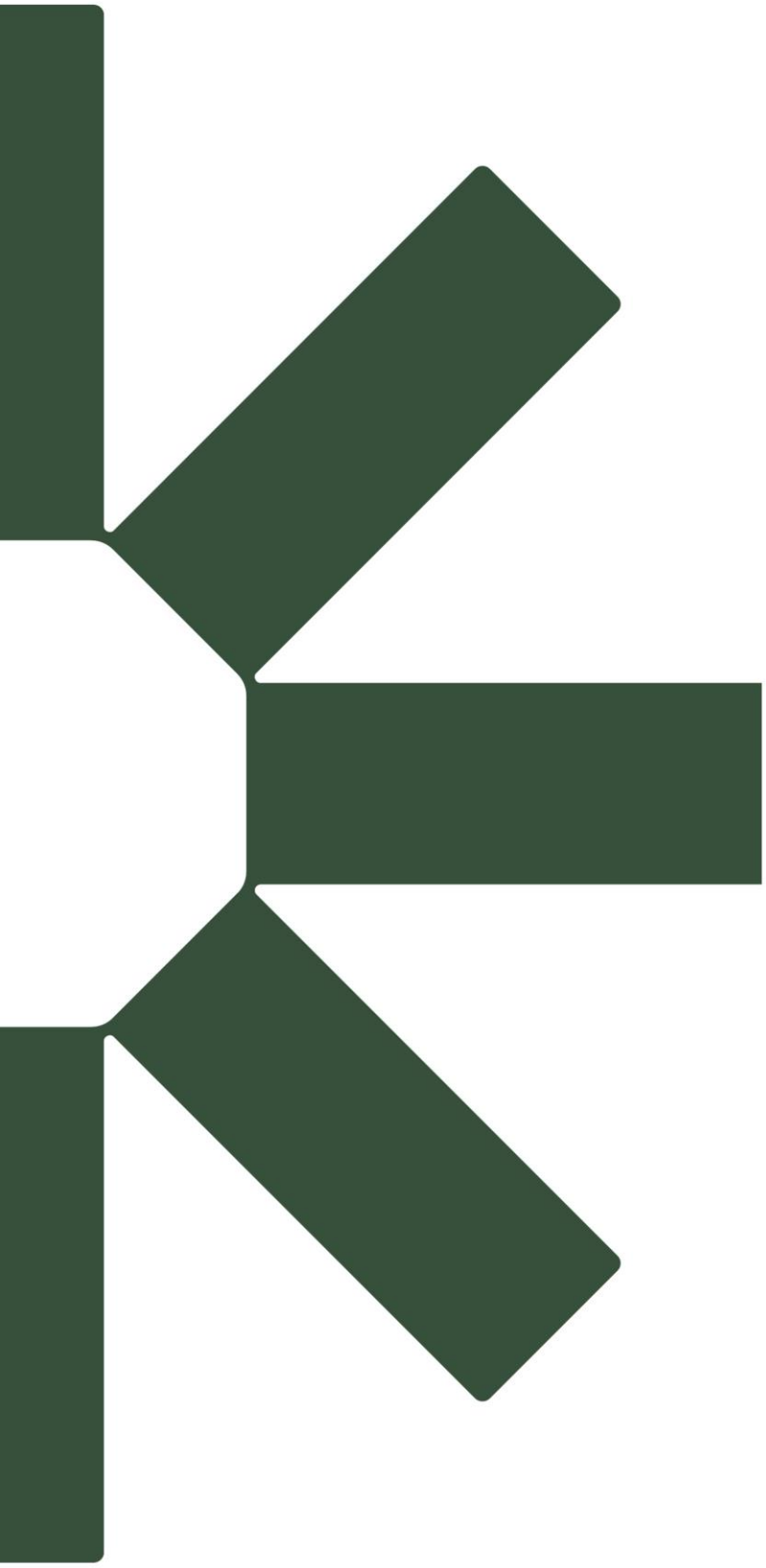
Baseline Site Condition Report

S Norton & Co Limited

LR Project No.: 416.064707.00001

5 September 2023

- Not included (to be sent by file transfer with the application)



Making Sustainability Happen