

# Recycling and Energy Recovery Facility

July 2012



Cross Green Industrial Estate  
Leeds



## Environmental Permit Application

Volume 3: Annex A

Application Site Condition Report

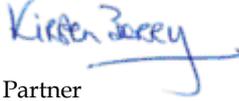




# Environmental Permit Application

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12<sup>th</sup> July 2012

For and on behalf of Environmental Resources Management
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Annex A

# Application Site Condition Report



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## A1 SITE DETAILS

### A1.1 INTRODUCTION

It is proposed that the site is redeveloped as an RERF (an ERF with MPT) as detailed in *Chapter 4* and summarised in *Section 3* of this Application Site Condition Report (ASCR). Site details are presented in *Table A1.1*.

The installation boundary presented in *Figure A1* encompasses the entire proposed RERF facility, which has a proposed site layout as presented in *Figure A2*.

**Table A1.1** *Site Details*

Required Information	Details
Name of the applicant:	Veolia ES Leeds Ltd (VESL)
Activity address:	Cross Green Industrial Park, off Pontefract Lane, Leeds
National Grid Reference:	E432750 N432450
Document reference and date of ASCR:	0139262, April 2012
Document references for site plans:	Detailed in the text, as required.

### A1.2 SITE SETTING AND CURRENT LAYOUT

The site is located in Leeds just over 3 km east of Leeds City Centre (see *Figure A3*). The process facility site area is approximately 3.8 ha, currently covered with hardstanding.

The site is generally flat with a slight topographic fall from north to south.

The site is currently disused and comprises the southern half of the former wholesale market site which has been demolished, with only the presence of drains with grates, manholes and inspection chambers at the surface. Some raised concrete areas show the locations of former buildings. A former gatehouse remains on the western boundary and two metal fences cross the site. Two floodlights and an electricity substation are present on the western side of the site.

### A1.3 SURROUNDING AREA

The surrounding land uses are currently:

- *North* – The remainder of the unused part of the former wholesale market site (demolished with only remaining hardstanding present) beyond which is an industrial building (Cover Structures Ltd), council owned land and the cycle track. Further beyond this is an area of railway sidings

(consisting of approximately twenty-six railway lines) which merge at Neville Hill Junction, beyond which there is Recreational Ground. Part of the railway sidings are disused and are designated as Wellington Sidings Leeds Nature Area. Allotment gardens are located to the northwest of the site boundary.

- *West* – Newmarket Approach beyond which there are light industrial units.
- *South* – Pontefract Lane, beyond which is Cross Green Industrial Park.
- *East* – Newmarket Lane, beyond which there are industrial premises.

There is an operational landfill located approximately 806 m north east of the site at Hunslet Depot. This landfill is licensed to accept inert waste (see *Section A2.3*). The nearest historical landfill site recorded in the *GroundSure* report was located 499 m south-west of the Site and was licensed to accept household waste.

There are no nationally or locally designated nature conservation areas such as Sites of Special Scientific Interest, Special Protected Areas, Ramsar Sites, Local Nature Reserves, World Heritage Sites, Environmentally Sensitive Areas, Areas of Outstanding Natural Beauty or National Parks within 500 m of the proposed site.

**A2.1 SUPPORTING INFORMATION**

The following information sources were used to determine the condition of the land at permit issue:

- Corus Infrastructure Services. '*Leeds EFW – Former Wholesales Market Site – Factual and Interpretative Geotechnical and Geo-Environmental Report*' prepared for Veolia ES Aurora Ltd. Ref. B60410-REP-GEO0001. Final report, December 2010. Including the:
- *GroundSure* Ref. SF14601815000, 30<sup>th</sup> July 2010.
- Tata Steel. '*Leeds RERF: Phase 2 Ground Investigation – Phase 2 Factual and Interpretive Geo-Environmental Report*' prepared for Veolia Environmental Services UK Plc. Ref. B60410-REP-GEO5501. Final report, February 2012.
- Tata Steel. '*Leeds RERF: Phase 2 Ground Investigation – Environmental Risk Assessment, Remediation Strategy and Validation Plan Report*' prepared for Veolia Environmental Services UK Plc. Ref. B60410-REP-GEO5502. Final report, March 2012.
- Environment Agency '*What's In My Backyard?*' website [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk).
- British Geological Survey '*Geology of Britain Viewer*' website <http://mapapps.bgs.ac.uk/geologyofbritain/home.html>.
- British Geological Survey *Sheet 70, Leeds*, Solid and Drift Editions, scale 1:50,000.
- Environmental Statement, Recycling and Energy Recovery Facility, Former Wholesale Market Site, Cross Green Industrial Estate, Leeds. Volume 1: Main Text. URS, June 2012

**A2.2 ENVIRONMENTAL SETTING****A2.2.1 Geology and Hydrogeology**

The underlying bedrock geology is the Carboniferous age Pennine Lower Coal Measures Formation which could be up to 330 m thick in this area. The Pennine Lower Coal Measures Formation is generally comprised of interbedded siltstone, mudstone and sandstone, with layers of coal. No drift deposits are present at the surface. The geological maps within the *GroundSure*

report show the site itself to be underlain by Made Ground (infilled excavation) associated with historical coal mining.

The encountered geology from the site investigation in 2010 is summarised in *Table A.2.2a*.

**Table A2.2a** *Summary of Encountered Geology*

Encountered Strata	Description	Average Thickness / m	Top of Strata / m AOD	Bottom Depth / m AOD
Made Ground	Gravel, sand, clay and fill of ash, brick concrete, plastic, wood, glass and worked mudstone and sandstone.	1.84	33.38-33.61	29.50-32.86
Weathered Coal Measures	Sandy gravelly clay with mudstone, siltstone and sandstone gravels.	1.97	29.50-32.86	30.99-28.05
Coal Measures	Mudstone interbedded with siltstone, sandstone and coal horizons.	Not proven	30.99-28.05	Not proven

Made ground across the site varied in thickness between 0.6 m to 4.10 m with the thickest areas located towards the northern boundary and the south eastern part of the proposed facility area. This is consistent with an area of mine working identified on the historical maps centred to the north of the site and a railway line that formerly ran across the south-eastern corner of the site.

Beneath the concrete present at the surface the made ground generally comprised sand and gravel (sub-base) with some clay and included ash, brick, concrete, coal, plastic, clinker, wood and glass with pieces of mudstone and siltstone. Gravels of mudstone and sandstone were also present. At TP04, TP05 and WS02 made ground comprised dark grey and brown clayey mudstone gravel with an average thickness of 1.2 m and due to the location is considered to be consistent with the presence of former open cast workings.

The upper weathered horizons of the Coal Measures comprised a stiff to hard, grey and mottled orange sandy and gravelly clay with the sand and gravel comprising pieces of mudstone, siltstone or sandstone. The thickness of this unit was between 0.6 m and 3.15 m.

The Coal Measures were identified in the deeper boreholes and some of the deeper trial pits. At the site the Coal Measures comprised dark grey and grey mudstone interbedded with light grey siltstone horizons. At some locations the siltstone horizons were more prominent, in particular at R03 where a siltstone bed was encountered of 2.85 m thickness. Sandstone horizons were also encountered and varied in composition. Three coal horizons were identified at both R01 and R02 at approximately 16.50 m AOD, 13.0 m AOD and 5.0 m AOD with thicknesses between 0.1 and 0.3 m thick. A further

shallow seam was encountered at elevations between 30.0 and 33.0 m AOD at the southern end of the site that had a thickness of between 0.1 m and 0.45 m (ground level at approximately 33.5 m AOD).

Perched groundwater was encountered in two of the 11 trial pits TP03 and TP05 and in three of the 7 shallow boreholes WS01, WS02 and WS04 suggesting that perched groundwater at the site is localised.

Groundwater was also encountered in the bedrock deposits within the Coal Measures at depths of between 28.588m AOD and 29.964 m AOD (as measured in September 2010) with a general flow direction towards the south/south east.

The Pennine Lower Coal Measures Formation is classified in the area of the site as a Secondary A aquifer, which is described by the Environment Agency 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'. The soils have been classified as having high leaching potential to the underlying Secondary A aquifer.

The site is not located within a Groundwater Source Protection Zone. There are however two groundwater abstraction licences within 1 km of the site. One is 493m south and the other is 620m north, both of which are for general use and abstract from the Coal Measures. These are assumed to be current.

There are no licensed abstractions for potable supply within 500 m of the site.

There are no Discharge consents to groundwater within 500 m of the Site, listed in the *GroundSure* report.

### **A2.2.2** *Surface Waters*

There are no surface water features within the boundary of the Site. Wyke Beck is located approximately 800m east of the site and has been classified by the EA as having 'Good' Current Chemical Quality status. The River Aire is located 1,116 m west of the Site and was classified by the Environment Agency as River Quality B (good) for chemistry and D (fair) for biology, in 2009. The Current Chemical Quality status for the River Aire is 'Fail'.

Historical records reported in the Corus site investigation report suggest a surface water drainage ditch was present at the site, crossing from north west to south east and that it was culverted as the site was developed. No current information is available on the culvert or its status.

The Site is not located in an area at 'Risk of Flooding from rivers or sea without defences'; however the land either side of the River Aire is classified by the Environment Agency as at 'Significant Risk'.

The *GroundSure* report (July 2010) indicates there are no current surface water abstraction licences recorded within 1 km of the site.

## A2.3 *POLLUTION HISTORY*

### A2.3.1 *Site History*

#### *On-Site*

Review of historical maps and the *GroundSure* report identifies the following:

- The earliest mapping shows a worked area centred to the north of the site which extends over the northern half of the site and is likely to be the area of open cast mine workings identified by the Coal Authority. The Coal Authority mapping shows two disused mine shafts/adits located in the north-western corner of the site and one located in the south-eastern corner of the site. A further two mine shafts/adits are located just off-site one off the south-western corner and one outside the eastern site boundary.
- At this time a road and a railway line also cross the south eastern corner of the site, with the railway being a spur of the mineral railway located immediately south of the site boundary and ending just east of the site boundary where an old coal mining shaft is marked on the maps.
- The railway is absent by the time of the 1921 mapping.
- A shed is shown in the centre of the site between 1908 and 1951.
- Maps between 1968 and 1995 show the presence of a wholesale market at the site.

#### *Off-Site*

The historical mapping shows the area to have been a mix of agricultural and coal mining with residential dwellings. By the 1960s the area was developing into an industrial area with engineering works and warehouses particularly to the south, west and east of the site. By the 1990s the site is shown as being within the Cross Green Industrial Estate.

The *GroundSure* report identifies that in 1891 there were railway sidings located 136 m north; mineral railway sidings 142 m north-east and 174 m east; with railway buildings 142 m north-east, 183 m north and 207 m north.

By 1906 a coal depot is noted 142 m north-east and two historic coal mining shafts – one 19 m south east and one 250m east of the site.

The final map detailed with the *GroundSure report* was from 1990 and detailed all of the following features; an Industrial Estate 20 m south-west; railway

sidings 120 m north, an abattoir 149 m north-west; an 'Unspecified Tank' 150 m west; an 'Unspecified Warehouse' 221 m south-east; a tannery 228 m south-east; and an 'Unspecified Works' 242 m south-east of the Site.

Areas of potentially infilled land have been identified within the *GroundSure* report in the form of unspecified pits, unspecified heaps, refuse heaps and unspecified historic coal shafts; on Site, 16 m south east and 19 m south-east of the Site.

### **A2.3.2** *Recorded Pollution Incidents*

There have been no pollution incidents recorded on Site according to the *GroundSure* Report.

There have been two pollution incidents recorded within 250m of the Site:

- One category 3, minor incident to land, occurred in July 2001, following the release of an unnamed pollutant, 17 m south-west of the Site; and
- One category 3, minor incident to land, occurred in February 2002, following the release of general biodegradable materials and wastes, 97 m south-east of the Site.

### **A2.3.3** *Site Reconnaissance*

No site reconnaissance was undertaken as part of development of the ASR and information has been collated from the previous investigation reports listed in *Section A2.1*.

### **A2.3.4** *Previous Site Investigations*

#### *Introduction*

The Corus Geotechnical and Geo-Environmental report was undertaken in order to provide Veolia Aurora ES and Leeds City Council, jointly with a detailed ground investigation report to identify geotechnical and geo-environmental issues that would have the potential to impact on the proposed development of the site as an RERF. This information now provides baseline data for the site.

In addition further work was done in January and February 2012 to investigate the location of the reported mine shaft in the south-eastern corner of the site; to take additional samples to assess soil leachate, further asbestos screening of the made ground, an assessment of made ground combustibility, and an assessment of phytotoxic risks to landscaping. The work also included commencing a monthly groundwater and gas monitoring programme.

Both these reports are discussed together in the sections below.

### *Scope of Investigations*

The scope of work in the 2010 investigation consisted of desk based searches, ground investigation work, detailed mining study and an interpretive report.

The ground investigation comprised the advancement of 11 trial pits to depths between 2.75 m and 4.10 m below ground level (bgl), seven shallow boreholes to depths between 3.0 m and 4.43 m bgl (WS01 to WS07) and eight rotary cored boreholes, two to 30 m bgl (R01 and R02) and six to 15 m bgl (R03 to R08).

Of the shallow boreholes three were installed as combined gas/groundwater monitoring wells (WS01, WS02 and WS06). Of the deeper boreholes four of these were installed as groundwater monitoring wells (R01, R02, R03 and R06).

In 2012, an additional 13 trial pits were advanced across the site, to a maximum depth of 2.8 m. The trial pits were placed in the areas around the proposed building footprint within areas of likely soft landscaping. A further three trial pits were then excavated to delineate further areas of concern identified in the earlier phase. Results from these trial pits were not yet available at the time of preparing this report. In addition, groundwater monitoring at locations WS01, WS02, RO1, RO2, RO3 and RO6 has been instigated with an initial monitoring frequency of monthly.

### *Laboratory Analysis*

Soil and groundwater samples were collected for laboratory analysis for both geotechnical and environmental purposes. The environmental analysis undertaken is summarised in *Table A2.3a* and *Table A2.3b*:

**Table A2.3a** *Summary of Chemical Analytical Suite - 2010 site investigation*

<b>Analysis</b>	<b>Total Number of Samples</b>	
	<b>Soil</b>	<b>Water</b>
Metals (from As, Cr, Cd, Cu, Pb, Hg, Ni, Se, Zn, B))	31	12
Total Cyanide	31	12
pH	31	12
Phenol	31	12
Sulphide	31	12
Total Sulphate	54	12
Water soluble sulphate	64	-
PAHs	19	6
TPH (C6-C40)	13	-
Banded TPH	5	-
Speciated TPH (aliphatic/aromatic split)	1	-
Asbestos screen	6	-
TPH with GRO including BTEX and MTBE	70	6
Hardness	54	12

**Table A2.3b Summary of Chemical Analytical Suite - 2011/2012 site investigation**

Analysis	Total Number of Samples Soil
Metals (from As, Cr, Cd, Cu, Pb, Hg, Ni, Se, Zn, B))	17
Alkali metals	8
pH	14
Phenol	14
Anions	14
PAHs (leachate only)	6
TPH (C6-C40) (leachate only)	6
Asbestos identification	10
Calorific value	2
PAHs (leachate only)	6
Phosphate	4
SVOCs	5
Total Carbon	4
Total Nitrogen	4
Total Organic Carbon	11
VOCs	5

Soil sample numbers included above also include samples taken for soil leachate analysis.

Groundwater samples were initially collected on two occasions following the initial site investigation on 1<sup>st</sup> October 2010 and again on 11<sup>th</sup> October 2010.

The recently commenced monthly monitoring programme targets six of the monitoring wells installed during the investigation in 2010 (wells identified previously) and samples acquired are subject to analysis for anions, dissolved metals, speciated extractable petroleum hydrocarbons (EPH), GRO, PAHs, pH, phenols and TPH. Results for three of the monitoring rounds have been provided for December 2011, January 2012 and February 2012. So far three, further groundwater monitoring rounds have taken place in December 2011, January 2012 and February 2012.

#### *Soil*

Soil results are presented in Tables B1 and B3 in the appendix.

Soil analysis from both investigations has shown the presence of metals at background concentrations consistent with a site located in Coal Measures geology and with made ground associated with coal mining operations. For example, the range of concentrations for arsenic was between 1.19 and 78.1 mg/kg; for cadmium the range was between 0.02 and 1.26 mg/kg and for total chromium the range was between 0.18 and 93.7 mg/kg.

Total TPH was detected at concentrations between 10 mg/kg and 1,850 mg/kg.

Low concentrations of the VOCs benzene, toluene, xylene, naphthalene, carbon disulphide and dichloromethane were detected in the second

investigation. The highest concentrations were encountered at TP14 at 1.0m bgl where carbon disulphide was encountered at a concentration of 1310 ug/kg and dichloromethane was encountered at a concentration of 193 ug/kg. TP15 0.8-1.0 m bgl and TP19 0.55m bgl also had detections of VOCs at TP15 the highest VOC detection was for 132 ug/kg dichloromethane. There were also detections of Benzene (23 ug/kg), toluene (39.2 ug/kg) and xylene (77 ug/kg). At TP19 detections of benzene (10.3 ug/kg), toluene (6.02 ug/kg) and naphthalene (144 ug/kg) were present. TP14 and TP15 are located close to the eastern site boundary, TP19 close to the western site boundary.

A number of SVOCs were also detected at TP14 at 1.0m bgl comprising mainly PAHs of which the maximum individual concentration was 1230 ug/kg of naphthalene.

A statistical analysis of the soil sample results was undertaken on the samples collected in accordance with best practice CLEA methodology under a commercial/industrial scenario and none of the calculated US95 values exceeded the screening criteria comprising published Soil Guideline Values (SGVs) and Generic Assessment Criteria (GACs) published by the Chartered Institute of Environmental Health (CIEH) in collaboration with Land Quality Management Limited (LQM) and the Contaminated Land: Applications In Real Environments (CL:AIRE) in collaboration with The Environmental Industries Commission (EIC) and Association of Geotechnical and Geoenvironmental Specialist (AGS) . In addition none of the maximum values detected exceeded screening criteria. This suggests that soil concentrations at the site do not present a risk to human health.

Of the 17 samples collected for asbestos identification, ACM was identified in only one sample where amosite in the form of loose fibres and ACM debris was identified. This was from TP21 at 0.8m depth in the made ground located towards the centre of the site area.

The soil combustibility risk assessment and the phytotoxic assessment of made ground identified that in the areas of the site not covered with concrete hardstanding, a clean capping layer should be incorporated into the ground works at the facility particularly in the south western corner of the site with a minimum thickness of 1m and in line with ICRCL guidelines. This is required in order to mitigate the risks identified from the soil combustibility risk assessment and the phytotoxic assessment which identified that localised areas within the south western corner and at the eastern boundary posed a risk to planting schemes through the presence of phytotoxic metals. The south western corner of the site was identified within the Phase 2 ground investigation to present a combustibility risk associated with the presence of coal.

## *Groundwater*

The results of the initial groundwater sampling rounds are presented in Table B2 and the latest rounds of monitoring are reported in Table B4 in the appendix.

The groundwater results from February 2012 shows groundwaters acquired from the four boreholes sampled (RO1, RO2, RO3 and WS02) had generally low concentrations of all metals detected except for chromium and mercury which have not been detected. However previous monitoring results have detected chromium at concentration of up to 14.1 ug/l. In January 2012 the range for chromium was 4.68 to 9.74 mg/l.

Zinc was encountered in February at concentrations ranging between 6.32 ug/l and 38.7 ug/l with the highest concentration at RO3. Three of the samples from the latest round of monitoring would exceed the EQS screening criteria of 8 ug/l. Past results have also shown a maximum zinc concentration as high as 244 ug/l at RO3 in December 2011. RO3 is located in the north-eastern corner of the site.

Concentrations of metals generally vary over the monitoring rounds but with concentrations staying within similar ranges.

Cyanide has not been detected in any of the groundwater samples collected over the five rounds of monitoring to date.

Total Petroleum hydrocarbons were encountered in February 2012 at concentrations ranging between 19 ug/l (RO2) and 257 ug/l (RO1) although concentrations were higher at RO1 in both December 2011 and January 2012 at concentrations of 2,360 ug/l and 2,690 ug/l respectively. RO1 is located in the southern part of the site and the response zone for this monitoring well is within the Coal Measures.

Polyaromatic Hydrocarbons (PAHs) were detected in RO1 at a concentration of 10.8 ug/l in December 2011 and 13.8 ug/l in January 2012.

Sulphate has been detected at concentrations ranging between 71.4 and 372 mg/l in February 2012 with the highest concentration detected at RO3. In previous monitoring rounds sulphate generally ranged between 225 mg/l and 350 mg/l with the maximum concentration detected at RO3.

The second phase of investigation undertaken in 2011/12 undertook a soil leachability risk assessment which identified slightly elevated concentrations of PAHs and arsenic when compared to the UK Drinking Water Standards (UK DWS) screening criteria for drinking water and one elevated concentration of zinc when compared to the Environmental Quality Standards (EQS) screening criteria for surface water.

A Tier 1 controlled waters risk assessment identified a number of exceedances of the screening criteria for soil leachate and groundwater analysis results for arsenic, chromium, zinc, sulphate, total petroleum hydrocarbons (TPH) and polyaromatic hydrocarbons (PAH). The Tier 1 assessment concluded that due to presence of the Secondary A aquifer beneath the site which comprised predominantly low water bearing mudstones and siltstones remediation wasn't warranted based on the low environmental site setting. The low environmental site setting was based on the aquifer designation, the distance to the nearest watercourse and the absence of potable water abstraction points within 2km of the site.

However, further quantitative assessment for TPH and PAH was undertaken due to the frequency of exceedances of the screening criteria for these compounds and in order to confirm whether the conclusions of the initial screen were reasonable.

The further assessment on TPH and PAH indicated no discernable impact to the drinking water receptors with concentrations significantly below the target concentrations and below laboratory detection limits at the downgradient site boundary.

No remediation was recommended.

#### *Soil Gas*

As the initial investigation in 2010 identified the presence of ground gases at the site, additional monitoring over a longer period of time was instigated to confirm the nature of the ground gas protection measures that would be required for the development. The soil gas monitoring programme comprises monthly monitoring of RO1, RO2, RO3, RO6, WSO1, WSO2, WSO3 and WSO6 from November 2011 to November 2012. The soil gas measurements obtained up to February 2012 are summarised in Table 5 presented in the appendix.

No methane or hydrogen sulphide has been recorded in the boreholes during the monitoring visits. Carbon dioxide has been detected at concentrations between 1.4% and 7.9%. WSO2 located close to the northern boundary of the site is the location where the highest concentrations of carbon dioxide have been identified. Carbon dioxide has also been identified above 5% in RO1 (6.7%), RO2 (7.1%) and RO3 (5.7%) where the response zone of the monitoring well is located within the coal measures. Monitoring will continue until November 2012 to confirm the gas protection measures required for the development.

#### *Remediation Activities*

As described in the sections above the following remedial activities are planned to take place during redevelopment of the site in order to mitigate the risks from soil combustibility in the south-western corner, phytotoxic risk to

plants in the landscaped areas and the presence of ground gases, specifically, carbon dioxide:

- A 1m deep clean capping layer to be placed with the area of soft landscaping in the south western corner of the site to mitigate against soil combustibility risk from the made ground;
- Clean cover of soil to be incorporated into all soft landscaping areas in accordance with the landscaping scheme design and specification to mitigate phytotoxic risks to plants from metals within the soils;
- Gas protection measures to be provided to the building in accordance with CIRIA Characteristic Situation 2 (to be confirmed following year of monthly monitoring).

No groundwater remediation was recommended.

Asbestos was identified at one location in the east of the site and the Tata Remediation Strategy states that soils arising from excavation works in this area will be disposed off site as asbestos contaminated soils.

Any perched groundwater accumulated rainfall encountered during excavation works will be removed and discharged as approved by the utility regulator.

## A3.1

## GENERAL DESCRIPTION

The facility requires an Environmental Permit for the mechanical pre-treatment and incineration of residual household waste in a Recycling and Energy Recovery Facility (RERF) with a design capacity to treat 214,000 tonnes of municipal waste per year. The ERF will consist of a single stream with a capacity of 20.5 tonnes of residual municipal waste per hour. The proposed site layout is presented in *Figure A2*.

The process can generate around 10.6 MW of electricity exportable to the local electricity network via an underground cable.

The facility will comprise a building containing a:

- reception hall
- Mechanical Pre-Treatment (MPT) process
- waste storage bunker
- demineralisation plant
- demineralised storage water tank
- de-aerator
- steam turbine
- generator
- flue gas treatment process
- air-cooled condensers

and external areas including:

- bottom ash storage area
- fuel storage tank
- firewater storage and rainwater harvesting tanks
- waste water pit
- gatehouse and welfare facilities
- weighbridges
- car park
- HGV circulation and manoeuvring areas
- oil separators and attenuation tank
- attenuation ponds

The RERF will consist of a Mechanical Pre-Treatment (MPT) process for the further recovery of recyclables from incoming residual wastes and an Energy Recovery Facility (ERF) for the remaining residual waste fraction.

This process will combine a number of screening and sorting techniques dividing the recyclables within the municipal waste, particularly fibre (paper and card), plastics and metals, into a marketable recyclable material stream and a residual stream to be processed further within the facility.

All of the waste will be delivered to the MPT hall via road and the majority will be processed through the MPT. Waste not processed by the MPT will be delivered to the reception hall via road and will be homogenised and stored in the waste bunker. The waste storage bunker is designed to provide approximately two and a half days storage at normal operating capacity without stacking.

The reception hall provides for the storage of quarantined material. The waste bunker will be constructed of reinforced concrete and waterproofed to prevent a pathway to the underlying groundmass. It will be periodically inspected for contamination from wastes such as oils and non-combustible items which will be removed and back loaded into road vehicles for alternative disposal at a licensed waste site.

The furnace will be fed with shredded waste via a hopper and waste feed chute. The heat produced will be used to generate superheated steam in a boiler which will power a turbine to generate electricity. Air-cooled condensers will cool the steam exhaust from the turbine. The electricity will be exported to the national grid once the site's requirements have been met, via a connection into the existing overhead lines to the west of the site. The switchgear will be located within the Turbine Hall and the sub-station will be located adjacent to the hall.

Urea prills will be used to make a urea solution of approximately 32% by weight in a preparation tank and then introduced into the furnace in order to reduce NO<sub>x</sub> emissions in the flue gases; this process is known as selective non-catalytic reduction (SNCR). The flue gases will pass through lime and activated carbon to neutralise acidic components such as HCl and SO<sub>2</sub>, and to adsorb potential pollutants such as dioxins and heavy metals respectively.

The flue gases will then pass through a fabric filter to remove particulate matter including spent lime and activated carbon (known as flue gas treatment (FGT) residue). The cleaned gases will be discharged to atmosphere via a stack and the FGT residue collected in the bottom of the fabric filter bag.

The FGT residue is high in lime content which defines them as hazardous. They will be transferred to a storage silo with a five day capacity.

The bottom ash will be collected and cooled in a quench bath, and then transported via conveyor and a magnetic separator to separate into two residual waste streams:

- ferrous metals; and
- bottom ash.

These will be stored in the Bottom Ash storage area which will have a storage capacity of at least five days.

The following are estimates of the annual tonnage expected from the facility<sup>(1)</sup>:

- FGT residue - 6,560 tpa
- Bottom Ash - 37,720 tpa
- Ferrous metals - 820 tpa
- Recyclables - up to 42,800 tpa

Ancillary operations, processes and activities include:

- Fuel storage - 80,000 litres in an above ground storage tank. The fuel is to be used for firing of the auxiliary burners, the re-fuelling of the site mobile plant, the operation of the emergency diesel generator and emergency diesel fire pump.
- Demineralised water system - to provide boiler feed water.
- Condensation system - for condensation of turbine exhaust steam.
- Auxiliary cooling system - for the process effluent collected from drains within the plant.
- Water recycling and reuse from the waste water pit.
- Maintenance of on-site mobile plant.
- Attenuation water ponds.
- Fire water and rainwater harvesting tanks,

The facility design includes the construction of hard impermeable surfaces to all operational areas.

Surface water run off from operational areas within the building envelope will be drained to the waste water pit to be either re-used within the bottom ash process or discharged via the foul sewerage system as appropriate.

## **A3.2 PERMITTED ACTIVITIES**

### **A3.2.1 Introduction**

A list of all substances used and produced at the installation that could pollute the soil or groundwater if released accidentally is presented in *Table A6*. An

<sup>(1)</sup> These figures are based on 8,000 hours of operation and an average Calorific Value of 9 MJ/kg. The figures based on 8,760 h of operation are FGT residue = 7,183 t yr<sup>-1</sup>, Bottom Ash = 41,303 t yr<sup>-1</sup>, Ferrous Metal = 898 t yr<sup>-1</sup>.

assessment of their pollution potential has been made based upon their properties, toxicity and volume stored.

Water storage and processing has not been included in this table because it is not harmful to the environment. Small volumes of chemicals and waste containers have not been included as their volumes are not considered to pose a significant risk to the environment.

The main raw material that will be stored on site will be mixed residual household waste awaiting processing. The waste produced by the site will largely comprise bottom ash which is a solid material.

The location of bulk storage tanks and raw materials and waste storage areas are shown on *Figure A2*. The final location of some raw materials and waste storage silos and tanks are to be confirmed during detailed design of the facility.

A preventative maintenance programme, including cleaning and monitoring will be implemented at the facility site to ensure that spills and leaks are minimised from storage areas and machinery. The site will operate to the standards required for ISO 14001.

### A3.2.2 *Above Ground Storage*

*Table A3.2a* provides a summary of the bulk storage above ground storage tanks (ASTs) and silos at the installation.

**Table A3.2a** *Summary of Above Ground Storage Tanks and Silos*

Tank Name	Contents	Capacity (indicative)	Construction	Secondary Containment
<i>Raw Materials</i>				
Diesel tank	Fuel oil	80,000 litres	Steel	External, double skin with leakage detection
Emergency fire pump "day" tank	Fuel oil	Approx. 500 litres	Steel	Indoors, double skin
Lime silo	Hydrated Lime (CaOH <sub>2</sub> )	110 m <sup>3</sup>	Steel	Indoors
Sodium hydroxide tank	Sodium hydroxide	3,000 litres	Stainless steel or plastic	Indoors, concrete bund
HCl tank	Hydrochloric acid	3,000 litres	Stainless steel or plastic	Indoors, concrete bund
Urea Big Bags	Solid Urea	20 m <sup>3</sup>	Big Bags	Indoors
Activated Carbon silo	Activated Carbon	75 m <sup>3</sup>	Steel	Indoors
Carbohydrazide tank	Carbohydrazide	150 litres	Steel	Indoors
Phosphate tank	Phosphate	150 litres	Plastic containers	Indoors

Tank Name	Contents	Capacity (indicative)	Construction	Secondary Containment
Acids tank for pH control	Hydrochloric acid	3 m <sup>3</sup>	Chemical reagent storage tank	outdoors
<i>Process Tanks</i>				
Demin Tank	Purified Boiler Water	70m <sup>3</sup>	Resin or steel	Indoors
<i>Wastes and effluents</i>				
FGT residue silo	FGT residues	115 m <sup>3</sup>	steel	Indoors

All tanks will be new, and therefore, will be in good condition. Bulk storage of liquids will comply with the requirements of the appropriate Pollution Prevention Guidance. Secondary containment, where required will comprise suitably lined bunds with 110% capacity of the largest tank within it. All filling points, vents and sight glasses will be located within the bund and there will be no drain through the bund floor or walls.

All facilities required for the storage of liquids including hydrocarbons and process chemicals will be sited on impervious bases and surrounded by impervious bund walls as required.

Drip trays and spill kits will be located at strategic points around the site.

### A3.2.3 *Below Ground Storage*

There will be a below ground sealed waste water pit for the storage of waste water from areas within the process facility. This pit will be of an impervious construction with a sealed drainage system.

There will also be below ground tanks for the storage of fire water and for rainwater harvesting.

### A3.2.4 *Other Storage*

In addition to materials storage, *Table A3.2b* provides the volumes of oils that will be held within the closed systems of the process machinery.

**Table A3.2b** *Estimated Volumes of Oil within Process Machinery*

Machinery Part	Oil Type	Volume
Turbine / generator	Lubricating oil	2,500 litres
Turbine / generator	Hydraulic oil	200 litres
Shredder	Hydraulic oil	300 litres
Grate unit (2 of)	Hydraulic oil	200 litres
Crane grab (2 of)	Hydraulic oil	2 x 70 litres

### A3.2.5

#### *Water Management*

Excess liquid, including washdown water from the reception hall, will be absorbed by the waste and processed during combustion. Other liquid resulting from occasional wash downs, will be routed to the waste water pit and reused within the process. In the unlikely event that these liquids cannot be reused within the process, then they will be stored and any excess water will be contained on site in a waste water pit for pumping out and final disposal by tankers or discharged to the sewer under a trade effluent discharge consent.

The foul drainage sewerage system will be managed to not mix with surface water drainage and will be designed to collect foul water from toilets, sinks, kitchen and sanitary ware appliances as well as waters from the laboratory area.

Rain water from the roof will be collected in a central channel that outfalls to a lagoon and underground rainwater harvesting tank. This water will be used to supplement the underground fire water tank and the green wall watering tank water supply.

The surface water run-off from the external access roads, parking and service areas will drain to two separate below ground drainage systems. One system will discharge to the western outfall and one will discharge to the eastern outfall. All surface water will be intercepted and conveyed by a series of linear drainage channels and gullies. Flow from external trafficked areas will pass through a class 1 bypass oil separator prior to discharging to the surface water sewer network. Any run off from the area around the fuel tank will pass through a full retention separator before discharging to the public surface water sewer.

The car parking area to the west of the main building will utilise a permeable pavement construction. Techniques that control pollution close to the source, such as permeable surfaces or infiltration trenches will be used, which can offer a suitable means of treatment for run-off from low risk areas such as roofs, car parks, and non-operational areas. Therefore it is proposed that flow from this area will not pass through an oil separator prior to discharge.

The final drainage system arrangement will be subject to agreement by the EA during detail design.

### A3.3

#### *NON-PERMITTED ACTIVITIES*

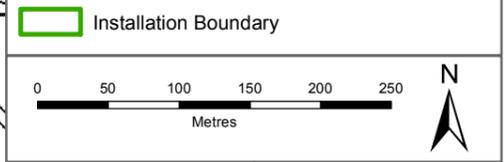
The entire facility will be located within the installation boundary, and as such, all activities are considered to be permitted activities



Appendix A

Figures

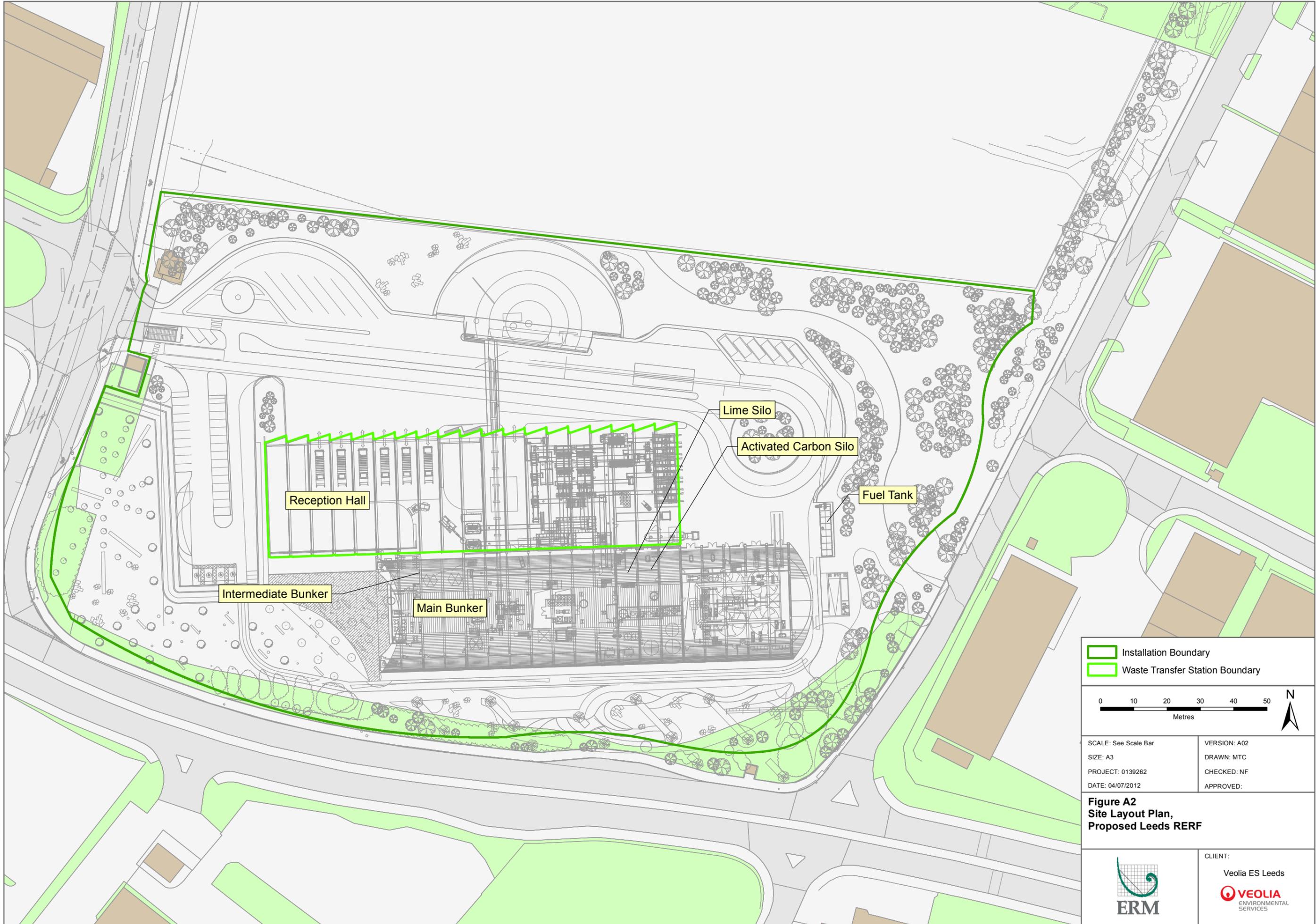




SCALE: See Scale Bar	VERSION: A03
SIZE: A3	DRAWN: MTC
PROJECT: 0139262	CHECKED: NF
DATE: 28/06/2012	APPROVED:

**Figure A1**  
Installation Boundary,  
Proposed Leeds RERF

	CLIENT:
	Veolia ES Leeds



Reception Hall

Intermediate Bunker

Main Bunker

Lime Silo

Activated Carbon Silo

Fuel Tank

- Installation Boundary
- Waste Transfer Station Boundary

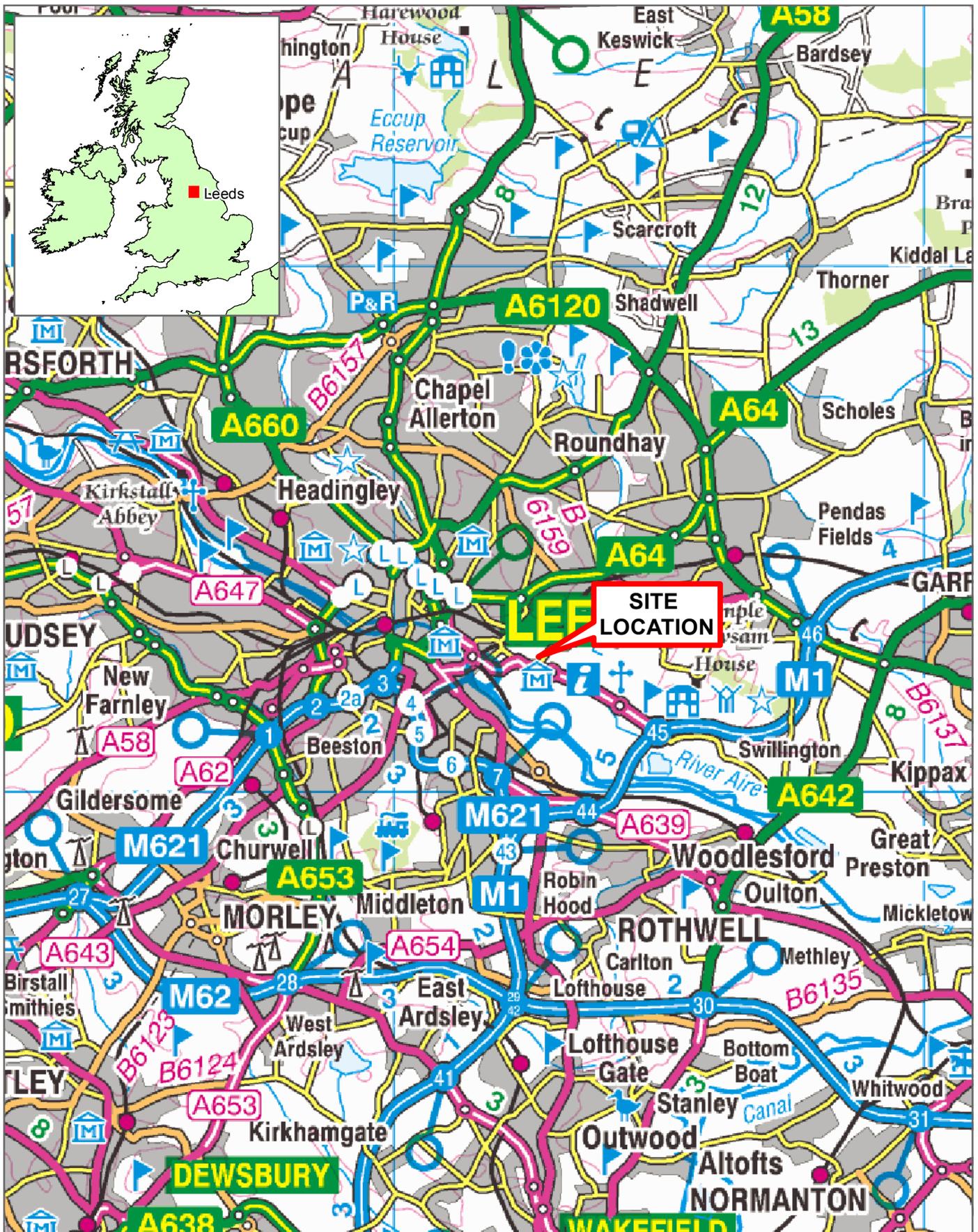


SCALE: See Scale Bar	VERSION: A02
SIZE: A3	DRAWN: MTC
PROJECT: 0139262	CHECKED: NF
DATE: 04/07/2012	APPROVED:

**Figure A2**  
**Site Layout Plan,**  
**Proposed Leeds RERF**



CLIENT:  
 Veolia ES Leeds  
**VEOLIA**  
 ENVIRONMENTAL  
 SERVICES



**Figure A3**  
**Site Location Plan,**  
**Proposed Leeds RERF**

A4

SCALE: 1:100,000  
 PROJECT: 0139262  
 DATE: 28/06/2012

DRAWN: MTC  
 CHECKED: NF  
 APPROVED:



CLIENT:  
 Veolia ES Leeds  


PROJECTION: British National Grid

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Appendix B

## Data Tables



Table 1. Soil Analytical Data - Corus Site Phase I Site Investigation September 2010

Location Depth (m) LOD	TP01	TP02	TP03	TP03	TP03	TP04	TP05	TP07	TP07	TP08	TP08	TP09	TP09	TP10	TP11	TP11	RC03	WS01	WS01	WS02	WS02	WS03	WS04	WS05	WS05	WS06	RC05	RC07	WS07	WS07	
	1	2.3	0.5	0.7	1.5	2.3	1	0.75	0.5	2.5	1	1.7	0.5	1	1	1.5	1.2	0.5	1	1	1.9	0.5	0.5	0.5	1.3	0.5	0.5	0.5	1.3		
<b>Metals</b>																															
Arsenic	<0.6 mg/kg	65.7	45.8	3.28	38.6	4.88	10.7	8.38	1.92	78.1	12.9	7.82	2.45	30.2	11.4	3.23	30.7	3.11	10.6	7.13	3.85	1.7	2.87	2.49	10.6	27.2	1.19	8.31	5.42	62.4	
Boron, water soluble	<1 mg/kg	<1	<1	<1	1.54	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2.97	1.13	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Cadmium	<0.02 mg/kg	0.0862	0.0791	0.161	0.234	0.0407	0.0678	0.21	0.0414	0.0725	0.0782	0.212	0.145	<0.02	<0.02	0.313	0.219	0.22	0.378	0.154	0.248	0.4	0.261	0.128	<0.02	0.213	0.0553	0.387	0.145	0.0879	
Chromium	<0.9 mg/kg	10.6	21	23	32.7	25.3	34.5	22.1	9.5	18	24.6	26.2	22.5	36.4	18.9	36.1	18.9	10.1	12.6	24	22	19.2	15.6	12.2	29.3	18.8	8.74	7.71	14.4	22.3	
Copper	<1.4 mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6.18	22.1	19.5	7.74	19.4	5.5	22.8	42.9	34.2	6.38	8.29	16.4	3.26	11.3	8.93
Lead	<0.7 mg/kg	15.5	15.3	41	15.1	175	90.9	26.3	24	7.88	227	20	15.2	8.95	24.5	27.5	15.8	29.9	10.5	6.4	18	9.92	9.49	8.54	7.15	21.6	17.2	4.74	16	9.32	
Mercury	<0.14 mg/kg	0.811	0.901	0.964	<0.14	0.61	<0.14	<0.14	0.596	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	0.634	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14	<0.14
Nickel	<0.2 mg/kg	5.35	11.6	16	17.4	36.4	27.2	31.5	33.8	7.47	24.7	24.9	20.8	18.8	25	33.8	17.4	20.7	18.4	10.9	7.89	14.1	58.1	43.8	16.4	13.8	8.3	18.3	23.1	7.4	17.3
Selenium	<1 mg/kg	2.66	<1	1.75	<1	<1	<1	<1	<1	1.04	<1	1.32	<1	<1	1.35	<1	1.25	<1	<1	<1	1.23	<1	<1	<1	<1	1.39	<1	2.19	<1	<1	2.61
Zinc	<1.9 mg/kg	5.92	22.4	21.8	42.9	232	67.8	94.3	72	18.5	34.4	43.4	67.4	19.6	42.8	72.1	28.8	132	39.2	30.6	30.8	120	128	40.2	41.9	47.5	80.4	36.1	14.4	47.2	39.1
<b>Inorganics</b>																															
Cyanide, Total	<1 mg/kg	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
Sulphide, Easily Liberated	<15 mg/kg	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	
Water Soluble Sulphate as SO4 2-3 Extract	<0.08 g/l	0.0315	0.0163	0.408	0.0168	0.0851	0.0897	0.0522	0.106	0.0602	0.101	0.305	0.104	0.0731	1.07	<0.008	0.019	0.814	-	-	-	-	-	-	-	-	-	-	-	-	
Sulphate, Total	<48 mg/kg	415	13100	3780	97.1	685	248	437	586	674	818	1510	417	914	7400	471	346	2420	857	852	4650	282	87	572	1160	1050	304	321	142	577	
<b>Petroleum Hydrocarbons</b>																															
Aliphatics >C5 - C6	<10 µg/kg	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C6 - C8	<10 µg/kg	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C8 - C10	<10 µg/kg	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C10 - C12	<10 µg/kg	-	-	-	11400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C12 - C16	<100 µg/kg	-	-	-	12200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C16 - C21	<100 µg/kg	-	-	-	32200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C21 - C35	<100 µg/kg	-	-	-	20000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C35 - C44	<100 µg/kg	-	-	-	694	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C44 - C49	<100 µg/kg	-	-	-	994	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aliphatics >C49 - C54	<100 µg/kg	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics >C5 - C12	<10 µg/kg	-	-	-	17.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics >C12 - C35	<100 µg/kg	-	-	-	43600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics >C35 - C44	<100 µg/kg	-	-	-	44300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics >C44 - C49	<100 µg/kg	-	-	-	43600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics >C49 - C54	<100 µg/kg	-	-	-	44300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC5 - EC7	<10 µg/kg	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC7 - EC8	<10 µg/kg	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC8 - EC10	<10 µg/kg	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC10 - EC12	<10 µg/kg	-	-	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC12 - EC16	<100 µg/kg	-	-	-	28400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC16 - EC21	<100 µg/kg	-	-	-	43100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC21 - EC35	<100 µg/kg	-	-	-	137000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC35 - EC44	<100 µg/kg	-	-	-	36200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC44 - EC49	<100 µg/kg	-	-	-	21700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Aromatics >EC49 - EC54	<100 µg/kg	-	-	-	14500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aromatics >EC5 - EC12	<100 µg/kg	-	-	-	143	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aromatics >EC12 - EC35	<100 µg/kg	-	-	-	229000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aromatics >EC35 - EC44	<100 µg/kg	-	-	-	250000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aromatics >EC44 - EC49	<100 µg/kg	-	-	-	265000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aromatics >EC49 - EC54	<100 µg/kg	-	-	-	229000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aromatics >EC54 - C59	<100 µg/kg	-	-	-	265000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics & Aromatics >C5 - C35	<100 µg/kg	-	-	-	273000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics & Aromatics >C35 - C44	<100 µg/kg	-	-	-	309000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Aliphatics & Aromatics >C44 - C49	<100 µg/kg	-	-	-	3090																										

**Table 2. Groundwater Analytical Data Corus Phase I Site Investigation September 2010**

	Location Depth (m) Sample Date	R01	R02	R03	R04	WS01	WS02
		9	6.5	4.5	6.5	2	2
		30/09/2010	30/09/2010	30/09/2010	30/09/2010	30/09/2010	30/09/2010
<b>Metals</b>							
Arsenic (diss.filt)	<0.12 µg/l	<0.12	0.96	0.149	0.991	0.453	0.851
Boron (diss.filt)	<9.4 µg/l	85	133	61.2	101	234	219
Cadmium (diss.filt)	<0.1 µg/l	<0.1	0.214	<0.1	<0.1	0.373	<0.1
Chromium (diss.filt)	<0.22 µg/l	5.36	5.92	3.59	4.99	2.86	6.77
Copper (diss.filt)	<0.85 µg/l	<0.85	1.05	<0.85	1.42	4.04	0.899
Lead (diss.filt)	<0.02 µg/l	0.035	0.037	0.032	<0.02	0.056	0.207
Nickel (diss.filt)	<0.15 µg/l	2.67	7.83	19	11.8	49.5	10.9
Selenium (diss.filt)	<0.39 µg/l	<0.39	<0.39	<0.39	0.87	<0.39	<0.39
Zinc (diss.filt)	<0.41 µg/l	18	59.7	25.5	44	30.4	15.6
Mercury (diss.filt)	<0.01 µg/l	0.104	<0.01	<0.01	<0.01	<0.01	<0.01
<b>Petroleum Hydrocarbons</b>							
EPH Band >C10-C12 (aq)	<35 mg/kg	-	75	<10	-	-	10.1
EPH Band >C12-C16 (aq)	<35 mg/kg	-	2110	15.1	-	-	32
EPH Band >C16-C21 (aq)	<35 mg/kg	-	106	116	-	-	41.9
EPH Band >C21-C28 (aq)	<35 mg/kg	-	135	265	-	-	35.2
EPH Band >C35-C40 (aq)	<35 mg/kg	-	44.8	123	-	-	21.1
EPH Band >C28-C35 (aq)	<35 mg/kg	-	155	303	-	-	37.6
EPH Range >C10-C40 (aq)	<35 mg/kg	-	2630	822	-	-	178
GRO >C5-C12	<44 µg/kg	-	<50	<50	-	-	<50
<b>BTEX</b>							
Benzene	<10 µg/kg	-	<7	<7	-	-	<7
Toluene	<2 µg/kg	-	<4	<4	-	-	<4
Ethylbenzene	<3 µg/kg	-	<5	<5	-	-	<5
m,p-Xylene	<6 µg/kg	-	<8	<8	-	-	<8
o-Xylene	<3 µg/kg	-	<3	<3	-	-	<3
m,p,o-Xylene	<10 µg/kg	-	<10	<10	-	-	<10
BTEX, Total	<10 µg/kg	-	<10	<10	-	-	<10
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>							
Naphthalene (aq)	<9 µg/kg	-	<0.1	0.292	-	-	0.18
Acenaphthylene (aq)	<12 µg/kg	-	<0.015	<0.011	-	-	<0.011
Acenaphthene (aq)	<8 µg/kg	-	<0.011	0.0181	-	-	<0.015
Fluorene (aq)	<10 µg/kg	-	<0.014	0.0367	-	-	0.02
Phenanthrene (aq)	<15 µg/kg	-	<0.022	0.148	-	-	0.135
Anthracene (aq)	<16 µg/kg	-	<0.015	<0.015	-	-	<0.015
Fluoranthene (aq)	<17 µg/kg	-	<0.014	0.0326	-	-	0.0201
Pyrene (aq)	<15 µg/kg	-	<0.015	0.0318	-	-	0.0241
Benzo(a)anthracene (aq)	<14 µg/kg	-	<0.017	0.0176	-	-	<0.017
Chrysene (aq)	<10 µg/kg	-	<0.013	0.0206	-	-	<0.013
Benzo(b)fluoranthene (aq)	<15 µg/kg	-	<0.023	<0.023	-	-	<0.023
Benzo(k)fluoranthene (aq)	<14 µg/kg	-	<0.027	<0.027	-	-	<0.027
Benzo(a)pyrene (aq)	<15 µg/kg	-	<0.009	<0.009	-	-	<0.009
Indeno(1,2,3-cd)pyrene (aq)	<18 µg/kg	-	<0.014	<0.014	-	-	<0.014
Dibenzo(a,h)anthracene(aq)	<23 µg/kg	-	<0.016	<0.016	-	-	<0.016
Benzo(g,h,i)perylene (aq)	<24 µg/kg	-	<0.016	<0.016	-	-	<0.016
Polycyclic aromatic hydrocarbons, Total USEPA 16 (aq)	<118 µg/kg	-	<0.1	0.597	-	-	0.39
<b>Other</b>							
Secondary butyl ether (MTRB)	<5 µg/kg	-	<3	<3	-	-	<3
Phenols, Total monohydric	<0.025 mg/kg	<0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Hardness, Total as CaCO3	<1 mg/l	361	408	440	447	412	341
Cyanide, Total	<1 mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sulphate	<3 mg/l	205	212	379	304	307	83.1
Sulphide	<0.01 mg/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
pH	1 pH Units	7.06	7.19	6.17	6.97	7.26	7.03

- = not reported

Table 3. Soil Analytical Data - Tata Steel Phase II Site Investigation 2011/2

Location Date Sampled Units/LOD	TP12 1 19.01.2012	TP12 2 19.01.2012	TP13 1 19.01.2012	TP13 1.5 19.01.2012	TP14 1 19.01.2012	TP14 2 19.01.2012	TP15 0.8 18.01.2012	TP15 1.5 18.01.2012	TP16 0.95 18.01.2012	TP16 1.8 18.01.2012	TP17 0.5 19.01.2012	TP18 1.3 18.01.2012	TP19 0.55 18.01.2012	TP19 1.1 18.01.2013	TP20 0.8 19.01.2012	TP20 1.2 19.01.2012	TP20 2 19.01.2012	TP21 0.8 19.01.2012	TP21 1.5 19.01.2012	TP21 2.2 19.01.2012	
																					TP12 1 19.01.2012
<b>Metals</b>																					
Arsenic	<0.6 mg/kg	-	6.62	5.55	-	31.4	7.21	-	7.33	n.r.	17.5	12.7	1.87	n.r.	13.2	3.87	n.r.	n.r.	32.1	n.r.	n.r.
Cadmium	<0.02 mg/kg	-	0.503	0.283	-	0.413	0.211	-	0.124	n.r.	0.495	1.26	<0.02	n.r.	0.256	0.708	n.r.	n.r.	0.825	n.r.	n.r.
Chromium	<0.9 mg/kg	-	22.3	22.1	-	5.44	20.8	-	18.3	n.r.	19.4	20.9	7.03	n.r.	15.4	11.1	n.r.	n.r.	93.7	n.r.	n.r.
Copper	<1.4 mg/kg	-	31.9	38.9	-	96.8	42	-	156	n.r.	53.8	13.9	161	n.r.	12	8.55	n.r.	n.r.	84	n.r.	n.r.
Lead	<0.7 mg/kg	-	19.6	44.8	-	62.3	16.9	-	26.6	n.r.	32.7	15.7	27.3	n.r.	15.7	11.6	n.r.	n.r.	121	n.r.	n.r.
Mercury	<0.14 mg/kg	-	<0.14	<0.14	-	<0.14	<0.14	-	<0.14	n.r.	0.156	<0.14	<0.14	n.r.	<0.14	<0.14	n.r.	n.r.	0.148	n.r.	n.r.
Nickel	<0.2 mg/kg	-	42.5	45.1	-	55.6	37.2	-	6.72	n.r.	31.7	10.7	2.48	n.r.	9.48	9.89	n.r.	n.r.	25.3	n.r.	n.r.
Selenium	<1 mg/kg	-	<1	1.07	-	2.14	<1	-	<1	n.r.	1.28	2.11	5.33	n.r.	<1	<1	n.r.	n.r.	2.97	n.r.	n.r.
Zinc	<1.9 mg/kg	-	109	105	-	47.7	65.7	-	90.7	n.r.	114	41.5	10.3	n.r.	21.8	38	n.r.	n.r.	125	n.r.	n.r.
Boron, water soluble	<1 mg/kg	-	<1	<1	-	<1	<1	-	<1	n.r.	1.15	<1	<1	n.r.	<1	<1	n.r.	n.r.	2.52	n.r.	n.r.
<b>Petroleum Hydrocarbons</b>																					
TPH >C6-C40	<10 mg/kg	<10	-	58.4	-	-	-	329	-	<10	n.r.	n.r.	n.r.	n.r.	n.r.	1850	n.r.	n.r.	n.r.	n.r.	1070
<b>Semi Volatile Organic Compounds (SVOCs)</b>																					
Phenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Pentachlorophenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
n-Nitroso-n-dipropylamine	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Nitrobenzene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Isophorone	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Hexachloroethane	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Hexachlorocyclopentadiene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Hexachlorobutadiene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Hexachlorobenzene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
n-Dioctyl phthalate	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Dimethyl phthalate	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Diethyl phthalate	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
n-Dibutyl phthalate	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Dibenzofuran	<100 µg/kg	<100	-	-	2490	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Carbazole	<100 µg/kg	<100	-	-	428	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Butylbenzyl phthalate	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
bis(2-Ethylhexyl) phthalate	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
bis(2-Chloroethoxy)methane	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
bis(2-Chloroethyl)ether	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Azobenzene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
4-Nitrophenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
4-Nitroaniline	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
4-Methylphenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
4-Chlorophenylphenylether	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
4-Chloroaniline	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
4-Chloro-3-methylphenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
4-Bromophenylphenylether	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
3-Nitroaniline	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2-Nitrophenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2-Nitroaniline	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2-Methylphenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
1,2,4-Trichlorobenzene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2-Chlorophenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2,6-Dinitrotoluene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2,4-Dinitrotoluene	<100 µg/kg	<100	-	-	428	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2,4-Dimethylphenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2,4-Dichlorophenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2,4,6-Trichlorophenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2,4,5-Trichlorophenol	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
1,4-Dichlorobenzene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
1,3-Dichlorobenzene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
1,2-Dichlorobenzene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2-Chloronaphthalene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
2-Methylnaphthalene	<100 µg/kg	<100	-	-	6530	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Acenaphthylene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Acenaphthene	<100 µg/kg	<100	-	-	603	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Anthracene	<100 µg/kg	<100	-	-	111	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Benzo(a)anthracene	<100 µg/kg	<100	-	-	329	-	<100	-	<100	-	-	<100	-	<100	-	-	-	-	-	-	-
Benzo(b)fluoranthene	<100 µg/kg	<100	-	-	<100	-	<100	-	<100	-											



**Table 5. Summary of ground gas monitoring (maximum reading recorded with the exception of oxygen where the minimum reading is recorded). Tata Steel Phase II Factual and Interpretive Geo-Environmental Report. February 2012**

<b>Borehole ID</b>	<b>Carbon Dioxide (%)</b>	<b>Methane (%)</b>	<b>Oxygen (%)</b>	<b>Hydrogen sulphide (ppm)</b>	<b>Gas Flow (l/hr)</b>
R01	6.7	0.0	1.8	0.0	0.1
R02	7.1	0.0	6.8	0.0	0.6
R03	5.7	0.0	1.0	0.0	2.5
R06	3.1	0.0	14.1	0.0	0.5
WS01	1.4	0.0	18.4	0.0	0.6
WS02	7.9	0.0	4.1	0.0	0.0
WS06	4.1	0.0	15.9	0.0	0.0

Table A6 : Pollution Potential - Environmental Risk Assessment

Activity	Substance	Storage Capacity	Annual Consumption / production <sup>(a)</sup>	Storage Arrangements	Key Environmental Properties	Pollution Potential
Vehicle refuelling & fuel supply to auxiliary burners, the emergency diesel generator and the emergency fire pump	Fuel oil	80,000 litres	500 tonnes	Above ground tank double skinned vessel	Liquid Lighter fractions may evaporate. Biodegradable - may generate CO <sub>2</sub> and CH <sub>4</sub> .	Harmful to aquatic organisms. Film formed on surface of water may affect oxygen transfer. May affect aquifer quality (drinking water).
Boiler water treatment	Sodium hydroxide	3,000 litres	<40 tonnes	Bunded AST	Liquid Highly soluble in water. Highly reactive - will breakdown rapidly.	High pH can damage soil. High pH toxic to aquatic organisms. May affect aquifer quality (drinking water).
	Hydrochloric acid	3,000 litres	<60 tonnes	Bunded AST	Liquid	Low pH can damage soil. Low pH toxic to aquatic organisms. May affect aquifer quality (drinking water).
	Phosphate	150 Litres	<3 tonnes	Stored in dedicated sealed vessel	Liquid	May promote eutrophication in waterways. May affect aquifer quality (drinking water).
	Carbohydrazide (corrosion inhibitor)	150 Litres	< 1 tonne	Stored in dedicated sealed vessel	Liquid Soluble in water. Oxygen scavenger	High pH can damage soil. High pH toxic to aquatic organisms. May affect aquifer quality (drinking water).
Waste Water Treatment	Acids for pH control	3m3	< 5 tonnes	Contained in tank adjacent to the wastewater storage tank ( FGT area)	Liquid.	High pH can damage soil. High pH toxic to aquatic organisms. May affect aquifer quality (drinking water).
Flue Gas Treatment	Urea Prills	20 m3 or 10 tonnes	500 tonnes	Stored in "big-bags"	Solid. Fully soluble in water	May promote eutrophication in waterways Possibility of irritation and burning on contact May affect aquifer quality (drinking water). Degredation of plant life
	Hydrated Lime	110 m3 or 60 tonnes	2,000 tonnes	Stored in above ground sealed silo	Solid powder Highly reactive with water - exothermic. Caustic.	High pH can damage soil. High pH toxic to aquatic organisms. May affect aquifer quality (drinking water).
	Activated Carbon	75 m3 or 40 tonnes	60 tonnes	Stored in above ground sealed silo	Solid. Highly flammable. Insoluble. Reacts with strong oxidising chemicals.	Not harmful to soil or water environments.
Maintenance	Other chemicals - eg oils and greases for transformers and switchgear.	Subject to maintenance replacement cycle		In appropriate dedicated storage area in small containers with suitable segregation	Liquid/solid	Harmful to aquatic organisms. Film formed on surface of water may affect oxygen transfer. May affect aquifer quality (drinking water).
Wastes/Materials	Bottom ash	1,300 tonnes	37,720 tonnes		Solid.	Not harmful to soil or water environments.
	ERF Ferrous metal	100 tonnes	820 tonnes	Stored in ferrous metal storage area which is enclosed and sealed concrete hardstanding with contained drainage. Transport occurs by road vehicles off site for recycling	Solid.	Not harmful to soil or water environments.
	FGT Residues	115 m <sup>3</sup> or 80 tonnes	6,560 tonnes	FGT residue silo dedicated area	Solid.	Hazardous waste transferred by dedicated powder tanker to licenced facility
	Other wastes - e.g. waste oils & chemicals, acids	Subject to maintenance replacement cycle		Dedicated skips/containers in suitable contained area	Solid/liquid.	Wastes likely to contain a variety of substances. May affect aquifer quality (drinking water).
	Waste Water	160 m <sup>3</sup>		Open topped sealed pit	Liquid	Waste water may contain a variety of substances. May affect aquifer quality (drinking water).

<sup>(a)</sup> based on 8,000 h of operation per year.

Appendix C

## Groundsure Report





**SearchFlow**  
An MDA Business

Report Reference: SF-921791  
Your Reference: SF14601815000  
Report Date: Jul 30, 2010  
Report Delivery Method: **Email - pdf**  
Client Email: searchreturns@searchflowsearches.co.uk

## **GroundSure Data**

**Address: Land at Pontefract Lane, Leeds, LS9 9HW**

Dear Sir/Madam,

Thank you for placing your order with SearchFlow. Please find enclosed the GroundSure Data report as requested.

If you need any further assistance, please do not hesitate to contact our helpline on 0870 787 7625 quoting the above report reference number

Yours faithfully,

SearchFlow

Enc.  
GroundSure Data

# GroundSure Data

Address: Land at Pontefract Lane, Leeds, LS9 9HW

Date: Jul 30, 2010

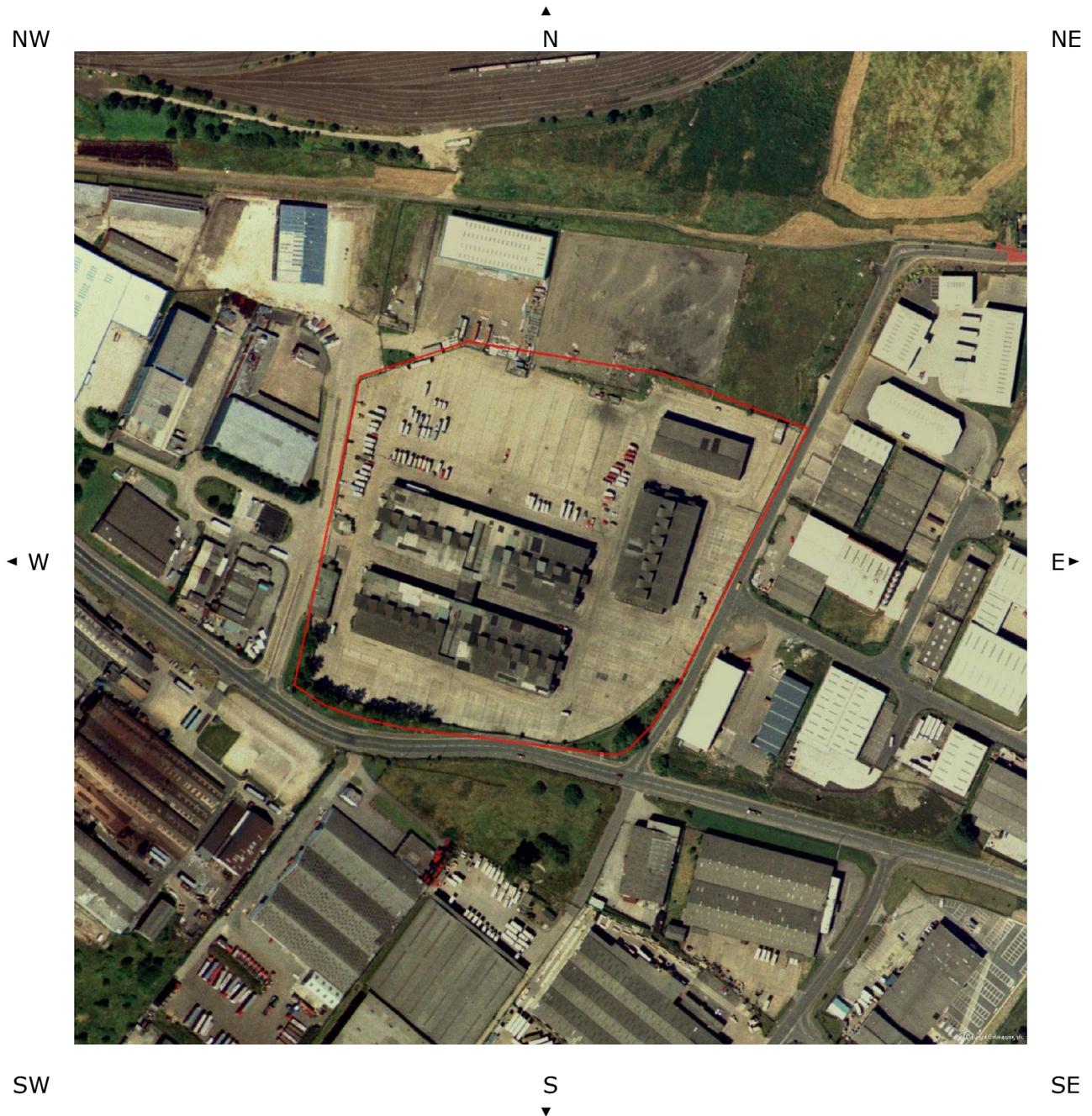
Report Reference: SF-921791

Your Reference: SF14601815000

Client: MDA Searchflow Ltd



# Aerial Photograph of Study Site



Aerial photography supplied by Getmapping PLC.  
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Site Name: Land at Pontefract Lane, Leeds, LS9 9HW  
Grid Reference: 432793,432531

# Overview of Findings

For further details on each dataset, please refer to each individual section in the main report as listed. Where the database has been searched a numerical result will be recorded. Where the database has not been searched '-' will be recorded.

Report Section	Number of records found within (X) m of the study site boundary					
	on-site	0-50	51-250	251-500	501-1000	1000-1500
<b>1. Historical Industrial Sites</b>						
1.1 Potentially Contaminative Past Land Use						
Records of potentially contaminative past land use ( 1:10,000 scale mapping )	7	11	37	-	-	-
1.2 Additional Information – Historical Tanks ( 1:2,500,1:1,250 scale mapping )	0	0	5*	-	-	-
1.3 Additional Information – Historical Energy Features ( 1:2,500,1:1,250 scale mapping )	7	0	0*	-	-	-
1.4 Additional Information – Historical Petrol and Fuel Site Database ( 1:2,500,1:1,250 scale mapping )	0	0	0*	-	-	-
1.5 Additional Information – Historical Vehicle Repair and Garages ( 1:2,500,1:1,250 scale mapping )	0	0	0*	-	-	-
1.6 Potentially Infilled Land						
Records of potentially infilled land ( 1:10,000 scale mapping )	5	4	0*	-	-	-
*51-100m						
<b>2. Environmental Permits, Incidents and Registers</b>						
2.1 Industrial Sites Holding Environmental Permits and/or Authorisations						
Records of historic IPC Authorisations	0	0	0	0	-	-
Records of Part A(1) and IPPC Authorised Activities	0	0	0	3	-	-
Records of Water Industry Referrals (potentially harmful discharges to the public sewer)	0	0	0	0	-	-
Records of Red List Discharge Consents (potentially harmful discharges to controlled waters)	0	0	0	0	-	-
Records of List 1 Dangerous Substances Inventory sites	0	0	0	0	-	-
Records of List 2 Dangerous Substances Inventory sites	0	0	2	0	-	-
Records of Part A(2) and Part B Activities and Enforcements	1	0	1	9	-	-
Records of Category 3 or 4 Radioactive Substances Authorisations	0	0	0	0	-	-
Records of Licensed Discharge Consents	0	0	0	0	-	-
Records of Planning Hazardous Substance Consents and Enforcements	0	0	0	0	-	-
2.2 Records of COMAH and NIHHS sites	0	0	1	0	-	-
2.3 Environment Agency Recorded Pollution Incidents						
National Incidents Recording System, List 2	0	1	1	-	-	-
National Incidents Recording System, List 1	0	0	0	-	-	-
2.4 Sites Determined as Contaminated Land under Part IIA EPA 1990	0	0	0	0	-	-

3. Landfill and Other Waste Sites	on-site	0-50	51-250	251-500	501-1000	1000-1500
<b>3.1 Landfill Sites</b>						
Environment Agency Registered landfill Sites	0	0	0	0	0	-
Landfill Data – Operational Landfill Sites	0	0	0	0	1	-
Environment Agency Historic Landfill Sites	0	0	0	1	7	7
Landfill Data – Non-Operational Landfill Sites	0	0	0	0	2	-
BGS/DoE Landfill Site Survey	0	0	0	0	0	0
GroundSure Local Authority Landfill Sites Data	0	0	0	0	5	6
<b>3.2 Landfill and Other Waste Sites Findings</b>						
Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	-	-
Non-Operational Waste Treatment, Transfer and Disposal Sites	0	0	0	0	-	-
Environment Agency licensed Waste Sites	0	0	2	0	16	7

4. Current Land Uses	on-site	0-50	51-250	251-500	501-1000	1000-1500
4.1 Current Industrial Sites Data	2	4	40	-	-	-
4.2 Records of Petrol and Fuel Sites	0	0	0	0	-	-
4.3 Underground High Pressure Oil and Gas Pipelines	0	0	0	0	-	-

5. Geology	Description
5.1 Are there any records of Artificial Ground and Made Ground present beneath the study site? *	Yes
5.2 Are there any records of Superficial Ground and Drift Geology present beneath the study site? *	No
5.3 For records of Bedrock and Solid Geology beneath the study site* see the detailed findings section. Source: Scale: 1:50,000 BGS Sheet 070	

\* This includes an automatically generated 50m buffer zone around the site.

6. Hydrogeology and Hydrology	on-site	0-50	51-250	251-500	501-1000	1001-2000
<b>6.1 Environment Agency Groundwater Vulnerability and Soil Classification</b>						
Is a Minor Aquifer present on site?	Yes	-	-	-	-	-
Is a Major Aquifer present on site?	No	-	-	-	-	-
Are there any Soil Classification records present on site?	Yes	-	-	-	-	-
6.2 Groundwater Abstraction Licences (within 1000m of the study site).	0	0	0	4	0	-
6.3 Surface Water Abstraction Licences (within 1000m of the study site).	0	0	0	0	0	-
6.4 Potable Water Abstraction Licences (within 2000m of the study site).	0	0	0	0	0	0
6.5 Are there any Source Protection Zones within 500m of the study site?	No					
6.6 River Quality	on-site	0-50	51-250	251-500	501-1000	1001-1500
Is there any Environment Agency information on river quality within 500m of the study site?	No	No	No	No	No	Yes
6.7 Detailed River Network entries within 500m of the study site	0	0	0	0	-	-
6.8 Surface water features within 250m of the study site	No	No	No	-	-	-

## 7. Flooding

7.1 Are there any Environment Agency indicative Zone 2 floodplains within 250m of the study site?	No
7.2 Are there any Environment Agency indicative Zone 3 floodplains within 250m of the study site?	No
7.3 Are there any Flood Defences within 250m of the study site?	No
7.4 Are there any areas benefiting from Flood Defences within 250m of the study site?	No
7.5 Are there any areas used for Flood Storage within 250m of the study site?	No
7.6 What is the maximum BGS Groundwater Flooding susceptibility within 50m of the study site?	High
7.7 What is the BGS confidence rating for the Groundwater Flooding susceptibility areas?	Moderately Low

## 8. Designated Environmentally Sensitive Sites

	on-site	0-50	51-250	251-500	501-1000	1001-1500
8.1 Records of Sites of Special Scientific Interest (SSSI)	0	0	0	0	-	-
8.2 Records of National Nature Reserves (NNR)	0	0	0	0	-	-
8.3 Records of Local Nature Reserves (LNR)	0	0	0	0	-	-
8.4 Records of Special Areas of Conservation (SAC)	0	0	0	0	-	-
8.5 Records of Special Protection Areas (SPA)	0	0	0	0	-	-
8.6 Records of Ramsar sites	0	0	0	0	-	-
8.7 Records of World Heritage Sites	0	0	0	0	-	-
8.8 Records of Environmentally Sensitive Areas	0	0	0	0	-	-
8.9 Records of Areas of Outstanding Natural Beauty (AONB)	0	0	0	0	-	-
8.10 Records of National Parks	0	0	0	0	-	-
8.11 Records of Nitrate Sensitive Areas	0	0	0	0	-	-

## 9. Additional Information

	on-site	0-50	51-250	
9.1 Records of mobile phone transmitters	0	0	0	
9.2 Records of potential sites of OfCom telecommunications masts	0	0	0	
9.3 Have any overhead transmission lines been identified in proximity to the study site in this search?				No

## 10. Natural Hazards

10.1 What is the maximum risk of natural ground subsidence?	Moderate
10.2 Is the property in a radon Affected Area as defined by the Health Protection Agency (HPA) and if so what percentage of homes are above the Action Level?	The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level
Is the property in an area where radon protection measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?	No radon protective measures are necessary

## 11. Mining

11.1 Are there any coal mining areas within 75m of the study site?	Yes
11.2 What is the risk of subsidence relating to shallow mining within 150m of the study site?	Low-Moderate
11.3 Are there any brine affected areas within 75m of the study site?	No

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## Using this Report

The following report is designed by Environmental Consultants for Environmental Professionals bringing together the most up-to-date market leading environmental data. This report is provided under and subject to the Terms & Conditions agreed between GroundSure and the Client. The document contains the following sections:

### 1. Historical Industrial Sites

Provides information on past land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. Potentially Infilled Land features are also included. This search is conducted using radii of up to 250m.

### 2. Environmental Permits, Incidents and Registers

Provides information on Regulated Industrial Activities and Pollution Incidents as recorded by Regulatory Authorities, and sites determined as Contaminated Land. This search is conducted using radii up to 500m.

### 3. Landfills and Other Waste Sites

Provides information on landfills and other waste sites that may pose a risk to the study site. This search is conducted using radii up to 1500m.

### 4. Current Land Uses

Provides information on current land uses that may pose a risk to the study site in terms of potential contamination from activities or processes. These searches are conducted using radii of up to 500m. This includes information on potentially contaminative industrial sites, petrol stations and fuel sites as well as high pressure underground oil and gas pipelines.

### 5. Geology

Provides information on artificial and superficial deposits and bedrock beneath the study site.

### 6. Hydrogeology and Hydrology

Provides information on groundwater vulnerability, soil leaching potential, abstraction licenses, Source Protection Zones (SPZ) and river quality. These searches are conducted using radii of up to 2000m.

### 7. Flooding

Provides information on surface water flooding, flood defences, flood storage areas and groundwater flood areas. This search is conducted using radii of up to 250m.

### 8. Designated Environmentally Sensitive Sites

Provides information on the Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Local Nature Reserves (LNR), Areas of Outstanding Natural Beauty (AONB), National Parks (NP), Environmentally Sensitive Areas, Nitrate Sensitive Areas and World Heritage Sites. These searches are conducted using radii of up to 500m.

### 9. Additional Information

Provides information on records of mobile phone transmitters, potential sites of OfCom telecommunication masts and overhead transmission lines up to 500m.

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## 10. Natural Hazards

Provides information on a range of natural hazards that may pose a risk to the study site. These factors include natural ground subsidence and radon.

## 11. Mining

Provides information on areas of coal and shallow mining.

## 12. Contacts

This section of the report provides contact points for statutory bodies and data providers that may be able to provide further information on issues raised within this report. Alternatively, GroundSure provide a free Technical Helpline (08444 159000) for further information and guidance.

### Note: Maps

Only certain features are placed on the maps within the report. All features represented on maps found within this search are given an identification number. This number identifies the feature on the mapping and correlates it to the additional information provided below. This identification number precedes all other information and takes the following format -Id: 1, Id: 2, etc. Where numerous features on the same map are in such close proximity that the numbers would obscure each other a letter identifier is used instead to represent the features. (e.g. Three features which overlap may be given the identifier "A" on the map and would be identified separately as features 1A, 3A, 10A on the data tables provided).

Where a feature is reported in the data tables to a distance greater than the map area, it is noted in the data table as "Not Shown".

All distances given in this report are in Metres (m). Directions are given as compass headings such as N: North, E: East, NE: North East from the nearest point of the study site boundary.

# 1. Historical Industrial Sites

## 1.1 Potentially Contaminative Uses identified from High Detail (1:10,000 scale) Mapping

The systematic analysis of data extracted from standard 1:10,560 and 1:10,000 scale historical maps provides the following information:

**Records of sites with a potentially contaminative past land use within 250m of the search boundary: 55**

The following records are not represented on Mapping:

Distance [m]	Direction	Use	Date
0.0	On Site	Refuse Heap	1906
0.0	On Site	Mineral Railway Sidings	1906
0.0	On Site	Mineral Railway Sidings	1891
0.0	On Site	Unspecified Heap	1891
0.0	On Site	Unspecified Pit	1990
0.0	On Site	Unspecified Pit	1978
0.0	On Site	Unspecified Pit	1969
12.0	W	Unspecified Warehouse	1978
16.0	SE	Unspecified Heap	1891
16.0	SE	Unspecified Old Shaft	1956
19.0	SE	Unspecified Old Shaft	1906
19.0	SE	Unspecified Old Shaft	1933
20.0	SW	Industrial Estate	1990
22.0	SW	Steel Foundry	1978
32.0	S	Unspecified Works	1969
32.0	S	Unspecified Works	1969
33.0	S	Unspecified Works	1978
47.0	S	Unspecified Warehouses	1978
79.0	S	Unspecified Warehouse	1978
100.0	S	Unspecified Works	1978
118.0	N	Railway Sidings	1906
118.0	N	Railway Sidings	1933
120.0	N	Railway Sidings	1990
120.0	N	Railway Sidings	1956
120.0	N	Railway Sidings	1969
120.0	N	Railway Sidings	1978
136.0	N	Railway Sidings	1891
139.0	S	Unspecified Tank	1906
142.0	NE	Coal Depot	1906
142.0	NE	Mineral Railway Sidings	1891
142.0	NE	Railway Buildings	1891
145.0	NE	Railway Building	1933
149.0	NW	Abattoir	1990
149.0	NW	Abattoir	1969
149.0	NW	Abattoir	1978
150.0	W	Unspecified Tank	1990
150.0	W	Chimney	1969
150.0	W	Unspecified Tank	1978
174.0	E	Mineral Railway Sidings	1891
183.0	N	Railway Buildings	1891
186.0	NE	Railway Buildings	1933
204.0	N	Railway Building	1969
205.0	N	Railway Building	1906
205.0	N	Railway Building	1933
207.0	N	Railway Building	1891
221.0	SE	Unspecified Warehouse	1990
221.0	SE	Unspecified Warehouse	1978
228.0	SE	Tannery	1990
228.0	SE	Unspecified Works	1978
233.0	SW	Unspecified Warehouses	1978
242.0	N	Railway Building	1933
242.0	SE	Unspecified Works	1990
250.0	E	Unspecified Heap	1891
250.0	E	Unspecified Old Shaft	1906
250.0	E	Unspecified Old Shaft	1933

## 1.2 Additional Information – Historical Tank Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

**Records of historical tanks within 100m of the search boundary:**

**5**

The following records are not represented on Mapping:

Distance (m)	Direction	Use	Date
86.0	SW	Tank (Unspecified)	1968
86.0	SW	Tank (Unspecified)	1967
92.0	W	Tank (Unspecified)	1968
92.0	W	Tank (Unspecified)	1967
97.0	S	Tank (Unspecified)	1989

## 1.3 Additional Information – Historical Energy Features Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

**Records of historical energy features within 100m of the search boundary:**

**7**

The following records are not represented on Mapping:

Distance (m)	Direction	Use	Date
0.0	On Site	Electricity Sub Station	1978
0.0	On Site	Electricity Sub Station	1968
0.0	On Site	Electricity Sub Station	1995
0.0	On Site	Electricity Sub Station	1993
0.0	On Site	Electricity Sub Station	1990
0.0	On Site	Electricity Sub Station	1967
0.0	On Site	Electricity Sub Station	1978

## 1.4 Additional Information – Historical Petrol and Fuel Site Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

**Records of historical petrol stations and fuel sites within 100m of the search boundary:**

**0**

Database searched and no data found.

## 1.5 Additional Information – Historical Garage and Motor Vehicle Repair Database

The systematic analysis of data extracted from High Detailed 1:1,250 and 1:2,500 scale historical maps provides the following information.

**Records of historical garage and motor vehicle repair sites within 100m of the search boundary: 0**

Database searched and no data found.

---

## 1.6 Potentially Infilled Land

**Records of Potentially Infilled Features from 1:10,000 scale mapping within 100m of the study site: 9**

The following Historical Potentially Infilled Features derived from the Historical Mapping information is provided by GroundSure:

Distance [m]	Direction	Use	Date
0.0	On Site	Unspecified Pit	1990
0.0	On Site	Unspecified Pit	1969
0.0	On Site	Unspecified Pit	1978
0.0	On Site	Unspecified Heap	1891
0.0	On Site	Refuse Heap	1906
16.0	SE	Unspecified Heap	1891
16.0	SE	Unspecified Old Shaft	1956
19.0	SE	Unspecified Old Shaft	1933
19.0	SE	Unspecified Old Shaft	1906

## 2. Environmental Permits, Incidents and Registers Map



Authorisations, Incidents and Registers Legend



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- |   |                               |   |  |   |   |
|---|-------------------------------|---|--|---|---|
|  | Site Outline                  |  | Recorded Pollution Incident                                    |  | RAS 3 & 4 Authorisations                      |
|  | Dangerous Substances (List 1) |  | Part A(1) Authorised Processes and Historic IPC Authorisations |  | Part A(2) and Part B Authorised Processes     |
|  | Dangerous Substances (List 2) |  | Water Industry Referrals                                       |  | COMAH / NIHS Sites                            |
|  | Licensed Discharge Consents   |  | Sites Determined as Contaminated Land                          |  | Hazardous Substance Consents and Enforcements |
|  | Red List Discharge Consents   |   |  |   |   |

## 2.Environmental Permits, Incidents and Registers

### 2.1 Industrial Sites Holding Licences and/or Authorisations

Searches of information provided by the Environment Agency and Local Authorities reveal the following information:

**Records of historic IPC Authorisations within 500m of the study site: 0**

Database searched and no data found.

**Records of Part A(1) and IPPC Authorised Activities within 500m of the study site: 3**

The following Part A(1) and IPPC Authorised Activities are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance [m]	Direction	NGR	Details
20B	297.0	S	432970, 432120	Operator: Pittards Plc Installation Name: Pittards Plc Process: ANIMAL, VEGETABLE AND FOOD; TANNING HIDES AND SKINS >12 T/Day Permit Number: BK1422IV Original Permit Number: BK1422IV EPR Reference: - Issue Date: 1/8/2003 Effective Date: 8/8/2003 Last date noted as effective: 2010-04-01 Status: Superceded
21A	496.0	S	432900, 431900	Operator: Pittards Plc Installation Name: - Process: ANIMAL, VEGETABLE & FOOD; TANNING HIDES & SKINS >12 T/Day Permit Number: BK1422 Original Permit Number: BK1422 EPR Reference: - Issue Date: 1-8-2003 Effective Date: 8-8-2003 Last date noted as effective: 2004-10-01 Status: Superseded By Pas
22A	496.0	S	432900, 431900	Operator: Pittards Plc Installation Name: Pittards Plc Process: ANIMAL, VEGETABLE AND FOOD; TANNING HIDES AND SKINS >12 T/Day Permit Number: GP3131LU Original Permit Number: BK1422IV EPR Reference: - Issue Date: 25/8/2006 Effective Date: 25/8/2006 Last date noted as effective: 2010-04-01 Status: Surrender Effective

**Records of Water Industry Referrals (potentially harmful discharges to the public sewer) within 500m of the study site: 0**

Database searched and no data found.

**Records of Red List Discharge Consents (potentially harmful discharges to controlled waters) within 500m of the study site: 0**

Database searched and no data found.

**Records of List 1 Dangerous Substances Inventory Sites within 500m of the study site: 0**

Database searched and no data found.

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**Records of List 2 Dangerous Substance Inventory Sites within 500m of the study site:**
**2**

The following List 2 Dangerous Substance Inventory Site records are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance [m]	Direction	NGR	Details
3	210.0	S	432700, 432200	Name: Pittards Plc,leeds, Ls9 0np Status: Not Active Receiving Water: , Unknown, Authorised Substances: , Chromium,
4	241.0	N	432800, 432900	Name: Acorn Nisil Ltd, Leeds Status: Active Receiving Water: - Authorised Substances: , Chromium, Copper, Cyanide, Lead, Nickel, Silver, Zinc,

**Records of Part A(2) and Part B Activities and Enforcements within 500m of the study site:**
**11**

The following Part A(2) and Part B Activities are represented as points on the Authorisations, Incidents and Registers map:

ID	Distance [m]	Direction	NGR	Details
8	0.0	On Site	432800, 432400	Address: Vaw Motorcast Ltd Unit 41, Knowsthorpe Way,leeds,ls9 0sw Process: Foundry & Casting Process Status: Unknown Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
9	234.0	W	432400, 432400	Address: Catton & Co Ltd Pontefract Lane, Cross Green Ind Est,cross Green Approach,na Process: Foundry & Casting Process Status: Unknown Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
10	257.0	SE	433046, 432219	Address: T Shea & Sons, Knowsthorpe Road, Cross Green Leeds Ls9. Process: Mineral Processe Status: Not Given Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
11B	285.0	S	432965, 432131	Address: National Mini-mix, 40a Cross Green Ind Estate, Leeds Ls9 P Process: Cement/lime/mortar Process Status: Current Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
12C	297.0	S	432900, 432100	Address: Pittards Plc Knowesthorpe Rd, Cross Green,leeds,ls9 0np Process: Leather/hide/tannery Process Status: Unknown Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
13C	297.0	S	432900, 432100	Address: Pittards Plc Knowesthorpe Rd, Cross Green,leeds,ls9 0np Process: Coating & Enamelling Process Status: Unknown Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
14	327.0	SE	433000, 432100	Address: Lafarge Redland, Knowsthorpe Lane, Cross Green, Ls9 0np. Process: Cement & Lime Processes Status: Current Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
15D	408.0	SW	432300, 432200	Address: Pioneer Concrete Cross Green Way, Cross Green Ind Est,leeds,ls9 0se Process: Cement/lime/mortar Process Status: Unknown Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.

16D	408.0	SW	432300, 432200	Address: George Strachan & Son Ltd Grasty! Works, Cross Green Way,leeds,ls9 0se Process: Coating & Enamelling Process Status: Unknown	Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
17	438.0	SE	433294, 432259	Address: William Cook Leeds Ltd, Pontefract Lane, Cross Green, Leeds, Ls9 0sg. Process: 2 Installations Status: Not Given	Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.
18	463.0	SW	432352, 432070	Address: Hanson Aggregates, Cross Green Ind Est, Cross Green, Ls9 0se. Process: Cement & Lime Processes Status: Current	Enforcement: Data requested, not received. Date of Enforcement: Data requested, not received. Comment: Data requested, not received.

**Records of Category 3 or 4 Radioactive Substance Licences within 500m of the study site: 0**

Database searched and no data found.

**Records of Licensed Discharge Consents within 500m of the study site: 0**

Database searched and no data found.

**Records of Planning Hazardous Substance Consents and Enforcements within 500m of the study site: 0**

Database searched and no data found.

## 2.2 Dangerous or Hazardous Sites

**Records of COMAH & NIHHS sites within 500m of the study site: 1**

The following COMAH & NIHHS Authorisation records provided by the Health and Safety Executive are represented as polygons or buffered points on the Authorisations, Incidents and Registers map:

ID	Distance [m]	Direction	NGR	Address	Type	Update
19 B	220.0	SE	432700, 431800	flogas (uk) ltd,knowesthorpe gate,crossgreen ind est,leeds,ls9 0sw	COMAH	2001

## 2.3 Environment Agency Recorded Pollution Incidents

**Records of National Incidents Recording System, List 2 within 250m of the study site: 2**

The following NIRS List 2 records are represented as points on the Authorisations, Incidents and Registers Map:

ID	Distance [m]	Direction	NGR	Details
1	17.0	SW	432617, 432430	Incident Date: 25/7/2001 Incident Identification: 19099 Pollutant: Pollutant Not Identified Pollutant Description: Not Identified Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)

2	97.0	SE	432982, 432399	Incident Date: 20/2/2002 Incident Identification: 59619 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Other General Biodegradable Material or Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
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**Records of National Incidents Recording System, List 1 within 250m of the study site: 0**

Database searched and no data found.

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## 2.4 Sites Determined as Contaminated Land under Part IIA EPA 1990<sup>1</sup>

**How many records of sites determined as contaminated land under Section 78R of the Environmental Protection Act 1990 are there within 500m of the study site? 0**

Database searched and no data found.

---

<sup>1</sup>Further information on sites that have been determined under the Contaminated Land Regime is maintained by Local Authorities under Section 78R of the Environmental Protection Act 1990. Information should be available on both sites currently determined as Contaminated Land and Special Sites.

**Report Reference: SF-921791**

# 3. Landfill and Other Waste Sites Map



Landfill & Other Waste Sites Legend



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- |   |                    |   |                                       |  |                                     |
|---|--------------------|---|---------------------------------------|--|-------------------------------------|
|  | Site Outline       |  | E.A. Active Landfill                  |  | Operational Waste Treatment Licence |
|  | Search Buffers (m) |  | E.A. Historic Landfill (Area Data)    |  | Closed Waste Treatment Licence      |
|   |                    |  | E.A. Historic Landfill (Point Data)   |  | REGIS Waste Licence                 |
|   |                    |  | BGS / DoE Survey Landfill             |  | Operational Landfill                |
|   |                    |  | Local Authority Landfill (Area Data)  |  | Closed Landfill                     |
|   |                    |  | Local Authority Landfill (Point Data) |  |                                     |

## 3. Landfill and Other Waste Sites

### 3.1 Landfill Sites

#### Records from Environment Agency landfill data within 1000m of the study site: 0

Database searched and no data found.

#### Records of operational landfill sites sourced from Landmark within 1000m of the study site: 1

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance [m]	Direction	NGR	Details	
Not shown	806.0	SW	432300, 431700	Site Address: Hunslet Depot, Knowsthope Lane, LEEDS, West Yorkshire, Agency Reference: EAWML61100 Waste Type: Inert Waste Description: Inert Landfill, Inert Transfer Known Restrictions: No known restriction on source of waste	Record Date: 01-Oct-1979 Transfer Date: 01-Jun-1995 Modification Date: 01-Nov-1997 Status: Operational as far as is known Category: LANDFILL Regulator: EA - North East Region - Ridings Area (East) Size: Undefined

#### Records of Environment Agency historic landfill sites within 1500m of the study site: 15

The following landfill records are represented as either points or polygons on the Landfill and Other Waste Sites map:

ID	Distance [m]	Direction	NGR	Details	
10	499.0	SW	432300, 431900	Site Address: Refuse Tip off Knowsthorpe Lane, Knowsthorpe Lane, Cross Green Waste Licence: - Site Reference: - Waste Type: Household Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
11	511.0	E	433600, 432700	Site Address: Halton Moor No 3, Halton Moor Road, Osmondthorpe Waste Licence: - Site Reference: - Waste Type: Household Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: Leeds City Council
12	552.0	NE	433300, 433300	Site Address: Rockwood Road, Osmondthorpe Waste Licence: - Site Reference: - Waste Type: Inert Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: -
13	651.0	SW	432300, 431700	Site Address: Hunslet East Tip Site, Knowsthorpe Lane, Leeds, Hunslet, West Yorkshire Waste Licence: Yes Site Reference: - Waste Type: - Regis Reference: DUR/L/RAI001	Licence Issue: 05-Oct-1979 Licence Surrendered: Licence Hold Address: Euston Square, London Operator: Railtrack
14	672.0	NE	433700, 433000	Site Address: Halton Moor, Halton Moor Avenue, Leeds Waste Licence: Yes Site Reference: 81/32/0035, 4700/0303 Waste Type: Inert, Commercial Regis Reference: -	Licence Issue: 10-Mar-1982 Licence Surrendered: 31-Dec-1982 Licence Hold Address: Selectapost 10, Civic Hall, Leeds Operator: Leeds City Council

Not shown	755.0	SE	433100, 431500	Site Address: Knowsthorpe Way, Knowsthorpe Road, Cross Green, Leeds Waste Licence: Yes Site Reference: 4700/L1025, NE4586 Waste Type: Inert Regis Reference: YQ1/L/LEE012	Licence Issue: 26-Feb-1992 Licence Surrendered: 09-Nov-2000 Licence Hold Address: - Operator: -
Not shown	784.0	E	433800, 432700	Site Address: Halton Moor No 2, Halton Moor Road, Osmondthorpe Waste Licence: - Site Reference: - Waste Type: Industrial, Household, Liquid sludge Regis Reference: -	Licence Issue: Licence Surrendered: Licence Hold Address: - Operator: Leeds City Council
Not shown	978.0	S	432700, 431300	Site Address: Land At Knostrop Sewage Works, Knowsthorpe Lane, Leeds Waste Licence: Yes Site Reference: 1439, 4700/0769 Waste Type: Inert, Commercial Regis Reference: -	Licence Issue: 14-Nov-1989 Licence Surrendered: 05-Feb-1992 Licence Hold Address: Albert Road, Morley, Leeds Operator: -
Not shown	1081.0	SW	431800, 431500	Site Address: Curve of Roadway directly behind Severn Way Industrial Estate, Hunslet, Leeds Waste Licence: Yes Site Reference: 4700/0684 Waste Type: Inert, Commercial Regis Reference: -	Licence Issue: 21-Nov-1988 Licence Surrendered: Licence Hold Address: PO Box 9, 1 Dock Street, Leeds Operator: -
Not shown	1084.0	SW	431700, 431500	Site Address: Knostrop Depot, Hunslet Road, Leeds Waste Licence: Yes Site Reference: 415 Waste Type: Inert, Commercial Regis Reference: -	Licence Issue: 19-Apr-1984 Licence Surrendered: Licence Hold Address: PO Box 9, 1 Dock Street, Leeds Operator: -
Not shown	1084.0	SW	431700, 431500	Site Address: Severn Way, Hunslet, Leeds Waste Licence: Yes Site Reference: 4700/0643 Waste Type: Inert, Commercial Regis Reference: -	Licence Issue: 17-Dec-1987 Licence Surrendered: 11-Jun-1991 Licence Hold Address: Albert Road, Morley, Leeds Operator: -
Not shown	1227.0	S	432700, 430900	Site Address: Thwaite Farm, Skelton Grange Road, Stourton, Leeds Waste Licence: Yes Site Reference: 1439, 24, 4700/0027, 199 Waste Type: Inert, Commercial, Special, Liquid sludge Regis Reference: -	Licence Issue: 17-Jun-1977 Licence Surrendered: 25-May-1993 Licence Hold Address: Stourton, Leeds Operator: -
Not shown	1269.0	SW	432100, 431200	Site Address: Coghlan Bright Steel Limited, Hunslet Forge, Thwaite Gate, Leeds Waste Licence: Yes Site Reference: 4700/0055 Waste Type: Inert, Commercial Regis Reference: -	Licence Issue: 22-Jun-1977 Licence Surrendered: 14-Mar-1980 Licence Hold Address: Hunslet Forge, Leeds Operator: Coghlan Bright Steel Limited
Not shown	1384.0	S	433000, 430900	Site Address: Yorkshire Imperial Metals, Haigh Park Road, Stourton, Leeds, West Yorkshire Waste Licence: Yes Site Reference: 24, NE4585 Waste Type: Industrial Regis Reference: YQ1/L/IMI002	Licence Issue: 13-Mar-1977 Licence Surrendered: 27-Sep-2002 Licence Hold Address: Watton Estate Management Services, PO Box 216, Witton, Birmingham Operator: -
Not shown	1424.0	S	432600, 430900	Site Address: Thwaite Farm, Stourton, Leeds Waste Licence: Yes Site Reference: 4700/0199 Waste Type: - Regis Reference: -	Licence Issue: 26-Feb-1980 Licence Surrendered: Licence Hold Address: Stourton, Leeds Operator: -

## Records of non-operational landfill sites sourced from Landmark within 1000m of the study site: 2

The following landfill records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance [m]	Direction	NGR	Details
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Not shown	736.0	S	433100, 431700	Site Address: Knowsthorpe Road, Cross Green, LEEDS, West Yorkshire, LS9 Landfill Licence: 45DAABAL Agency Reference: EAWML65135 Waste Type: Inert Waste Description: Inert Landfill Known Restrictions: No known restriction on source of waste	Record Date: 01-Feb-1992 Transfer Date: 01-Nov-1997 Modification Date: 01-Nov-1997 Status: Licence has completion certificate Category: LANDFILL Regulator: EA - North East Region - Ridings Area (East) Size: Medium (< 75,000 tonnes/year)
Not shown	819.0	S	432518, 431613	Site Address: Knostrap Sewage Works, Knowsthorpe Lane, LEEDS, West Yorkshire, LS9 0PJ Landfill Licence: 45DBPDAL Agency Reference: Waste Type: Inert Waste Description: Inert Landfill Known Restrictions: No known restriction on source of waste	Record Date: 01-Nov-1989 Transfer Date: Modification Date: Status: Licence lapsed/cancelled/defunct/not applicable/surrendered Category: LANDFILL Regulator: EA - North East Region - Ridings Area (East) Size: Undefined

**Records of BGS/DoE non-operational landfill sites within 1500m of the study site: 0**

Database searched and no data found.

**Records of Local Authority landfill sites within 1500m of the study site: 11**

The following landfill records are represented as points or polygons on the Landfill and Other Waste Sites map:

ID	Distance [m]	Direction	Site Address	Source	Data Type
50	522.0	SW	Refuse Tip	1963 mapping	Polygon
Not shown	671.0	SW	Refuse Tip	1963 mapping	Polygon
Not shown	795.0	E	Refuse Tip	1968 mapping	Polygon
Not shown	795.0	E	Refuse Tip	1966 mapping	Polygon
Not shown	999.0	S	Refuse Tip	1963 mapping	Polygon
Not shown	1006.0	S	Refuse Tip	1963 mapping	Polygon
Not shown	1088.0	SW	Refuse Tip	1961 mapping	Polygon
Not shown	1151.0	S	Refuse Tip	1963 mapping	Polygon
Not shown	1317.0	SW	Refuse Tip	1961 mapping	Polygon
Not shown	1335.0	SW	Refuse Tip	1961 mapping	Polygon
Not shown	1336.0	SW	Refuse Tip	1961 mapping	Polygon

## 3.2 Other Waste Sites

**Records of operational waste treatment, transfer or disposal sites within 500m of the study site: 0**

Database searched and no data found.

**Records of non-operational waste treatment, transfer or disposal sites within 500m of the study site: 0**

Database searched and no data found.

**Records of Environment Agency licensed waste sites within 1500m of the study site: 25**

Report Reference: SF-921791

The following waste treatment, transfer or disposal sites records are represented as points on the Landfill and Other Waste Sites map:

ID	Distance [m]	Direction	NGR	Details	
25A	239.0	S	432939, 432170	Site Address: - Type: Physical Treatment Facility Size: < 25000 tonnes Regis Licence Number: BOW009 Operator: Timberpak Ltd Surrendered Date: - Waste Management licence No: 65268 Annual Tonnage: 0.0	Issue Date: 12/02/2004 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Timberpak Cancelled Date: - Correspondence Address: -, Ingram Works, Wortley Moor Road, Wortley, Leeds, LS12 4NE
26A	239.0	S	432939, 432170	Site Address: - Type: Physical Treatment Facility Size: >= 75000 tonnes Regis Licence Number: BOW009 Operator: Timberpak Ltd Surrendered Date: - Waste Management licence No: 65268 Annual Tonnage: 0.0	Issue Date: 12/02/2004 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Timberpak Cancelled Date: - Correspondence Address: -, Ingram Works, Wortley Moor Road, Wortley, Leeds, LS12 4NE
Not shown	595.0	S	432982, 431813	Site Address: 29a, Knowesthorpe Way, Leeds, West Yorkshire, LS9 0SW Type: ELV Facility Size: < 25000 tonnes Regis Licence Number: 000178 Operator: Mr Leon Parrish Surrendered Date: - Waste Management licence No: 65368 Annual Tonnage: 0.0	Issue Date: 28/06/2004 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Babington Car Spares Cancelled Date: - Correspondence Address: -, 1a, Swithens Lane, Rothwell, Leeds, West Yorkshire, LS26 0BS
Not shown	618.0	S	432798, 431777	Site Address: Cross Green Ind Est, Knowsthorpe Way, Leeds, West Yorkshire Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: LSS002 Operator: L S S Waste Management Ltd Surrendered Date: - Waste Management licence No: 65438 Annual Tonnage: 252000.0	Issue Date: 24/10/2005 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Knowsthorpe Site Cancelled Date: - Correspondence Address: -, Bell Hill Ind Est, Wood Lane, Rothwell, Leeds, West Yorkshire, LS26 6RS
Not shown	632.0	SE	433140, 431829	Site Address: Waste Transfer Station, Knowsthorpe Road, Cross Green Ind. Est., Leeds, West Yorkshire, LS9 0BW Type: Physical Treatment Facility Size: >= 75000 tonnes Regis Licence Number: BOW002 Operator: Shea Thomas Paul Surrendered Date: - Waste Management licence No: 65267 Annual Tonnage: 0.0	Issue Date: 16/01/2004 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: T Shea & Sons Cancelled Date: - Correspondence Address: -, Waste Transfer Station, Knowsthorpe Road, Cross Green Ind. Est., Leeds, West Yorkshire, LS9 0BW
Not shown	632.0	SE	433140, 431829	Site Address: Waste Transfer Station, Knowsthorpe Road, Cross Green Ind. Est., Leeds, West Yorkshire, LS9 0BW Type: Household, Commercial & Industrial Waste T Stn Size: >= 75000 tonnes Regis Licence Number: BOW002 Operator: Shea Thomas Paul Surrendered Date: - Waste Management licence No: 65267 Annual Tonnage: 75000.0	Issue Date: 16/01/2004 Expiry Date: - Effective Date: - Status: Modified Modified: 12/06/2007 Site Name: T Shea & Sons Cancelled Date: - Correspondence Address: -, -
31	642.0	SW	432093, 432088	Site Address: Unit 1 Cross Green Spur, Cross Green Approach, Leeds, West Yorks, LS9 0SG Type: Vehicle depollution facility Size: < 25000 tonnes Regis Licence Number: CAR226 Operator: Carolco U K Ltd Surrendered Date: - Waste Management licence No: 101267 Annual Tonnage: 0.0	Issue Date: 09/12/2009 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Carolco U K Ltd Cancelled Date: - Correspondence Address: -, -

Not shown	736.0	S	433100, 431700	Site Address: Knowsthorpe Road, Cross Green, Leeds Type: Landfill taking Non-Biodegradable Wastes Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: LEE012 Operator: Leeds Development Agency Surrendered Date: 09/11/2000 Waste Management licence No: 65135 Annual Tonnage: 0.0	Issue Date: 26/02/1992 Expiry Date: - Effective Date: - Status: Surrendered Modified: - Site Name: Knowsthorpe Way Cancelled Date: - Correspondence Address: -, Leonardo Building, 2, Rossington Street, Leeds, LS2 8HD
Not shown	774.0	S	432880, 431620	Site Address: 25, Knowsthorpe Way, Cross Green Industrial Est, Leeds, LS9 Type: Metal Recycling Site (mixed MRS's) Size: >= 25000 tonnes < 75000 tonnes Regis Licence Number: ROB002 Operator: Robinson Group Ltd Surrendered Date: - Waste Management licence No: 65137 Annual Tonnage: 0.0	Issue Date: 20/07/1992 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Robinson Group Cancelled Date: - Correspondence Address: -, Robinson House, Whiteley Road, Blaydon, Tyne And Wear, NE21 5NJ
Not shown	774.0	S	432880, 431620	Site Address: 25, Knowsthorpe Way, Cross Green Industrial Est, Leeds, LS9 Type: Metal Recycling Site (mixed MRS's) Size: >= 75000 tonnes Regis Licence Number: ROB002 Operator: Robinson Group Ltd Surrendered Date: - Waste Management licence No: 65137 Annual Tonnage: 0.0	Issue Date: 20/07/1992 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Robinson Group Cancelled Date: - Correspondence Address: -, Robinson House, Whiteley Road, Blaydon, Tyne And Wear, NE21 5NJ
Not shown	774.0	S	432880, 431620	Site Address: 25, Knowsthorpe Way, Cross Green Industrial Est, Leeds, LS9 Type: Metal Recycling Site (mixed MRS's) Size: >= 75000 tonnes Regis Licence Number: EUR001 Operator: European Metal Recycling Ltd Surrendered Date: - Waste Management licence No: 65137 Annual Tonnage: 0.0	Issue Date: 20/07/1992 Expiry Date: - Effective Date: 23/12/2004 Status: Transferred Modified: - Site Name: European Metal Recycling Cancelled Date: - Correspondence Address: -, Sirius House, Delta Crescent, Westbrook, Warrington, Cheshire, WA5 7NS
Not shown	803.0	W	431840, 432300	Site Address: Long Causeway, Cross Green, Leeds, LS9 9JD Type: Metal Recycling Site (Vehicle Dismantler) Size: < 25000 tonnes Regis Licence Number: MRC001 Operator: Mr C Purchase Surrendered Date: - Waste Management licence No: 65153 Annual Tonnage: 0.0	Issue Date: 28/10/1993 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Knostrop Autowreckers Cancelled Date: - Correspondence Address: -, Long Causeway, Cross Green, Leeds, LS9 9JD
Not shown	806.0	SW	432300, 431700	Site Address: Knowsthorpe Lane, Hunslet, Leeds, West Yorkshire Type: Landfill taking Non-Biodegradable Wastes Size: >= 75000 tonnes Regis Licence Number: RAI001 Operator: Railtrack Surrendered Date: - Waste Management licence No: 65106 Annual Tonnage: 0.0	Issue Date: 05/10/1979 Expiry Date: - Effective Date: - Status: Closure Modified: - Site Name: Hunslet East Tip Site Cancelled Date: - Correspondence Address: -, Rail Track House, Euston Square, London, NW1 2EE
Not shown	806.0	SW	432300, 431700	Site Address: Knowsthorpe Lane, Hunslet, Leeds, West Yorkshire Type: Landfill taking Non-Biodegradable Wastes Size: < 25000 tonnes Regis Licence Number: RAI001 Operator: Railtrack Surrendered Date: - Waste Management licence No: 65106 Annual Tonnage: 0.0	Issue Date: 05/10/1979 Expiry Date: - Effective Date: - Status: Closure Modified: - Site Name: Hunslet East Tip Site Cancelled Date: - Correspondence Address: -, Rail Track House, Euston Square, London, NW1 2EE

Not shown	857.0	S	433050, 431560	Site Address: Site 46, Knowsthorpe Way, Cross Green Industrial Es, Leeds, West Yorkshire, LS9 0SW Type: Material Recycling Treatment Facility Size: >= 75000 tonnes Regis Licence Number: SKE001 Operator: Skelton Ltd Surrendered Date: - Waste Management licence No: 65213 Annual Tonnage: 0.0	Issue Date: 02/11/2001 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Knowsthorpe Way Transfer Station Cancelled Date: - Correspondence Address: -, Site 46, Knowsthorpe Way, Cross Green Industrial Es, Leeds, West Yorkshire, LS9 0SW
Not shown	876.0	W	431769, 432597	Site Address: 39, Knowsthorpe Lane, Cross Green Ind Estate, Leeds, West Yorkshire, LS9 0DF Type: ELV Facility Size: < 25000 tonnes Regis Licence Number: 000177 Operator: Eastwood John Surrendered Date: - Waste Management licence No: 65363 Annual Tonnage: 0.0	Issue Date: 28/06/2004 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Cross Green Autos 1997 Cancelled Date: - Correspondence Address: -, 3, Leasowe Gardens, Hunslet, Leeds, West Yorkshire, LS10 2ER
Not shown	904.0	S	432420, 431550	Site Address: - Type: Physico-Chemical Treatment Facility Size: >= 75000 tonnes Regis Licence Number: YOR011 Operator: Waste Notts Ltd Surrendered Date: - Waste Management licence No: 65129 Annual Tonnage: 0.0	Issue Date: 20/06/1991 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Knostrop Treatment Works Cancelled Date: - Correspondence Address: -, Knostrop E T P, Knowsthorpe Lane, Leeds, West Yorkshire, LS9 0PJ
Not shown	904.0	S	432420, 431550	Site Address: - Type: Physico-Chemical Treatment Facility Size: >= 75000 tonnes Regis Licence Number: YOR011 Operator: White Rose Environmental Operations Ltd Surrendered Date: - Waste Management licence No: 65129 Annual Tonnage: 0.0	Issue Date: 20/06/1991 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Knostrop Treatment Works Cancelled Date: - Correspondence Address: -, Knostrop E T P, Knowsthorpe Lane, Leeds, West Yorkshire, LS9 0PJ
Not shown	1054.0	S	432400, 431400	Site Address: Knowsthorpe Lane, Leeds, West Yorks, LS9 0PJ Type: Clinical Waste Transfer Station Size: < 25000 tonnes Regis Licence Number: DAN031 Operator: Daniels Corporation International Ltd Surrendered Date: - Waste Management licence No: 100733 Annual Tonnage: 0.0	Issue Date: 25/11/2008 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Knostrop Treatment Works Cancelled Date: - Correspondence Address: -, -
Not shown	1131.0	SW	432000, 431500	Site Address: Unit 13, Hunslet Trading Estate, Severn Road, Leeds, LS10 1BL Type: Special Waste Transfer Station Size: < 25000 tonnes Regis Licence Number: SAF002 Operator: Safety - Kleen U K Ltd Surrendered Date: - Waste Management licence No: 65117 Annual Tonnage: 0.0	Issue Date: 21/03/1989 Expiry Date: - Effective Date: - Status: Issued Modified: - Site Name: Sefety Kleen U K Ltd Cancelled Date: - Correspondence Address: -, Unit 13, Severn Road, Hunslet Trading Estate, Leeds, LS10 1BL
Not shown	1131.0	SW	432000, 431500	Site Address: Unit 13, Hunslet Trading Estate, Severn Road, Leeds, West Yorkshire, LS10 1BL Type: Special Waste Transfer Station Size: < 25000 tonnes Regis Licence Number: SAF002 Operator: Safety Kleen U K Ltd Surrendered Date: 16/06/2004 Waste Management licence No: 65117 Annual Tonnage: 776.0	Issue Date: 21/03/1989 Expiry Date: - Effective Date: - Status: Surrendered Modified: - Site Name: Sefety Kleen U K Ltd Cancelled Date: - Correspondence Address: -, -

Not shown	1314.0	S	432600, 431100	<p>Site Address: Land Adj. Aire &amp; Calder Navigations, Thwaite Gate, Leeds</p> <p>Type: Transfer Station taking Non-Biodegradable Wastes</p> <p>Size: &lt; 25000 tonnes</p> <p>Regis Licence Number: BRI019</p> <p>Operator: British Waterways</p> <p>Surrendered Date: -</p> <p>Waste Management licence No: 61492</p> <p>Annual Tonnage: 0.0</p>	<p>Issue Date: 03/03/1994</p> <p>Expiry Date: -</p> <p>Effective Date: -</p> <p>Status: Issued</p> <p>Modified: -</p> <p>Site Name: Twaite Gate</p> <p>Cancelled Date: -</p> <p>Correspondence Address: -, Fearn's Wharf, Neptune Street, Leeds, LS9 8PB</p>
Not shown	1314.0	S	432600, 431100	<p>Site Address: Thwaite Lane, Thwaite Gate, Leeds, West Yorkshire, LS10 9RN</p> <p>Type: Household, Commercial &amp; Industrial Waste T Stn</p> <p>Size: &lt; 25000 tonnes</p> <p>Regis Licence Number: BRI019</p> <p>Operator: British Waterways</p> <p>Surrendered Date: -</p> <p>Waste Management licence No: 61492</p> <p>Annual Tonnage: 5000.0</p>	<p>Issue Date: 03/03/1994</p> <p>Expiry Date: -</p> <p>Effective Date: -</p> <p>Status: Issued</p> <p>Modified: -</p> <p>Site Name: Thwaite Gate</p> <p>Cancelled Date: -</p> <p>Correspondence Address: -, Fearn's Wharf, Neptune Street, Leeds, West Yorkshire, LS9 8PB</p>
Not shown	1457.0	S	433050, 430950	<p>Site Address: Haigh Park Road, Stourton, Leeds, West Yorkshire, LS1 1RD</p> <p>Type: Industrial Waste Landfill (Factory curtilage)</p> <p>Size: &lt; 25000 tonnes</p> <p>Regis Licence Number: IMI002</p> <p>Operator: I M I Yorkshire Alloys Ltd</p> <p>Surrendered Date: 27/09/2002</p> <p>Waste Management licence No: 65105</p> <p>Annual Tonnage: 0.0</p>	<p>Issue Date: 13/03/1977</p> <p>Expiry Date: -</p> <p>Effective Date: -</p> <p>Status: Surrendered</p> <p>Modified: -</p> <p>Site Name: I M I</p> <p>Cancelled Date: -</p> <p>Correspondence Address: -, Watton Est. Management Services, Po Box 216, Witton, Birmingham, B6 7BA</p>
Not shown	1457.0	S	433050, 430950	<p>Site Address: Haigh Park Road, Stourton, Leeds, West Yorkshire, LS1 1RD</p> <p>Type: Industrial Waste Landfill (Factory curtilage)</p> <p>Size: Unknown</p> <p>Regis Licence Number: IMI002</p> <p>Operator: I M I Yorkshire Alloys Ltd</p> <p>Surrendered Date: 27/09/2002</p> <p>Waste Management licence No: 65105</p> <p>Annual Tonnage: 0.0</p>	<p>Issue Date: 13/03/1977</p> <p>Expiry Date: -</p> <p>Effective Date: -</p> <p>Status: Surrendered</p> <p>Modified: -</p> <p>Site Name: I M I</p> <p>Cancelled Date: -</p> <p>Correspondence Address: -, Watton Est. Management Services, Po Box 216, Witton, Birmingham, B6 7BA</p>

# 4. Current Land Use Map



Current Land Use Legend



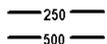
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Site Outline



Current Industrial Sites



Search Buffers (m)



Petrol & Fuel Sites



Underground High Pressure Oil & Fuel Pipelines

## 4. Current Land Uses

### 4.1 Current Industrial Data

**Records of potentially contaminative industrial sites within 250m of the study site:**

**46**

The following records are represented as points on the Current Land Uses map.

ID	Distance [m]	Direction	Company	Address	Activity	Category
1	0.0	On Site	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities
2	0.0	On Site	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities
3	21.0	SE	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities
4A	37.0	SE	Warehouse	-	Container and Storage	Transport, Storage And Delivery
5	40.0	SE	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities
6A	41.0	SE	Warehouse	-	Container and Storage	Transport, Storage And Delivery
7B	56.0	E	Fcm Ltd	6d, New Market Lane, Leeds, LS9 OSH	Catering and Non Specific Food Products	Foodstuffs
8B	56.0	E	Omega Sea Foods Ltd	6d, New Market Lane, Leeds, LS9 OSH	Fish, Meat and Poultry Products	Foodstuffs
9	56.0	SE	T & A Precision Plastics	Unit 6b, New Market Lane, Leeds, LS9 OSH	Rubber and Plastics	Industrial Products
10 C	62.0	SE	Warehouse	-	Container and Storage	Transport, Storage And Delivery
11 B	64.0	E	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities
12	72.0	W	T D G UK Ltd	New Market Green, Leeds, LS9 ORW	Distribution and Haulage	Transport, Storage And Delivery
13 D	75.0	SE	Works	-	Unspecified Works Or Factories	Industrial Features
14 C	76.0	SE	Romar Packaging Ltd	Unit 7, New Market Lane, Leeds, LS9 OSH	Packaging	Industrial Products
15	78.0	SE	EpcO Ltd	4-5, Felnax Square, Leeds, LS9 OST	General Construction Supplies	Industrial Products
16	81.0	NE	Warehouse	-	Container and Storage	Transport, Storage And Delivery
17 D	89.0	E	Olympia Metal Spinners	8a, Felnax Close, Leeds, LS9 OSR	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
18 D	90.0	SE	Vacform Group Yorkshire Ltd	8b, Felnax Close, Leeds, LS9 OSR	Rubber and Plastics	Industrial Products
19	101.0	N	Omega Signs Ltd	Newmarket Approach, Leeds, LS9 ORJ	Signs	Industrial Products
20	109.0	SE	Richard Austin Alloys (Northern) Ltd	1, Loiner Court, Leeds, LS9 OHE	Metals Manufacturers, Fabricators and Stockholders	Industrial Products
21	114.0	S	Tanks	-	Tanks (Generic)	Industrial Features
22	124.0	S	Leeds Pallets	Prince Edwards Works, Pontefract Lane, Leeds, West Yorkshire, LS9 ORA	Packaging	Industrial Products
23 E	127.0	W	Barkston Plastics Engineering Ltd	221, Pontefract Lane, Leeds, LS9 ODX	Rubber and Plastics	Industrial Products
24 E	127.0	W	Enbark Design	221, Pontefract Lane, Leeds, LS9 ODX	Furniture	Consumer Products
25	131.0	E	Warehouse	-	Container and Storage	Transport, Storage And Delivery

Report Reference: SF-921791

26	132.0	NE	Warehouse	-	Container and Storage	Transport, Storage And Delivery
27 F	143.0	SE	G Wragg Yorkshire Ltd	4, Felnax Close, Leeds, LS9 0SR	Fish, Meat and Poultry Products	Foodstuffs
28	144.0	SE	Tank	-	Tanks (Generic)	Industrial Features
29 F	144.0	SE	M B Engineering	3, Felnax Close, Leeds, LS9 0SR	Industrial Engineers	Engineering Services
30 F	145.0	SE	Weddel Swift Distribution Ltd	6, Felnax Close, Leeds, LS9 0SR	Fish, Meat and Poultry Products	Foodstuffs
31 F	146.0	SE	Bloctube Marine Services Ltd	5, Felnax Close, Leeds, LS9 0SR	Marine Engineers and Services	Engineering Services
32 G	149.0	SW	Tank	-	Tanks (Generic)	Industrial Features
33 G	150.0	SW	Tank	-	Tanks (Generic)	Industrial Features
34	154.0	S	Cross Green Industrial Park	-	Business Parks and Industrial Estates	Industrial Features
35	155.0	W	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities
36	166.0	E	Depot	-	Container and Storage	Transport, Storage And Delivery
37 G	169.0	SW	Tank	-	Tanks (Generic)	Industrial Features
38	181.0	E	Works	-	Unspecified Works Or Factories	Industrial Features
39 H	184.0	W	Chimney	-	Chimneys	Industrial Features
40	188.0	S	Hopper	-	Hoppers and Silos	Farming
41	190.0	W	William Cook	Cross Green Approach, Leeds, LS9 0SG	Industrial Engineers	Engineering Services
42 I	198.0	W	Cooling Tower	-	Chimneys	Industrial Features
43 H	199.0	W	Cooling Tower	-	Chimneys	Industrial Features
44 I	207.0	W	Cooling Tower	-	Chimneys	Industrial Features
45	212.0	SE	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities
46	242.0	W	Electricity Sub Station	-	Electrical Features	Infrastructure And Facilities

## 4.2 Petrol and Fuel Sites

**Records of petrol or fuel sites within 500m of the study site:**

**0**

Database searched and no data found.

## 4.3 Underground High Pressure Oil and Gas Pipelines

**Records of high pressure underground pipelines within 500m of the study site:**

**0**

Database searched and no data found.

## 5. Geology

### 5.1 Artificial Ground and Made Ground

The database has been searched on site, including a 50m buffer.

LEX Code	Description	Rock Type
WMGR-MGRD	INFILLED GROUND	ARTIFICIAL DEPOSIT
WMGR-MGRD	INFILLED GROUND	ARTIFICIAL DEPOSIT

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

### 5.2 Superficial Ground and Drift Geology

Database searched and no data found.

The database has been searched on site, including a 50m buffer.

### 5.3 Bedrock and Solid Geology

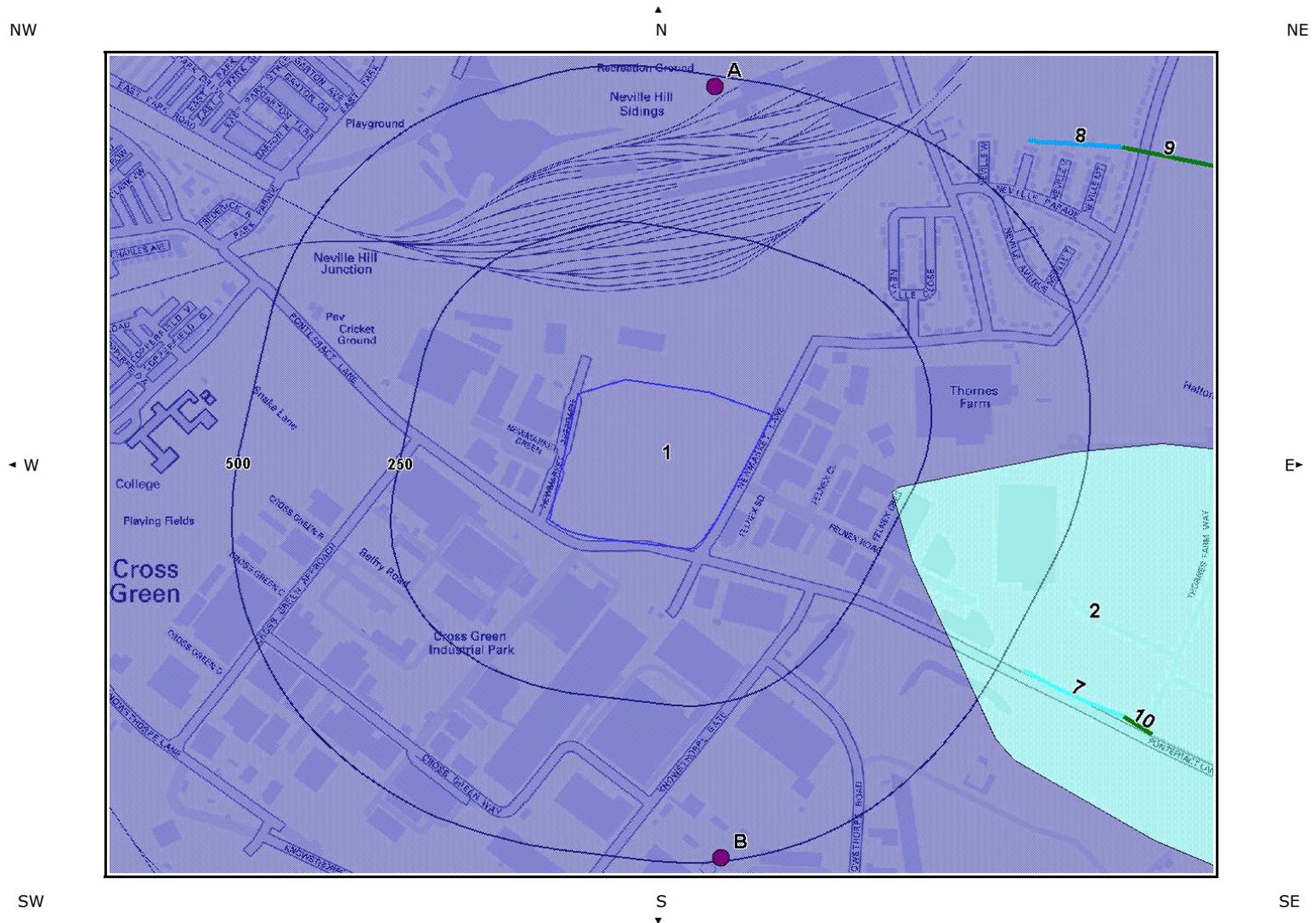
The database has been searched on site, including a 50m buffer.

LEX Code	Description	Rock Type
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE
PLCM-SDST	PENNINE LOWER COAL MEASURES FORMATION	SANDSTONE
PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION	MUDSTONE, SILTSTONE AND SANDSTONE

(Derived from the BGS 1:50,000 Digital Geological Map of Great Britain)

For more detailed geological and ground stability data please refer to the "GroundSure Geology and Ground Stability Report". Available from our website.

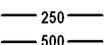
# 6. Hydrogeology and Hydrology - Aquifer and Abstraction Licence Map



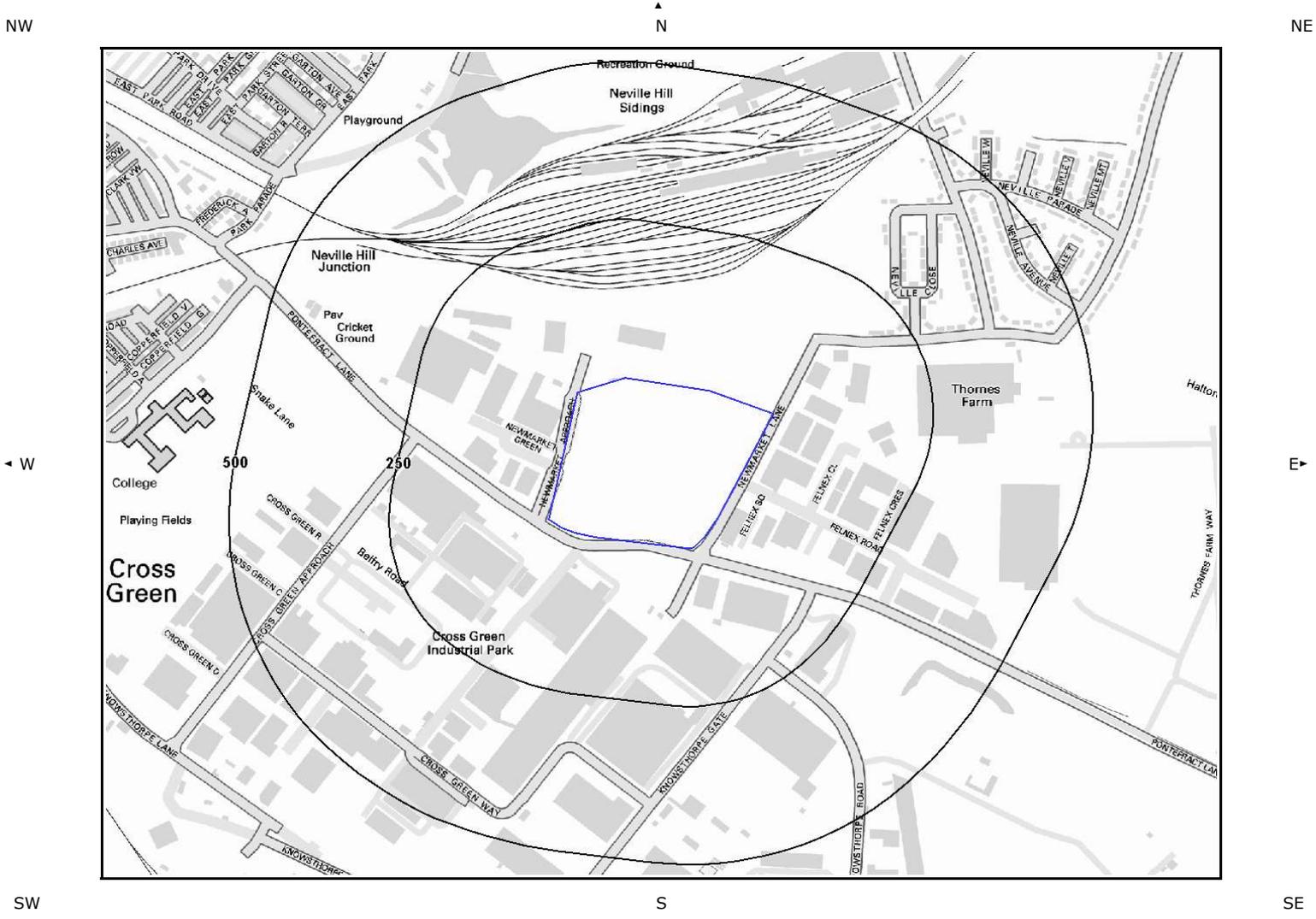
Hydrogeology and Hydrology Legend

Enabled by 

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	Site Outline		Minor Aquifer - Low Leaching Potential		Primary River
	Search Buffers (m)		Minor Aquifer - Intermediate Leaching Potential		Secondary River
			Minor Aquifer - High Leaching Potential		Tertiary River
			Major Aquifer - Low Leaching Potential		Lake/Reservoir
			Major Aquifer - Intermediate Leaching Potential		Underground River (inferred)
			Major Aquifer - High Leaching Potential		Canal
			Groundwater Abstraction Licence		Canal Tunnel
			Surface Water Abstraction Licence		Extended Culvert (greater than 50m)
					D/S of High Water Mark
					D/S seaward extension

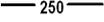
# 6b. Hydrogeology and Hydrology - SPZ and Potable Water Abstraction Map



Hydrogeology and Hydrology Legend



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-  Site Outline
-  Source Protection Zone 1 - Inner Catchment
-  Source Protection Zone 2 - Outer Catchment
-  Source Protection Zone 3 - Total Catchment
-  Source Protection Zone 4 - Zone of Special Interest
-  250 Search Buffers (m)
-  500 Search Buffers (m)
-  Potable Water Abstraction Licence
-  General Quality Assessment: Chemistry
-  General Quality Assessment: Biology

## 6. Hydrogeology and Hydrology

### 6.1 Groundwater Vulnerability and Soil Classification

**Records of aquifer and soil classification within 200m of the study site:**

**Yes**

The following groundwater information is represented as polygons on the Aquifer and Abstraction Licence Map:

ID	Distance [m]	Direction	Classification
1	0.0	On Site	Minor Aquifer/High Leaching Potential

### 6.2 Groundwater Abstraction Licences

**Are there any Groundwater Abstraction Licences within 1000m of the study site?**

**Yes**

The following Abstraction Licences records are represented as points, lines and regions on the Aquifer and Abstraction Licence Map:

ID	Distance [m]	Direction	NGR	Details
3A	482.0	N	432890, 433130	Licence No: 2/27/17/190 Details: General Use Relating To Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Coal Measures - Osmondthorpe - Leeds Data Type: Point Original Application No: 6685 Original Start Date: 19/9/1995 Expiry Date: - Issue No: 102 Version Start Date: 12/12/2004 Version End Date: -
4A	482.0	N	432890, 433130	Licence No: 2/27/17/190 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole Data Type: Point Original Application No: 6685 Original Start Date: 19/9/1995 Expiry Date: - Issue No: 100 Version Start Date: 1/4/1996 Version End Date: -
5B	496.0	S	432900, 431900	Licence No: 2/27/17/196 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole - Coal Measures - Leeds Data Type: Point Original Application No: 6736 Original Start Date: 22/1/1997 Expiry Date: 31/12/2007 Issue No: 100 Version Start Date: 12/3/1998 Version End Date: -
6B	496.0	S	432900, 431900	Licence No: 2/27/17/196 Details: General use relating to Secondary Category (Medium Loss) Direct Source: Groundwaters Point: Borehole Data Type: Point Original Application No: 6736 Original Start Date: 22/1/1997 Expiry Date: 31/12/2007 Issue No: 100 Version Start Date: 12/3/1998 Version End Date: -

### 6.3 Surface Water Abstraction Licences

**Are there any Surface Water Abstraction Licences within 1000m of the study site?**

**No**

Database searched and no data found.

### 6.4 Potable Water Abstraction Licences

**Are there any Potable Water Abstraction Licences within 2000m of the study site?**

**No**

Database searched and no data found.

Report Reference: SF-921791

## 6.5 Source Protection Zones

**Are there any Source Protection Zones within 500m of the study site?**

**No**

Database searched and no data found.

## 6.6 River Quality

**Is there any Environment Agency information on river quality within 1500m of the study site?**

**Yes**

### Biological Quality:

Biological Quality data describes water quality in terms of 83 groups of macroinvertebrates, some of which are pollution sensitive. The results are graded from A ('Very Good') to F ('Bad').

ID	Distance [m]	Direction	NGR	River Details	Biological Quality Grade				
					2004	2005	2006	2007	2008
Not shown	1116.0	W	431591, 432034	River Name: Aire Reach: Aire & Calder Navigawyke Beck End/Start of Stretch: Start of Stretch NGR	F	F	F	F	D
Not shown	1116.0	W	431591, 432034	River Name: Aire Reach: Meanwood Beck Aire & Calder Naviga End/Start of Stretch: End of Stretch NGR	F	F	F	F	D

### Chemical Quality:

Chemical quality data is based on the General Quality Assessment Headline Indicators scheme (GQAH). In England, each chemical sample is measured for ammonia and dissolved oxygen. In Wales, the samples are measured for biological oxygen demand (BOD), ammonia and dissolved oxygen. The results are graded from A ('Very Good') to F ('Bad').

ID	Distance [m]	Direction	NGR	River Details	Chemical Quality Grade (Headline Indicator)				
					2004	2005	2006	2007	2008
Not shown	1116.0	W	431591, 432034	River Name: River Aire Reach: Meanwood Beck Aire & Calder Naviga End/Start of Stretch: End of Stretch NGR	C	C	B	B	B
Not shown	1241.0	W	431391, 432403	River Name: River Aire Reach: Meanwood Beck Aire & Calder Naviga End/Start of Stretch: Sample Point NGR	C	C	B	B	B

## 6.7 Detailed River Network

**Are there any Detailed River Network entries within 500m of the study site?**

**No**

Database searched and no data found.

## 6.8 Surface Water Features

**Are there any surface water features within 250m of the study site?**

**No**

Report Reference: SF-921791

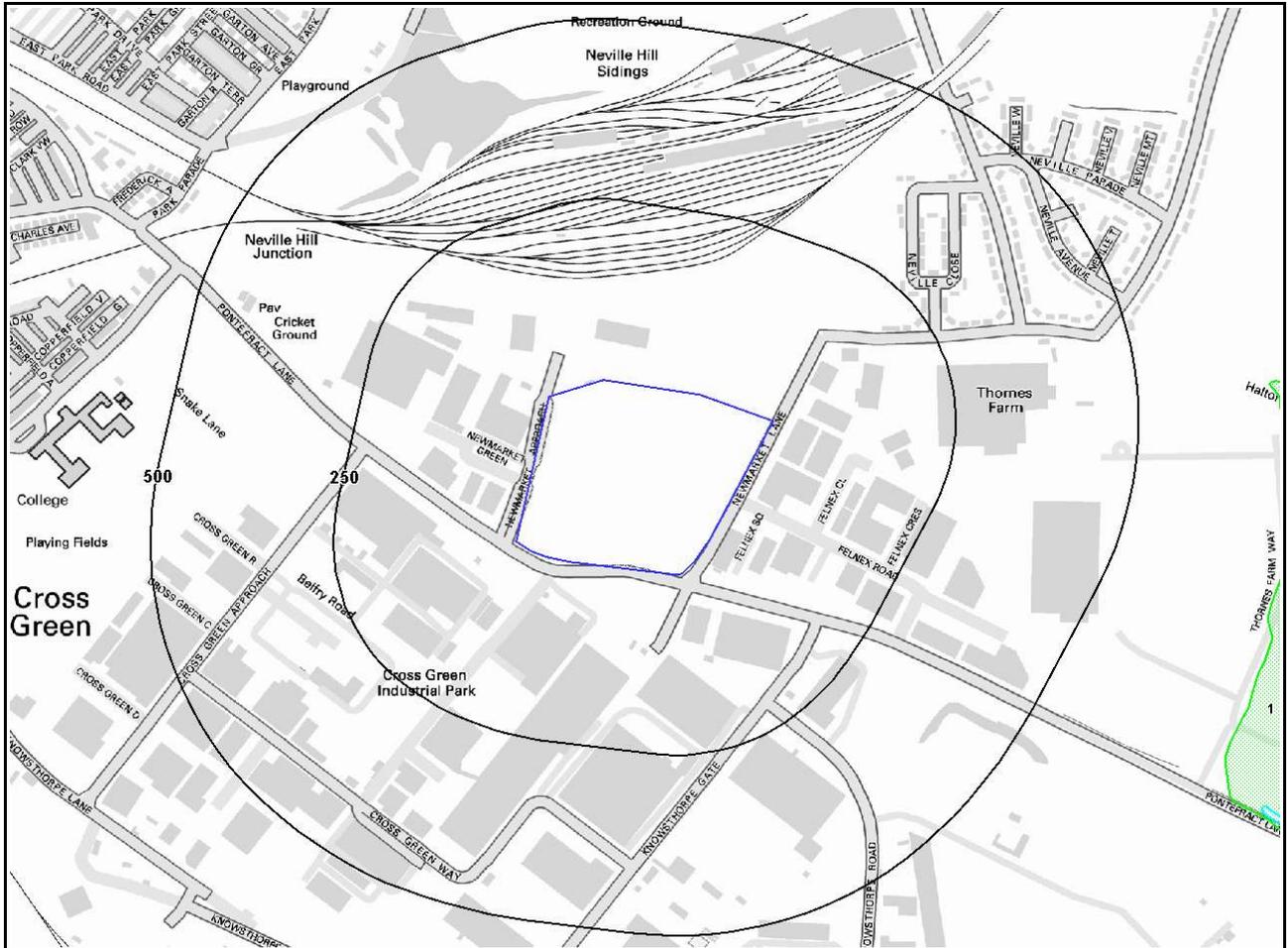
Database searched and no data found.

# 7. Surface Water Flood Map

NW

N

NE



W

E

SW

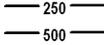
S

SE

Surface Water Flood Legend



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-  Site Outline
-  Search Buffers (m)
-  Zone 2 Floodplain
-  Zone 3 Floodplain
-  Flood Storage Area
-  Area Benefiting from Flood Defences
-  Flood Defences

---

## 7. Flooding

### 7.1 Zone 2 Flooding

Zone 2 floodplain estimates the annual probability of flooding as one in one thousand (0.1%) or greater from rivers and the sea but less than 1% from rivers or 0.5% from the sea. Alternatively, where information is available they may show the highest known flood level.

**Is the site within 250m of an Environment Agency indicative Zone 2 floodplain?** **No**

Database searched and no data found.

---

### 7.2 Zone 3 Flooding

Zone 3 estimates the annual probability of flooding as one in one hundred (1%) or greater from rivers and a one in two hundred (0.5%) or greater from the sea. Alternatively, where information is available they may show the highest known flood level.

**Is the site within 250m of an Environment Agency indicative Zone 3 floodplain?** **No**

Database searched and no data found.

---

### 7.3 Flood Defences

**Are there any Flood Defences within 250m of the study site ?** **No**

---

### 7.4 Areas benefiting from Flood Defences

**Are there any areas benefiting from Flood Defences within 250m of the study site?** **No**

---

### 7.5 Areas used for Flood Storage

**Are there any areas used for Flood Storage within 250m of the study site?** **No**

---

### 7.6 Groundwater Flooding Susceptibility Areas

**Are there any British Geological Survey groundwater flooding susceptibility flood areas within 50m of the boundary of the study site?** **Yes**

---

**What is the highest susceptibility to groundwater flooding in the search area based on the underlying geological conditions?** **High**

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Report Reference: SF-921791

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Guidance: Where high groundwater flooding susceptibility is indicated, this means that given the geological conditions in the area groundwater flooding hazard should be considered in all land-use planning decisions. It is recommended that other relevant information e.g. records of previous incidence of groundwater flooding, rainfall, property type, and land drainage information be investigated in order to establish relative, but not absolute, risk of groundwater flooding.

---

## 7.7 Groundwater Flooding Confidence Areas

**What is the British Geological Survey confidence rating in this result?**

**Moderately Low**

---

**Notes:**

Groundwater flooding is defined as the emergence of groundwater at the ground surface or the rising of groundwater into man-made ground under conditions where the normal range of groundwater levels is exceeded.

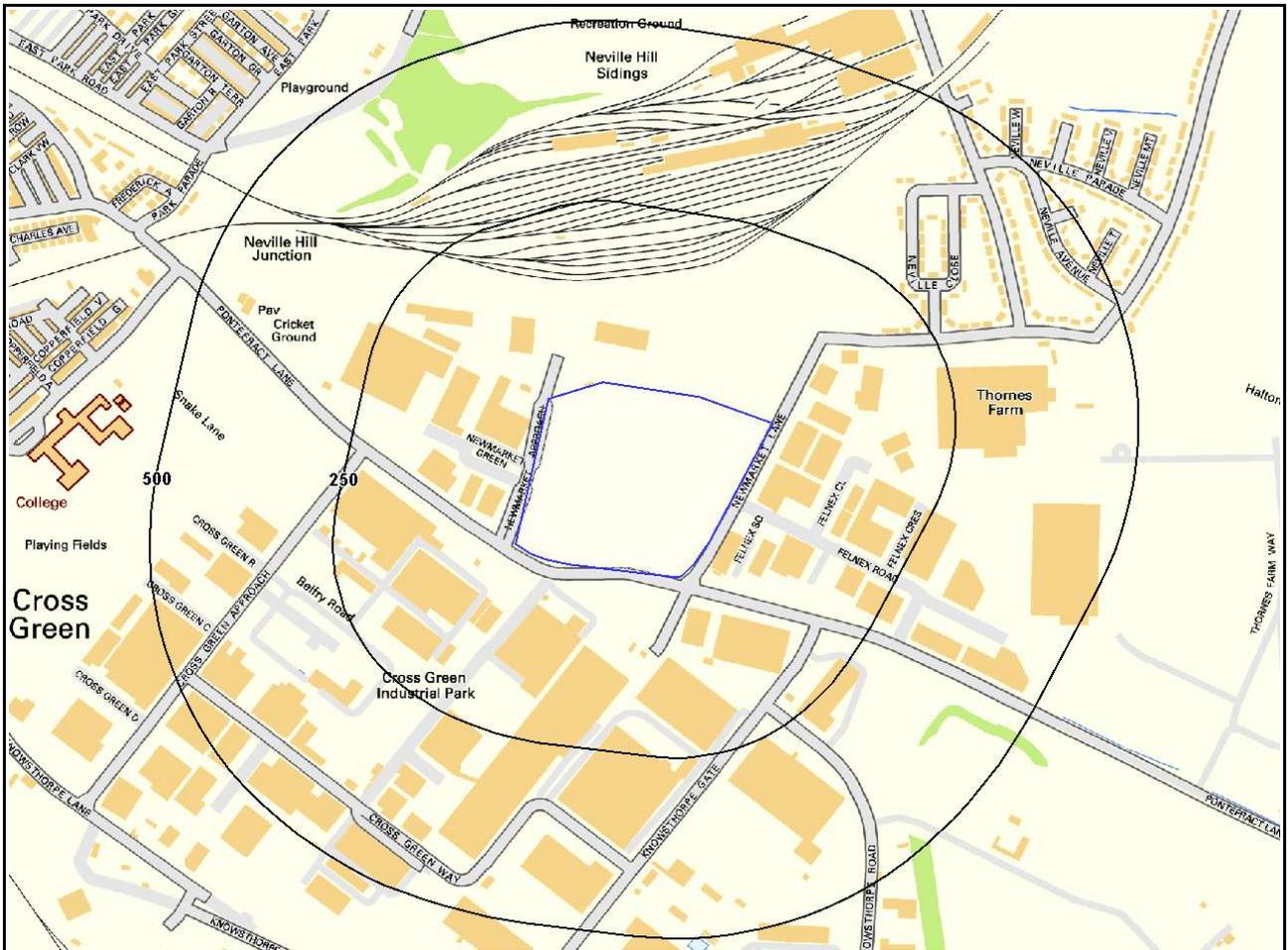
The **confidence rating** is on a fivefold scale - Low, Moderately Low, Moderate, Moderately High and High. This provides a relative indication of the BGS confidence in the accuracy of the susceptibility result for groundwater flooding. This is based on the amount and precision of the information used in the assessment. In areas with a relatively lower level of confidence the susceptibility result should be treated with more caution. In other areas with higher levels of confidence the susceptibility result can be used with more confidence.

# 8. Designated Environmentally Sensitive Sites Map

NW

N

NE



W

E

SW

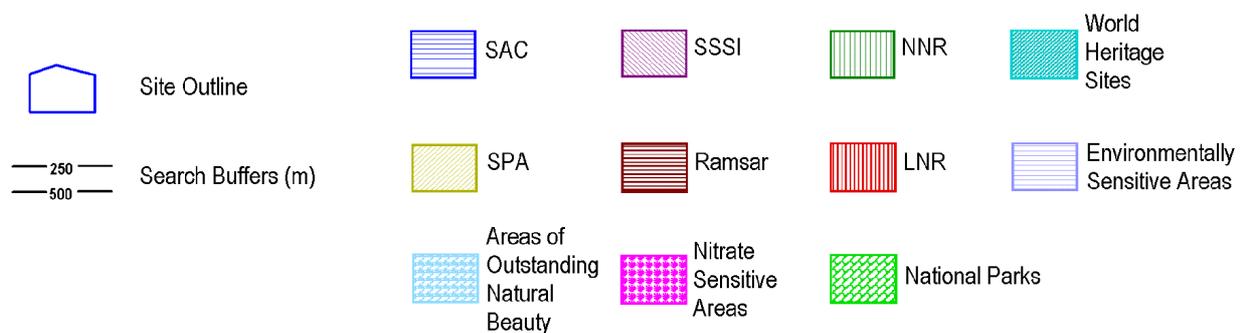
S

SE

Designated Environmentally Sensitive Sites Legend



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## 8. Designated Environmentally Sensitive Sites

**Presence of Designated Environmentally Sensitive Sites within 500m of the study site?** **No**

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**Records of Sites of Special Scientific Interest (SSSI) within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of National Nature Reserves (NNR) within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of Special Areas of Conservation (SAC) within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of Special Protection Areas (SPA) within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of Ramsar sites within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of Local Nature Reserves (LNR) within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of World Heritage Sites within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of Environmentally Sensitive Areas within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of Areas of Outstanding Natural Beauty (AONB) within 500m of the study site:** **0**

Database searched and no data found.

---

**Records of National Parks (NP) within 500m of the study site:** **0**

Database searched and no data found.

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---

**Records of Nitrate Sensitive Areas within 500m of the study site:****0**

Database searched and no data found.

---

## 9. Additional Information

### 9.1 Mobile Phone Transmitter Locations

GroundSure's unique mobile phone transmitter database.

**Have any mobile phone transmitters been identified within 250m of the study site?** **No**

Database searched and no data found.

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### 9.2 Existing and potential OfCom Telecommunication Mast Locations

OfCom telecommunication base station and mast data, which details the height and proposed location of masts over 30 metres in height or with a power level exceeding 17dBW.

**Have any OfCom telecommunication masts been identified within 250m of the study site?** **No**

Database searched and no data found.

---

### 9.3 Pylons and Electricity Transmission Lines

**Have any overhead transmission lines or pylons been identified in proximity to the study site?** **No**

Guidance: Please be aware that the findings contained within overhead power transmission lines and pylons dataset relates to Ordnance Survey Point X data, which identifies points along the transmission network. Therefore sometimes certain features may not appear in the report. The database is searched up to 500m.

---

## 10. Natural Hazards Findings

### 10.1 Detailed BGS GeoSure Data

BGS GeoSure Data has been searched to 50m. The data is included in tabular format. If you require further information, please obtain a GroundSure Geology and Ground Stability Report. Available from our website. The following information has been found:

#### 10.1.1 Shrink Swell

**What is the maximum Shrink-Swell\* hazard rating identified on the study site? Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Ground conditions predominantly low plasticity. No special actions required to avoid problems due to shrink-swell clays. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with shrink-swell clays.

#### 10.1.2 Landslides

**What is the maximum Landslide\* hazard rating identified on the study site? Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Slope instability problems are unlikely to be present. No special actions required to avoid problems due to landslides. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with landslides.

#### 10.1.3 Soluble Rocks

**What is the maximum Soluble Rocks\* hazard rating identified on the study site? Null - Negligible**

Soluble rocks are not present in the search area. No special actions required to avoid problems due to soluble rocks. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with soluble rocks.

#### 10.1.4 Compressible Ground

**What is the maximum Compressible Ground\* hazard rating identified on the study site? Moderate**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard
Significant potential for compressibility problems. Avoid large differential loadings of ground. Do not drain or de-water ground near the property without technical advice. For new build consider possibility of compressible ground in ground investigation, construction and building design. Consider effects of groundwater changes. Extra construction costs are likely. For existing property possible increase in insurance risk from compressibility, especially if water conditions or loading of the ground change significantly.

---

### 10.1.5 Collapsible Rocks

**What is the maximum Collapsible Rocks\* hazard rating identified on the study site?** **Null - Negligible**

No indicators for collapsible deposits identified; No special actions required to avoid problems due to collapsible deposits. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with collapsible deposits.

---

### 10.1.6 Running Sand

**What is the maximum Running Sand\* hazard rating identified on the study site?** **Very Low**

The following natural subsidence information provided by the British Geological Survey is not represented on mapping:

Hazard

Very low potential for running sand problems if water table rises or if sandy strata are exposed to water. No special actions required, to avoid problems due to running sand. No special ground investigation required, and increased construction costs or increased financial risks are unlikely due to potential problems with running sand.

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\* This indicates an automatically generated 50m buffer and site.

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## 10.2 Radon

**What is the maximum radon potential at the study site?**

**The property is not in a Radon Affected Area, as less than 1% of properties are above the Action Level**

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**Is the property in an area where radon protection measures are required for new properties or extensions to existing ones as described in publication BR211 by the Building Research Establishment?**

**No radon protective measures are necessary**

Guidance: The responses given on the level of radon protective measures required are based on a joint radon potential dataset from the Health Protection Agency (HPA) and the British Geological Survey (BGS). No radon protection measures are required.

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# 11. Mining

## 11.1 Coal Mining

**Are there any coal mining areas within 75m of the study site?**

**Yes**

The following coal mining information provided by the Coal Authority is not represented on Mapping:

Distance [m]	Direction	Details
0.0	On Site	The study site is located within the specified search distance of an identified mining area. Further details concerning this can be obtained from the Coal Authority Helpline on 0845 762 6848.

---

## 11.2 Shallow Mining

**What is the hazard of subsidence relating to shallow mining on-site (including a 150m buffer)?**

**Low-Moderate**

Guidance: Where low-moderate potential is indicated, this means that the rocks underlying the area are of a type known to have been mined at shallow depth in some parts of the UK, and that such working may be possible in your area. In these cases it is recommended that you seek further advice from a Royal Institute Chartered Surveyor (RICS), the local Building Control Officer, or by ordering a Geological Report from the BGS. It is also recommended that you obtain a Coal Authority mining search, which will provide a comprehensive search of former mining activity, including coal mining at deeper levels.

---

## 11.3 Brine Affected Areas

**Are there any brine affected areas within 75m of the study site?**

**No**

Database searched and no data found.

---

## 12. Contacts

### SearchFlow Helpline

Telephone: 0870 787 7625  
helpdesk@SearchFlow.co.uk  
Kings Hill Avenue, Kings Hill  
West Malling, Kent, ME19 4AJ



### British Geological Survey (England & Wales)

Kingsley Dunham Centre  
Keyworth, Nottingham NG12 5GG  
Tel: 0115 936 3143. Fax: 0115 936 3276. Email:  
enquiries@bgs.ac.uk  
Web: www.bgs.ac.uk  
BGS Geological Hazards Reports and general geological  
enquiries



### Environment Agency

Tel: 08708 506 506  
Ridings  
Phoenix House - Global Ave, Leeds, LS11 8PG  
Web: www.environment-agency.gov.uk  
Email: enquiries@environment-agency.gov.uk



### Health Protection Agency

Chilton, Didcot, Oxon, OX11 0RQ  
Tel: 01235 822622 www.hpa.org.uk/radiation  
Radon measures and general radon information and  
guidance



### The Coal Authority

200 Lichfield Lane, Mansfield, Notts NG18 4RG  
Tel: 0845 762 6848. DX 716176 Mansfield 5  
www.coal-authority.co.uk  
Coal mining reports and related enquiries



### Ordnance Survey

Romsey Road  
Southampton SO16 4GU  
Tel: 08456 050505



### Local Authority

Authority: Leeds City Council  
Phone: 0113 234 8080  
Web: www.leeds.gov.uk  
Address: Civic Hall, Caverley Street, Leeds, LS1 1UR

### Get Mapping PLC

Virginia Villas, High Street, Hartley Witney, Hampshire RG27  
8NW  
Tel: 01252 845444



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This report has been prepared in accordance with the GroundSure Ltd standard Terms and Conditions of business for work of this nature.

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Standard Terms and Conditions

1 Definitions

In these conditions unless the context otherwise requires:

"Beneficiary" means the Client or the customer of the Client for whom the Client has procured the Services.

"Commercial" means any building which is not Residential.

"Commission" means an order for Consultancy Services submitted by a Client.

"Consultancy Services" mean consultancy services provided by GroundSure including, without limitation, carrying out interpretation of third party and in-house environmental data, provision of environmental consultancy advice, undertaking environmental audits and assessments, Site investigation, Site monitoring and related items.

"Content" means any data, database or other information contained in a Report or Mapping which is provided to GroundSure by a Data Provider.

"Contract" means the contract between GroundSure and the Client for the performance of the Services which arises upon GroundSure's acceptance of an Order or Commission and which shall incorporate these conditions, the relevant GroundSure User Guide, proposal by GroundSure and the content of any subsequent report, and any agreed amendments in accordance with condition 11.

"Client" means the party that submits an Order or Commission.

"Data Provider" means any third party providing Content to GroundSure.

"Data Report" means reports comprising factual data with no professional interpretation in respect of the level of likely risk and/or liability available from GroundSure.

"GroundSure" means GroundSure Limited, a company registered in England and Wales under number 03421028 and whose registered office is at Greater London House, Hampstead Road, London NW1 7EJ.

"Home Information Pack" means a combination of reports required when selling a residential property.

"Intellectual Property" means any patent, copyright, design rights, service marks, moral rights, data protection rights, know-how, trade mark or any other intellectual property rights.

"Mapping" an historical map or a combination of historical maps of various ages, time periods and scales available from GroundSure.

"Order" means an order form submitted by the Client requiring Services from GroundSure in respect of a specified Site.

"Order Website" means online platform via which Orders may be placed.

"Report" means a Risk Screening Report or Data Report for commercial or residential property available from GroundSure relating to the Site prepared in accordance with the specifications set out in the relevant User Guide.

"Residential" means any building used as an individual dwelling.

"Risk Screening Report" means one of GroundSure's risk screening reports such as GroundSure Homebuyers, GroundSure Home Environmental GroundSure SiteGuard, GroundSure Screening, GroundSure Review, GroundSure Developer Review, or any other risk screening report available from GroundSure.

"Services" means the provision of any Report, Mapping or Consultancy Services which GroundSure has agreed to carry out for the Client/Beneficiary on these terms and conditions in respect of the Site.

"Site" means the landsite in respect of which GroundSure provides the Services.

"User Guide" means the relevant current version of the user guide, available upon request from GroundSure.

2 Scope of Services

2.1 GroundSure agrees to carry out the Services in accordance with the Contract and to the extent set out therein.

2.2 GroundSure shall exercise all the reasonable skill, care and diligence to be expected of experienced environmental consultants in the performance of the Services.

2.3 The Client acknowledges that it has not relied on any statement or representation made by or on behalf of GroundSure which is not set out and expressly agreed in the Contract.

2.4 Terms and conditions appearing on a Client's order form, printed stationery or other communication, including invoices, to GroundSure, its employees, servants, agents or other representatives or any terms implied by custom, practice or course of dealing shall be of no effect and these terms and conditions shall prevail over all others.

2.5 In the event that a Client/Beneficiary opts to take out insurance in conjunction with or as a result of the Services, such insurance shall be subject solely to the terms of any policy issued to it in that respect and GroundSure will have no liability therefore.

2.6 GroundSure's quotations/proposals are valid for a period of 30 days only. GroundSure reserves the right to withdraw any quotation at any time before GroundSure accepts an Order or Commission. GroundSure's acceptance of an Order or Commission shall be effective only where such acceptance is in writing and signed by GroundSure's authorised representative or where accepted via GroundSure's Order Website.

3 The Client's obligations

3.1 The Client shall be solely responsible for ensuring that the Report/Mapping ordered is appropriate and suitable for the Beneficiary's needs.

3.2 The Client shall (or shall procure that the Beneficiary shall) supply to GroundSure as soon as practicable and without charge all information necessary and accurate relevant data including any specific and/or unusual environmental information relating to the Site known to the Client/Beneficiary which may pertain to the Services and shall give such assistance as GroundSure shall reasonably require in the performance of the Services (including, without limitation, access to a Site, facilities and equipment as agreed in the Contract).

3.3 Where Client/Beneficiary approval or decision is required, such approval or decision shall be given or procured in reasonable time as not to delay or disrupt the performance of any other part of the Services.

3.4 The Client shall not and shall not knowingly permit the Beneficiary to, save as expressly permitted by these terms and conditions, re-sell, alter, add to, amend or use out of context the content of any Report, Mapping or, in respect of any Services, information given by GroundSure. For the avoidance of doubt, the Client and Beneficiary may make the Report, Mapping or GroundSure's findings available to a third party who is considering acquiring the whole or part of the site, or providing funding in relation to the site, but such third party cannot rely on the same unless expressly permitted under condition 4.

3.5 The Client is responsible for maintaining the confidentiality of its user name and password if using GroundSure's internet ordering service and accepts responsibility for all activity that occurs under such account and password.

4 Reliance

4.1 Upon full payment of all relevant fees and subject to the provisions of these terms and conditions, the Client and Beneficiary are granted an irrevocable royalty-free licence to access the information contained in a Report, Mapping or in a report prepared by GroundSure in respect of or arising out of Consultancy Services. The Services may only be used for the benefit of the Client and those persons listed in conditions 4.2 and 4.3.

4.2 In relation to Data Reports, Mapping and Risk Screening Reports, the Client shall be entitled to make Reports available to (i) the Beneficiary, (ii) the Beneficiary's professional advisers, (iii) any person providing funding to the Beneficiary in relation to the Site (whether directly or as part of a lending syndicate), (iv) the first purchaser or first tenant of the Site (v) the professional advisers and lenders of the first purchaser or tenant of the Site. For the avoidance of doubt, such persons shall include any entity necessary under the Housing Act 2004 (as amended). Accordingly GroundSure shall have the same duties and obligations to those persons in respect of the Services as it has to the Client and those persons shall have the benefit of any of the Client's rights under the Contract as if those persons were parties to the Contract. For the avoidance of doubt, the limitations of GroundSure's liability as set out in condition 7 shall apply.

4.3 In relation to Consultancy Services, reliance shall be limited to the Client, Beneficiary and named parties on the Report.

4.4 Save as set out in conditions 4.2 and 4.3 and unless otherwise agreed in writing with GroundSure, any other party considering the information supplied by GroundSure as part of the Services, including (but not limited to) insurance underwriters, does so at their own risk and GroundSure has no legal obligations to such party unless otherwise agreed in writing.

4.5 The Client shall not and shall not knowingly permit any person (including the Beneficiary) who is provided with a copy of any Report shall not except as permitted herein or by separate agreement with GroundSure: (a) remove, suppress or modify any trade mark, copyright or other proprietary marking from the Report or Mapping; (b) create any product which is derived directly or indirectly from the data contained in the Report or Mapping; (c) combine the Report or Mapping with, or incorporate the Report or Mapping into any other information data or service; or (d) re-format or otherwise change (whether by modification, addition or enhancement) data or images contained in the Report or Mapping.

4.6 Notwithstanding condition 4.5, if the Client acts in a professional capacity, it may make reasonable use of a Report and/or findings made as a result of Consultancy Services to advise Beneficiaries. However, GroundSure shall have no liability in respect of any opinion or report given to such Beneficiaries by the Client or a third party.

5 Fees and Disbursements

5.1 GroundSure shall charge the Client fees at the rate and frequency specified in the Contract together, in the case of Consultancy Services, with all proper disbursements incurred by GroundSure in performing the Services. For the avoidance of doubt, the fees payable for the Services are as set out in GroundSure's written proposal, Order Website or Order acknowledgement form. The Client shall in addition pay all value added tax or other tax payable on such fees and disbursements in relation to the provision of the Services.

5.2 Unless GroundSure requires prepayment, the Client shall promptly pay all fees disbursements and other monies due to GroundSure in full without deduction, counterclaim or set off together with such value added tax or other tax as may be required within 30 days from the date of GroundSure's invoice or such other period as may be agreed in writing between GroundSure and the Client ("Payment Date"). GroundSure reserves the right to charge interest which shall accrue on a daily basis from 30 days after the date of Payment Date until the date of payment (whether before or after judgment) at the rate of five per cent per annum above the Bank of England base rate from time to time.

5.3 In the event that the Client disputes the amount payable in respect of GroundSure's invoice it shall notify GroundSure no later than 28 days after the date thereof that it is in dispute. In default of such notification the Client shall be deemed to have agreed the amount thereof. As soon as reasonably practicable following receipt of a notification in respect of any disputed invoice, a member of the management team at GroundSure shall contact the Client and the parties shall use all reasonable endeavours to resolve the dispute.

6 Intellectual Property

6.1 Subject to the provisions of condition 4.1, the Client and the Beneficiary hereby acknowledge that all Intellectual Property in the Services are and shall remain owned by either GroundSure or the Data Providers and nothing in these terms purports to transfer or assign any rights to the Client or the Beneficiary in respect of the Intellectual Property.

6.2 The Client shall acknowledge the ownership of the Content where such Content is incorporated or used in the Client's own documents, reports, systems or services whether or not these are supplied to a third party.

6.3 Data Providers may enforce any breach of condition 6.1 against the Client or Beneficiary.

6.4 The Client and/or any Beneficiary acknowledges that the proprietary rights subsisting in copyright, database rights and any other intellectual property rights in respect of any data and information contained in any Report are and shall remain (subject to condition 11.1) the property of GroundSure and/or any third party that has supplied data or information used to create a Report, and that these conditions do not purport to grant, assign or transfer any such rights in respect thereof to a Client and/or a Beneficiary.

6.5 The Client and each of the parties set out in condition 4.2 are permitted to make up to 8 (commercial) or 2 (residential) printed copies of the Report only. Further copies of the Report may not be made in whole or in part without the prior written permission of GroundSure who shall be entitled to make a charge for each additional copy.

6.6 The Client shall (and shall procure that any recipients of the Report as permitted under condition 4.2 shall):

(i) not remove, suppress or modify any trademark, copyright or other proprietary marking belonging to GroundSure or any third party from the Services;

(ii) use the information obtained as part of the Services in respect of the subject Site only, and shall not store or reuse any information obtained as part of the Services provided in respect of adjacent or nearby sites;

- (iii) not create any product or report which is derived directly or indirectly from the data contained in the Services (save that those acting in a professional capacity to the Beneficiary may provide advice based upon the Services);
- (iv) not combine the Services with or incorporate such Services into any other information data or service; and
- (v) not reformat or otherwise change (whether by modification, addition or enhancement), data contained in the Services (save that those acting in a professional capacity to the Beneficiary shall not be in breach of this condition 6.6(v) where such reformatting is in the normal course of providing advice based upon the Services), in each case of parts (iii) to (v) inclusive, whether or not such product or report is produced for commercial profit or not.
- 6.7 The Client and/or Beneficiary shall and shall procure that any party to whom the Services are made available shall notify GroundSure of any request or requirement to disclose, publish or disseminate any information contained in the Services in accordance with the Freedom of Information Act 2000, the Environmental Information Regulations 2004 or any associated legislation or regulations in force from time to time.
7. Liability
- 7.1 Nothing in these terms and conditions shall limit GroundSure's liability for causing death or personal injury through negligence or willful default.
- 7.2 Save as otherwise set out in these conditions, any information provided by one party ("Disclosing Party") to the other party ("Receiving Party") shall be treated as confidential except so far as authorised by the Disclosing Party to provide such information in whole or in part to a third party.
- 7.3 Nothing in these conditions shall affect the statutory rights of a consumer under the applicable consumer protection legislation from time to time.
- 7.4 In relation to Data Reports, Mapping and Risk Screening Reports, GroundSure's liability under the Contract shall cease upon the expiry of six years from the date when the Beneficiary became aware that it may have a claim against GroundSure in respect of the Services provided always that there shall be no liability at the expiration of twelve years from the completion of the Contract. For the avoidance of doubt, any claims in respect of which proceedings are notified to GroundSure in writing prior to the expiry of the time periods referred to in this clause shall survive the expiry of those time periods provided any such claim is actually commenced within six months of notification.
- 7.5 In relation to Consultancy Services GroundSure's liability under the Contract shall cease upon the expiry of six years from the date the Services were completed.
- 7.6 GroundSure shall not be liable to the Client or any person to whom the Client provides a copy of a Data Report, Mapping or Risk Screening Report in any circumstances whatsoever unless arising out of a breach on its part of the obligations set out in the Contract.
- 7.7 GroundSure shall not be liable if the Data Reports, Mapping or Risk Screening Report are used otherwise than as provided or referred to in these conditions and the relevant User Guide.
- 7.8 Subject to the provisions of condition 7.3, GroundSure makes no representation, warranties, express or implied, as to the accuracy, reliability, completeness, validity or fitness for purpose of any Content and shall not be liable for any omission, error or inaccuracy in relation thereto unless GroundSure should reasonably have been alerted to any omission, error or inaccuracy in the Content.
- 7.9 Subject to the provisions of clause 7.1 notwithstanding anything to the contrary contained elsewhere in the Contract, and irrespective of whether multiple parties make use of the same Services, the total liability of GroundSure under or in connection with the Contract, whether in contract in tort for breach of statutory duty or otherwise shall not exceed £5 million per claim or series of connected claims.
- 7.10 Whilst GroundSure will use all reasonable endeavours to maintain operability of its internet ordering service it will not be liable for any loss or damages caused by a delay or loss of use of such service. The Client shall use GroundSure's internet ordering service at its own risk. GroundSure shall not be responsible for any damage to a Client or permitted assignee's computer, software, modem, telephone or other property resulting from the use of GroundSure's internet ordering service.
- 7.11 The Client accepts, and shall use all reasonable endeavours to procure that anyone who is provided with a copy of the Report accepts, that it has no claim or recourse to any Data Provider or to GroundSure in respect of the acts or omissions of such Data Providers including Content supplied by them save for where a Risk Screening Report comprises part of a Home Information Pack:
- (i) the Data Providers set out in the relevant User Guide shall be responsible for the quality and accuracy of the data supplied by them; and
- (ii) where GroundSure makes an assessment of a Site to determine if it is likely to fall within Part II(A) of the Environmental Protection Act 1990, GroundSure shall be responsible for the interpretation of any Content provided by a Data Provider subject to the limitations set out in these terms and conditions.
- 7.12 GroundSure shall provide the Services using reasonable skill and care, however, GroundSure shall not be liable for any inaccurate statement or risk rating in a Report which resulted from a reasonable interpretation of the Content.
- 7.13 Subject to the provisions of clause 7.1, GroundSure shall not be liable for any losses (whether direct or indirect) and including (but not limited to) loss of profit caused by the suspension or reduction of activity on a Site, business interruption, all third party off-Site claims or any loss in value of a Site, loss of goodwill, loss of business opportunity or other similar losses alleged to be sustained by the Client, the Beneficiary or any third party.
- 7.14 GroundSure undertakes for the duration of the liability periods referred to in conditions 7.4 and 7.5 to maintain professional indemnity insurance in respect of its liabilities in respect of:
- (i) Consultancy Services, for the amount specified in the Contract and/or on a project of project basis;
- (ii) each Commercial Risk Screening Report for £10 million;
- (iii) each Residential Risk Screening Report, for £5 million; and
- (iv) each Mapping or Data Report, for £5 million.
- In each case, in the aggregate which amount shall first include the whole of any sum payable for death or personal injury provided such insurance is readily available at commercially viable rates or for a lesser amount to be agreed with the Client should the cost of such insurance become commercially unviable. GroundSure shall produce evidence of such insurance if requested by the Client. A greater level of cover may be available upon request and agreement with the Client.
8. GroundSure right to suspend or terminate
- 8.1 In the event that GroundSure reasonably believes that the Client or Beneficiary as applicable has not provided the information or assistance required to enable the proper performance of the Services, GroundSure shall be entitled on fourteen days written notice to suspend all further performance of the Services until such time as any such deficiency has been made good.
- 8.2 GroundSure may additionally terminate the Contract immediately on written notice in the event that:
- (i) the Client shall fail to pay any sum due to GroundSure within 28 days of the due date for payment; or
- (ii) the Client (being an individual) has a bankruptcy order made against him or (being a company) shall enter into liquidation whether compulsory or voluntary or have an Administration Order made against it or if a Receiver shall be appointed over the whole or any part of its property assets or undertaking or if the Client is struck off the Register of Companies or dissolved; or
- (iii) the Client being a company is unable to pay its debts within the meaning of Section 123 of the Insolvency Act 1986 or being an individual appears unable to pay his debts within the meaning of Section 268 of the Insolvency Act 1986 or if the Client shall enter into a composition or arrangement with the Client's creditors or shall suffer distress or execution to be levied on his goods; or
- (iv) the Client breaches any material term of the Contract (including, but not limited to, the obligations in condition 4) incapable of remedy or if remediable, is not remedied within 14 days of notice of the breach.
9. Client's Right to Terminate and Suspend
- 9.1 Subject to condition 10.2, the Client may at any time after commencement of the Services by notice in writing to GroundSure require GroundSure to terminate or suspend immediately performance of all or any of the Services.
- 9.2 The Client waives all and any right of cancellation it may have under the Consumer Protection (Distance Selling) Regulations 2000 (as amended) in respect of the Order of a Report/Mapping. This does not affect the Beneficiary's statutory rights.
10. Consequences of Withdrawal, Termination or Suspension
- 10.1 Upon termination or any suspension of the Services, GroundSure shall take steps to bring to an end the Services in an orderly manner, vacate any Site with all reasonable speed and shall deliver to the Client/Beneficiary any property of the Client/ Beneficiary in GroundSure's possession or control.
- 10.2 In the event of termination/suspension of the Contract under conditions 8 or 9, the Client shall pay to GroundSure all and any fees payable in respect of the performance of the Services up to the date of termination/suspension. In respect of any Consultancy Services provided, the Client shall also pay GroundSure any additional costs incurred in relation to the termination/suspension of the Contract.
11. General
- 11.1 The mapping contained in the Services is protected by Crown copyright and must not be used for any purpose outside the context of the Services or as specifically provided in these terms.
- 11.2 GroundSure reserves the right to amend these terms and conditions. No variation to these terms shall be valid unless signed by an authorised representative of GroundSure.
- 11.3 No failure on the part of GroundSure to exercise and no delay in exercising, any right, power or provision under these terms and conditions shall operate as a waiver thereof.
- 11.4 Save as expressly provided in conditions 4.2, 4.3, 6.3 and 11.5, no person other than the persons set out therein shall have any right under the Contract (Rights of Third Parties) Act 1999 to enforce any terms of the Contract.
- 11.5 The Secretary of State for Communities and Local Government acting through Ordnance Survey, may enforce breach of conditions 6.1 or 11.1 of these terms and conditions against the Client in accordance with the provisions of the Contracts (Rights of Third Parties) Act 1999.
- 11.6 GroundSure shall not be liable to the Client if the provision of the Services is delayed or prevented by one or more of the following circumstances:
- (i) the Client or Beneficiary's failure to provide facilities, access or information;
- (ii) fire, storm, flood, tempest or epidemic;
- (iii) Acts of God or the public enemy;
- (iv) riot, civil commotion or war;
- (v) strikes, labour disputes or industrial action;
- (vi) acts or regulations of any governmental or other agency;
- (vii) suspension or delay of services at public registries by Data Providers; or
- (viii) changes in law.
- 11.7 Any notice provided shall be in writing and shall be deemed to be properly given if delivered by hand or sent by first class post, facsimile or by email to the address, facsimile number or email address of the relevant party as may have been notified by each party to the other for such purpose or in the absence of such notification the last known address.
- 11.8 Such notice shall be deemed to have been received on the day of delivery if delivered by hand, facsimile or email and on the second working day after the day of posting if sent by first class post.
- 11.9 The Contract constitutes the entire contract between the parties and shall supersede all previous arrangements between the parties.
- 11.10 Each of the provisions of the Contract is severable and distinct from the others and if one or more provisions is or should become invalid, illegal or unenforceable, the validity and enforceability of the remaining provisions shall not in any way be tainted or impaired.
- 11.11 These terms and conditions shall be governed by and construed in accordance with English law and any proceedings arising out of or connected with these terms and conditions shall be subject to the exclusive jurisdiction of the English courts.
- 11.12 If the Client or Beneficiary has a complaint about the Services, notice should be given in writing to the Compliance Officer at GroundSure who will respond in a timely manner.
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