PATRICK PARSONS

CREATING PLACES / FOR FUTURE GENERATIONS TO THRIVE

Phase I Site Appraisal

10579 – Great Bear, Link 56
Deeside, Flintshire

for

Legat Owen
GBD-PPC-00-XX-RP-G-0001

July 2023

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for

Legat Owen

Revision	Date of issue	Comments	Prepared By	Checked By
0	31/07/2023	1st issue	OB/OMD	HA

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Contents

1.0 Introduction

1.1 Commission

Patrick Parsons (PP) has been appointed by Legat Owen (client) to produce a Phase I Site Appraisal, for their site at Great Bear, Deeside.

1.2 Proposed Development

It is understood that the site is to be developed to provide a 172,000sq ft commercial distribution building with associated yard and car park areas This area is composed of two phases of development including an extension to the west of the existing commercial building in the southern half of the site and a new commercial shed with areas of loading and parking areas in the north of the site. A plan showing the general layout of the proposed development is in Appendix A.

1.3 Limitations

This report has been prepared for the client and their appointed agents only and should not be relied upon by any third party without the written permission of Patrick Parsons. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any Duty of Care or Skill. It is based on and limited to an assessment of the information and ground conditions identified here.

1.4 Aim of Phase I Site Appraisal

The client's specific requirements were to provide a Phase I Site Appraisal for the site supplemented with a new environmental data report. The principal objectives are as follows:

- Obtain information about the likely soil and groundwater conditions within the area of the site;
- Determine the possible ground related geotechnical and contamination hazards within the site boundaries that may affect any future proposed development;
- Provide advice on further works required for the cost-effective reduction of risks to the development and procedures likely to satisfy regulators.

1.5 Information Sources

This Phase I Site Appraisal is based on published geological and environmental information supplemented by historical mapping (Appendix B) and an environmental data report (Appendix C). Data from a site investigation report undertaken in April 2022 by CC Geotechnical Ltd reference: CCG-C-21-12803-rev2 has been used where applicable.

2.0 Site Setting

2.1 Site Description

The site is a roughly rectangular shaped parcel of land covering 13.62ha that is bound by Weighbridge Road to the north and Deeside Industrial Park on the southern, western and eastern boundaries of the site. The site is located approximately 10.6km north-west of Chester town centre located at OS grid reference 331237, 371779 and the nearest postcode is CH5 2LL.

The site is occupied by two large rectangular shaped commercial / industrial units one occupying the southern half of the site, and the other located centrally. Large portions of the site are laid to tarmac or concrete hardstanding which are used as loading and parking areas for commercial vehicles. Undeveloped land occupies the northern third of the site, which is currently used as staff parking and storage. The site is predominantly at a level gradient, however, an offsite drain running along the western boundary of the site is noted, this drainage run is approximately 3.20m below the existing site level.

A site location plan is presented in Appendix A.

2.2 Site History

Year	Site	Surrounding Area
1869	The site is marshland in the northern section of the site. With the southern two thirds of the site within an area affected by tidal influence.	The site is in a rural setting. Undeveloped marshland and saltings are recorded to surround the entire site.
1897-1898	The area of the site which is recorded as affected by tidal influences has reduced in size. Large parts of the site have undergone land reclamation.	Majority of the surrounding land has now become reclaimed land with some remnants of marshland in the south of the site. Adjacent to the western boundary the North Wales and Liverpool railway has been constructed.
1909-1913	A number of drainage ditches are recorded crossing the site, predominantly in an east to west orientation.	There are numerous drainage ditches northeast of the site within 500m of the site.
1938	No significant changes are recorded.	No significant changes are recorded.
1953-1954	No significant changes are recorded.	Development 200m to the northwest of the site is recorded.
1960	A large disused works is recorded consisting of four structures occupying the eastern site areas. Light railway lines are recorded along the western boundary of the site. A road is mapped on the north boundary of the site.	Significant amounts of industrial development are recorded to the west of the site. With a significant number of warehouses, chimneys, drains, reservoirs and railway lines. A works is recorded adjacent to the northern boundary with two recorded ponds.
1969-1970	The works building is no longer recorded as “disused”.	No significant changes are recorded.
1981	Two additional buildings are recorded within the southwestern corner of the site.	No significant changes are recorded.
1992	The two buildings noted in the 1981 mapping are no longer recorded.	There is a significant reduction in the number of buildings to the west of the site, with a number of warehouses no longer recorded. Industrial development is recorded to the east of the site with Deeside Industrial Park recorded. A large reservoir is recorded approximately 450m to the northeast of the site.

Year	Site	Surrounding Area
2001	The large warehouse building appears to have been demolished and a new warehouse has been constructed in the centre of the site.	No significant changes are recorded.
2010	The square warehouse occupying the northeastern corner of the site is no longer recorded.	Infill industrial development is noted within Deeside Industrial Park.
2023	A rectangular extension to the southeastern corner of the large warehouse structure occupying the centre of the site has been noted.	No significant changes are recorded.

The historical maps reviewed are represented in Appendix B.

2.3 Unexploded Ordinance (UXO)

The site has been classified as low risk of UXO. As such no further mitigation measures are required.

2.4 Geology

The site has been recorded to be covered by artificial deposits / Made Ground. As such, Made Ground should be expected across the site.

The site is recorded to be underlain by Superficial Deposits of Tidal Flat Deposits overlying the bedrock geology of the Kinnerton Sandstone Formation.

There are 3no. cable percussive boreholes recorded on-site from the site investigation undertaken in April 2022 drilled to a maximum depth of 14.00m bgl. Made Ground was recorded to a depth of between 0.25m and 3.50m bgl and consisted of a light brown silty sand. Beneath the Made Ground, medium dense to dense greyish brown silty sand was recorded to a depth of 14.00m begl.

2.5 Mining and Quarrying

There are 6no. surface ground workings recorded within 250m of the site, the closest being a water body recorded on site in 1938. The remaining surface ground workings comprise ponds and an unspecified pit ranging between 141m northwest and 206m northwest from the site.

There are 4no. records of non-coal mining within 1000m of the site, the closest 91m south related to bedded Iron Ore, the rest of the records relate to Iron Ore and Vein Minerals ranging from 711m west to 823m west.

There are no records of BritPits within 500m of the site.

There are 2no. records of underground workings within 1000m of the site, both are unspecified workings 893m southwest in 1960 and 1969.

There are no historical mineral planning areas within 500m of the site.

The site is not recorded to be within a coal mining reporting area as designated by the Coal Authority (CA).

2.6 Radon

The site is not recorded within a Radon Affected Area and as such radon protection measures are not required for new properties on the site.

2.7 Hydrogeology and Hydrology

The Superficial Deposits beneath the site are recorded to be a Secondary Undifferentiated Aquifer. The bedrock beneath the site is recorded to be a Principal Aquifer. The site is not located within a Source Protection Zone.

There are 7no. records of groundwater abstractions within 2000m of the site, the closest being a historical record relating to pollution remediation 475m east of the site. There are no recorded potable abstractions within 2000m of the site.

There is 1no. recorded surface water abstraction within 2000m of the site. This record is 444m north of the site and is associated with spray irrigation.

The are 11no. surface water features within 250m of the site, 5no. located on-site relating to an inland river not influenced by normal tidal action.

The eastern side of the site is recorded to be in a Flood Zone 2 and part of the northern boundary is recorded to be in a Flood Zone 3.

2.8 Environmental Data

There are no recorded LA historical landfill or EA/NRW landfill sites within 500m of the site.

There are 2no. of historical waste record within 500m of the site. One is located on-site relating to a recycling/recovery plant for municipal solid waste.

There are 57no. waste exemption records within 500m of the site. There are 21no. waste exemption records located on-site, relating to burning waste in the open, treatment of waste wood and waste plant, storage of waste, deposit of agricultural waste, spreading waste on agricultural land and others.

There are 57no. recorded historical industrial land uses within 500m of the site. There are 13no. records on-site relating to railway sidings, unspecified commercial/industrial, unspecified works, unspecified disused works, and airfield ranging from 1948 to 1992.

There are 24no. records of historical tanks within 500m of the site. There are 3no. records of historical tanks recorded on-site relating to unspecified tanks ranging from 1984 to 1997.

There are no historical garages located within 500m of the site.

There are 25no. records of recent or current industrial land use within 250m of the site. There are 6no. records on-site relating to industrial coatings and finishings, new vehicles, catering and non-specific food products, office and shop equipment, industrial engineers and electrical features.

There are no records for current or recent petrol stations within 500m of the site.

There are 2no. licensed pollutant release (Part A(2)/B) records within 500m of the site. One record on-site relates to respraying of road vehicles, whilst the other relates to engineering works located 393m SE.

There are no List 1 Dangerous Substance records within 500m of the site. There are no List 2 Dangerous Substance records within 500m of the site.

There is 1no. record for Pollution Incidents (EA/NRW) within 500m of the site. This relates to multiple pollutants on 10/05/2013 with a worst-case Category 3 impact on air and a Category 4 impact on land.

The environmental data report obtained for the site is presented in Appendix C.

3.0 Summary of Previous Investigation

3.1 Previous Phases of Ground Investigation

A previous phase of ground investigation has been completed along the proposed extension in the south-west of the site by CC Geotechnical Ltd in April 2022 report reference: CCG-C-21-12803-rev2. Ground conditions including laboratory and in-situ testing from the 2022 report have been summarised below. This data has been used in conjunction with the desk study data to complete the risk assessments and in-turn the conceptual site model in Section 4.0.

3.2 Ground Conditions

Made Ground was recorded across the investigation area, comprising grey slightly silty sandy gravel of cinders and slag to a maximum recorded depth of 0.60m bgl (WS03), and reworked fill of light brown slightly silty fine to medium sand to a maximum recorded depth of 3.50m bgl (BH1).

Below the Made Ground the natural strata was generally recorded to comprise dense grey slightly silty fine sand becoming slightly gravelly below depths of between 5.00m and 12.00m bgl, to a maximum recorded depth of 14.00m bgl (BH3).

SPT N-values within the natural granular soils between 1.00m and 14.00m bgl were recorded between 27 and 45 with a general increase with depth.

3.3 Hydrogeology

Groundwater was recorded during the investigation and in the subsequent monitoring programme. Groundwater was recorded between depths of 2.42m bgl and 2.86m bgl across the investigation area.

3.4 Identified Contamination and Laboratory Testing

No visual or olfactory evidence of gross contamination was recorded in any of the exploratory locations.

A programme of soil chemical analyses was undertaken at a UKAS / MCERTS accredited laboratory as follows:

- 5no. samples of Made Ground soils on a broad-spectrum suite including pH, metals, non-metals, heavy metals, speciated PAHs, speciated TPHs and asbestos.
- 3no. samples of Made Ground soils were analysed for PCBs.

All testing returned below the respective guideline criteria used and indicated that there was no risk to human health from the soils tested.

4.0 Phase I Conceptual Model

4.1 Initial Conceptual Model and Preliminary Risk Assessment

The preceding desk study data and supplementary site investigation data has been assessed and a conceptual model produced in accordance with Land Contamination Risk Management (LCRM) guidance document. LCRM provides a technical framework for identifying and remediating contamination through the application of a risk management process.

The process requires the development of an initial conceptual site model (CSM) and preliminary risk assessment are based on information derived from the desk study to provide a qualitative assessment of risk posed to human health and environmental receptors from potential on and off-site sources of contamination as defined within Part IIA of the Environmental Protection Act (1990).

The CSM provides the relationship between the following three criteria:

- The presence of substances that may cause harm (source);
- The presence of a plausible pollutant linkage between the source and receptor (pathway);
- The presence of a receptor which may be harmed (receptor).

If all three criteria are present, or considered likely to be present at a site, they are identified as Potential Contaminant Linkages (PCLs) and they should be considered within the risk assessment process. For an 'unacceptable risk' to exist, it must be established that contamination has the potential to cause harm to susceptible targets, which requires scientific and technical knowledge.

EA R&D66 (2008) includes a risk classification system based on classification of consequence and probability. The table below shows a risk matrix, in which the likelihood or probability of each pollutant linkage being realised is ranked against the severity of the consequences. The result is the risk classification, based upon which risk management actions can be implemented. The individual sources, pathways and receptors identified are assessed against this risk matrix; potential pollutant linkages and associated risks are recorded:

		Severity of Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability of pollutant linkage	**High Likelihood**	Very High risk	High risk	Moderate risk	Moderate/ Low risk
	Likely	High risk	Moderate risk	Moderate / Low risk	Low risk
	Low Likelihood	Moderate risk	Moderate / Low risk	Low risk	Very Low risk
	Unlikely	Moderate / Low risk	Low risk	Very Low risk	Very Low risk

The definitions of the risk terminology are taken from CIRIA report C552 and are summarised as follows:

- **Very High risk:** there is a high probability that severe harm could arise to a designated receptor from an identified source, or there is evidence that severe harm to a designated receptor is currently occurring. This level of risk is likely to result in a substantial liability and urgent investigation (if not already undertaken) and remediation is likely to be required.
- **High risk:** harm is likely to arise to a designated receptor from an identified source. This level of risk is likely to result in a substantial liability, urgent investigation (if not already undertaken), short term remediation may be necessary are likely to be required in the long term.
- **Moderate risk:** it is possible that harm could arise to a designated receptor from an identified source. However, it is relatively unlikely that any such harm would be severe, or if any harm were to occur it is more likely that the harm would be relatively mild. Investigation (if not already undertaken) is normally required, and some remediation may be required in the long term.
- **Low risk:** it is possible that harm could arise to a designated receptor from an identified source, but it is likely that this harm, if realised, would at worst normally be mild. Further investigation should be considered, but is not necessarily required, to confirm the absence of contamination.
- **Very Low risk:** there is a low possibility that harm could arise to the receptor. In the event of such harm being realised it is not likely to be severe. Further investigation should be considered, but is not necessarily required, to confirm the absence of contamination.

A pollutant linkage must be established before tests for probability and consequence are applied. If there is no pollutant linkage, then there is no potential risk and there is no need to apply tests for probability and consequence. The risk assessment needs to include a logical and transparent system to define categories of severity of consequence and probability of occurrence. The initial conceptual model and preliminary risk assessment are discussed below.

4.2 Potential On-site Sources of Contamination

There are onsite records of Made Ground. Given the industrial and commercial history of the site, contamination will be expected. Examples include:

- The historical tanks located on site.
- Licensed pollutant release (A(2)/B) relating to respraying of road vehicles located on site.
- The recycling/recovery plant relating to municipal solid waste located on site.

Asbestos containing materials (ACM) from fly tipping of ACMs cannot be discounted.

4.3 Potential Offsite Sources of Contamination

A potential off-site source of contamination that could affect the proposed development include the reclaimed marshland surrounding the site.

Offsite Made Ground is also noted as a potential source of ground gas which could impact the site.

- Offsite Made Ground producing hazardous soil-gases may be present from infilled ponds and adjacent commercial developments.

Contaminants of concern

The contaminants of concern expected to be present on-site are likely to include heavy metals, polyaromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPHs) and asbestos.

4.4 Pathways

The potential pathways for migration of contamination sources to potential receptors relevant to this site are as follows:

Human Health

- Direct contact with and/or incidental ingestion of contaminated soils;
- Dermal contact, inhalation and/or ingestion of dust derived from contaminated soils;
- Migration of hazardous soil-gases via permeable strata or ducts/drains into future buildings.

Controlled Waters

- Leaching of contamination with subsequent vertical and/or lateral migration of mobile contaminants into controlled water receptors;
- Migration of contamination via preferential pathways e.g. service runs.

Buried Services/Property

- Direct contact of contaminants with existing or future buried services;
- Migration of hazardous soil-gases via permeable strata or ducts/drains into enclosed spaces.

4.5 Receptors

The following site-specific receptors are considered relevant:

Human Health

- Site users – end-users of the proposed commercial development;
- Construction workers – personnel involved in the redevelopment works;

Controlled Waters

- Underlying superficial Secondary Undifferentiated Aquifers and Principal bedrock Aquifer;
- Surface water drain to west of site boundary.

Buried Services / Property

- Building fabric and foundations/piles.

4.6 Conceptual Site Model

A preliminary qualitative assessment of the identified PCLs and associated risk ratings has been completed and a summary is provided in the Table on the next page.

Source	Pathway	Receptor	Consequence	Probability	Risk Assessment and Justification
On-site sources – Made Ground on site associated with the industrial and commercial developments and industrial activity on site; general contaminants to include heavy metals, PAHs, TPHs and asbestos containing materials (ACM) from fly tipping of ACMs cannot be discounted. **Offsite sources** – Made Ground surrounding the site relating to off-site commercial / industrial developments and infilled ponds. General contaminants to include heavy metals, PAHs, TPHs and asbestos.	Dermal contact, inhalation and ingestion of contaminants in soil and soil derived dust	Future site user/worker	Medium	Low Likelihood	**Low/Moderate Risk** – Made Ground expected to be present on-site. However, the proposed development of the site includes limited areas of soft landscaping which will be managed by the building management limiting the pathway between any potential contamination and end users.
		Site construction worker	Mild	Low Likelihood	**Low Risk** - Construction workers have a shorter exposure period and risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.
	Inhalation of volatile soil vapours and ground gas	Future site user/worker	Medium	Low Likelihood	**Low/Moderate Risk** – Expected deposits of Made Ground identified on site. Considered a low likelihood that the levels of volatile vapours and ground gases will be high enough to represent acute risks or lead to significant impact due to the cohesive nature of the Tidal Flat Deposits beneath the site.
		Site construction worker		Unlikely	**Low Risk** – On-site deposits of Made Ground typically comprising reworked natural soils. Considered unlikely that levels of volatile vapours and ground gases will be high enough to represent acute risks or lead to significant impact. However, construction workers have a shorter exposure period and risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.
	Inhalation of asbestos free fibres	Site user/worker	Severe	Low Likelihood	**Moderate Risk** –Asbestos is unlikely to be on-site due to the sites historical use. Asbestos including asbestos containing materials (ACMs) may also have been fly tipped or introduced on-site by windblown processes. However, the proposed development of the site includes very limited areas of soft landscaping which will be managed by the building management limiting the pathway between any potential contamination and end users.
		Site construction worker		Low Likelihood	**Moderate Risk** - Construction workers have a shorter exposure period and risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.
	Leaching of contaminants from soil and vertical migration into groundwater	Groundwater within superficial deposits (Secondary Undifferentiated Aquifer)	Mild	Likely	**Low/Moderate Risk:** Risk assessed as Low / moderate due to the low sensitivity of the shallow groundwater due to the site location within a predominantly commercial / industrial site setting where potable extractions are unlikely to be utilised in the future.
		Surface Water Drain	Mild	Likely	**Low/Moderate Risk:** Risk assessed as Low / moderate due to the low sensitivity of the shallow groundwater due to the site location within a predominantly commercial / industrial site setting where surface water extractions are unlikely to be utilised in the future.
		Groundwater within bedrock (Principal Aquifer)	Medium	Low Likelihood	**Low/Moderate Risk:** Risk assessed as Low / moderate as contamination will likely be intercepted and attenuated by the shallow groundwater within the superficial deposits.
	Permeation through water pipes of shallow contamination.	Future site user/worker	Mild	Low Likelihood	**Low Risk:** Sources of contamination may be present on site however it is considered unlikely that UKWIR threshold values would be exceeded.

5.0 Preliminary Recommendations

5.1 Contamination and Remediation

As detailed within the CSM, several pollutant linkages have been identified at the site. Given that proposed development of the site includes limited areas of soft landscaping there will not be a pathway between any potential contamination and end users with respect to dermal contact, inhalation and ingestion of contaminants in soil and soil derived dust. For the most part a low to moderate risk has been assigned in term of human health, given that there will be a limited pathway between any potential contamination and end users with respect to dermal contact, inhalation and ingestion of contaminants in soil, soil derived dust and asbestos.

Low to moderate risks have been identified with respect to controlled waters as onsite sources of made ground are recorded in the environmental data and the potential for reworked natural soils are likely to be encountered. The underlying ground conditions are granular in nature which will act as a potential pathway to the underlying receptors.

A ground investigation will be required to confirm this assessment, the scope of which is outlined in Section 5.

It should be noted that the following comments are based on the findings of this desk study and should be confirmed by intrusive investigation and chemical analysis. At this stage, it should be assumed:

- Any new areas of proposed areas of soft landscaping may require a minimum 300mm thick clean-capping layer;
- Gas protection measures may be required if harmful levels of soil-gas are encountered during the site investigation and subsequent gas monitoring programme;
- Source removal may be required if grossly contaminated soils are encountered.

5.2 Geotechnical Considerations

It should be noted that the following comments and recommendations are based on the findings of this desk study. Generally, it is considered:

- The ground conditions are likely to comprise Made Ground overlying predominately granular superficial soils of Tidal Flat Deposits, overlying the bedrock geology of the Kinnerton Sandstone Formation comprising sandstone;
- Traditional pad foundations may be suitable for the development provided significant thicknesses of made ground or low strength soils are not present; however, an alternative foundation solution may be required if low bearing capacity soils are encountered at shallow depth;
- Given the granular nature of the on-site superficial soils a soakaway drainage strategy is likely to be feasible for the proposed development subject to completion of in situ permeability testing.

5.3 Site Investigation Undertaken on Proposed Southern Extension.

A previous phase of ground investigation has been completed across the southwestern extents of the larger site area covered by this Phase I Site Appraisal report, this investigation was undertaken by CC Geotechnical in April 2022 report reference: CCG-C-21-12803. The ground conditions and testing have been reviewed and it is considered that the site investigation has collected the relevant data with a sufficient testing density to assess the risk to human health and controlled waters and have collected sufficient data to provide geotechnical recommendations regarding the proposed building extension within the southwestern corner of the larger site area.

6.0 Conclusions

Further works will be necessary to establish a ground model and confirm the underlying ground conditions to confirm the recommendations detailed in Section 4 for the remaining site areas and proposed structures in the north of the larger site area and should generally comprise:

- A window sampling borehole investigation to establish the sub-surface conditions, collect samples for analysis and permit the installation of ground gas monitoring wells;
- Chemical analysis of soils followed by risk assessment so that the risk to human health and controlled waters can be determined;
- Geotechnical and geochemical soils testing of the founding strata to assess strength and suitable grade(s) of buried concrete.

This document should be submitted to the Planning Department of the Local Authority for comment and approval.

Appendix A

Figures

notes

Schedule of Accommodation

All areas are approximate gross internal

Unit 1 (approx footprint)		
Existing	30,655 sq.m.	329,970 sq.ft.
Extension	7,695 sq.m.	82,830 sq.ft.
Total	38,350 sq.m.	412,800 sq.ft.
Car Parking (maxed out)	423 spaces	
Plot Area	22.8 acres	9.22 ha.
Unit 2		
Warehouse:	15,200 sq.m.	163,600 sq.ft.
Two Storey Offices	800 sq.m.	8,600 sq.ft.
Total	16,000 sq.m.	172,200 sq.ft.
Car Parking (1 per 100 sqm)	167 spaces	
Plot Area	8.04 acres	3.25 ha.
Gross Site Area (red line)	32.73 acres	13.25 ha.

no.	date	revision	by

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client

Legat Owen

project

Great Bear
Link 56
Deeside

drawing

Indicative Site Plan
Option B

scale	1:1000 @ A1	drawn	rpw
checked	spp	date	20.10.21

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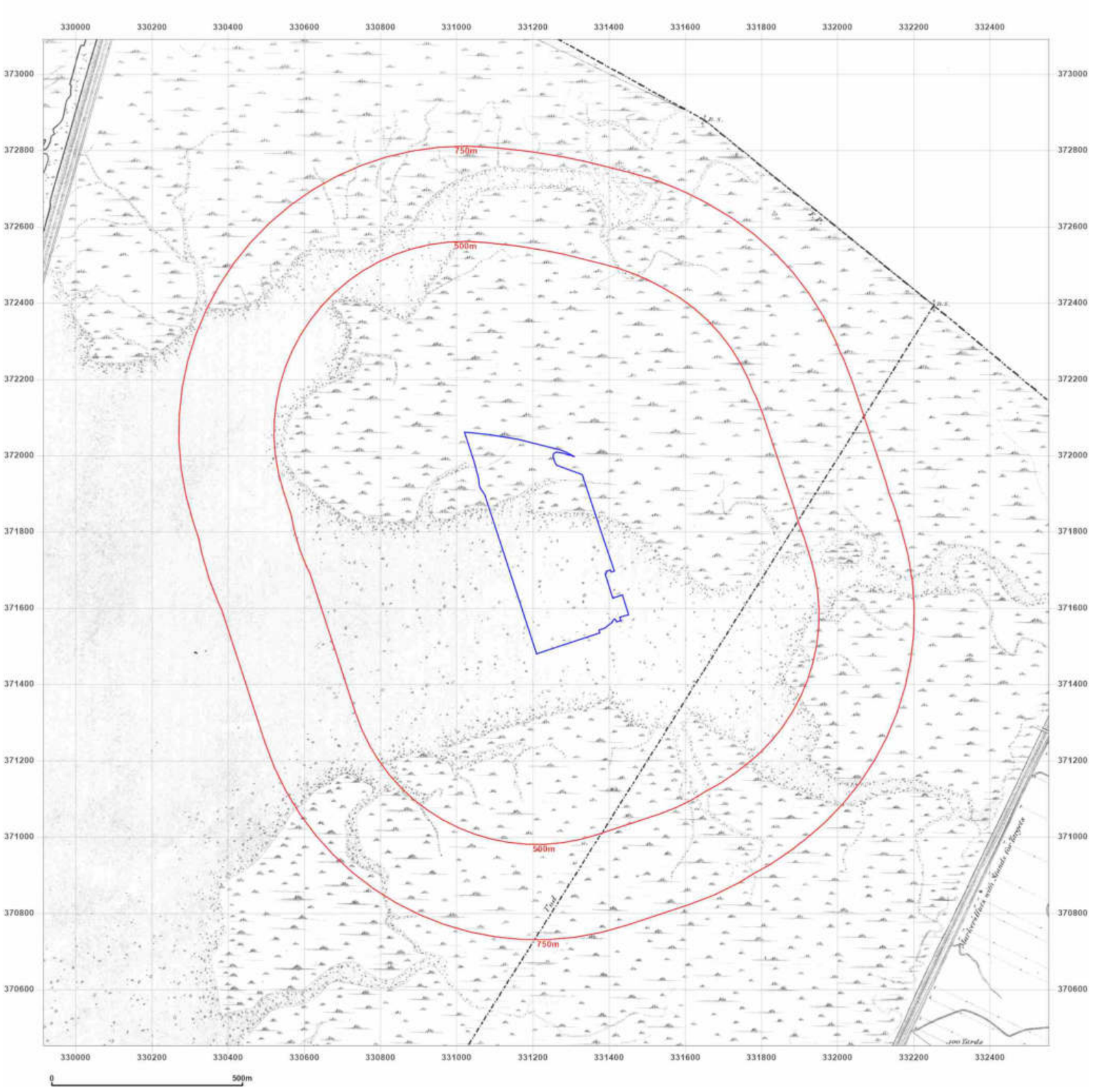
6850-008

PATRICK PARSONS

Appendix B

Historical Maps



EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

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Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: County Series

Map date: **1869**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1869
Revised 1869
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 15 June 2023

Map legend available at:
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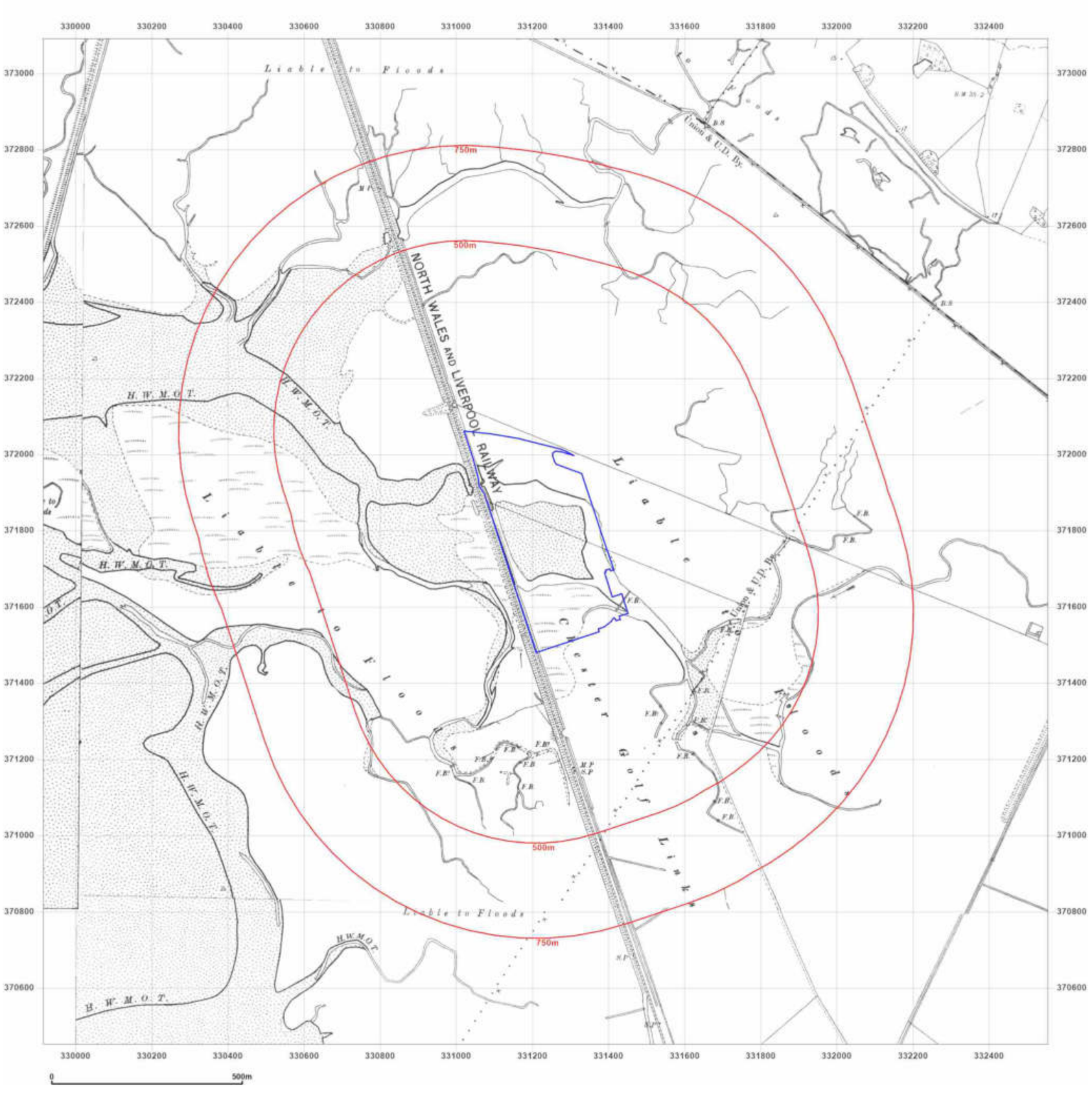

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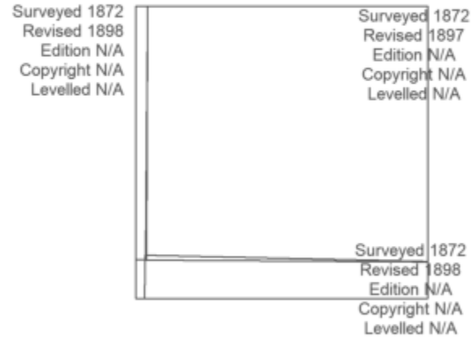

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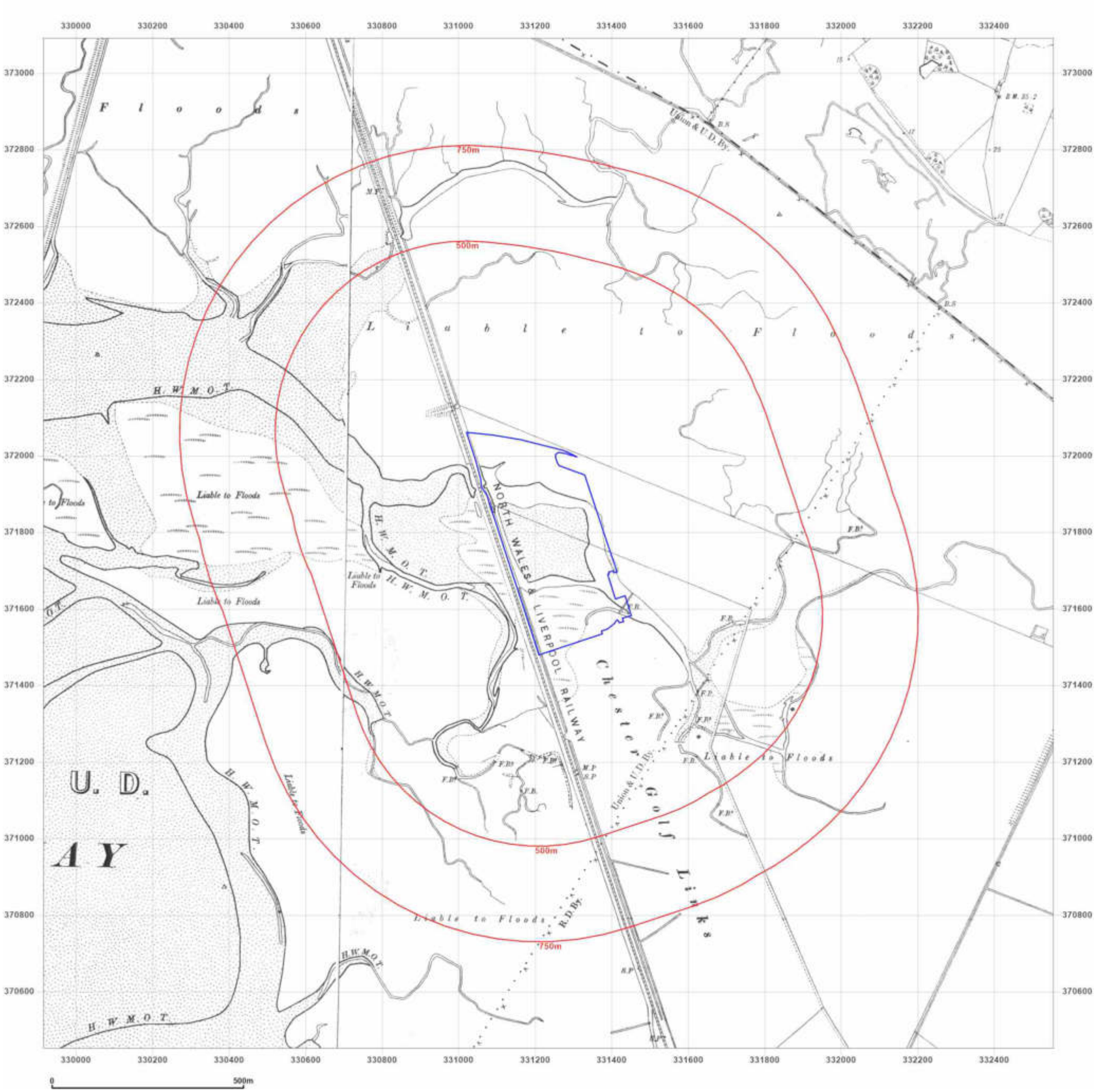

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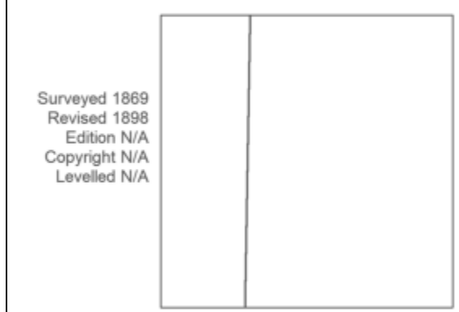

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Map legend available at:
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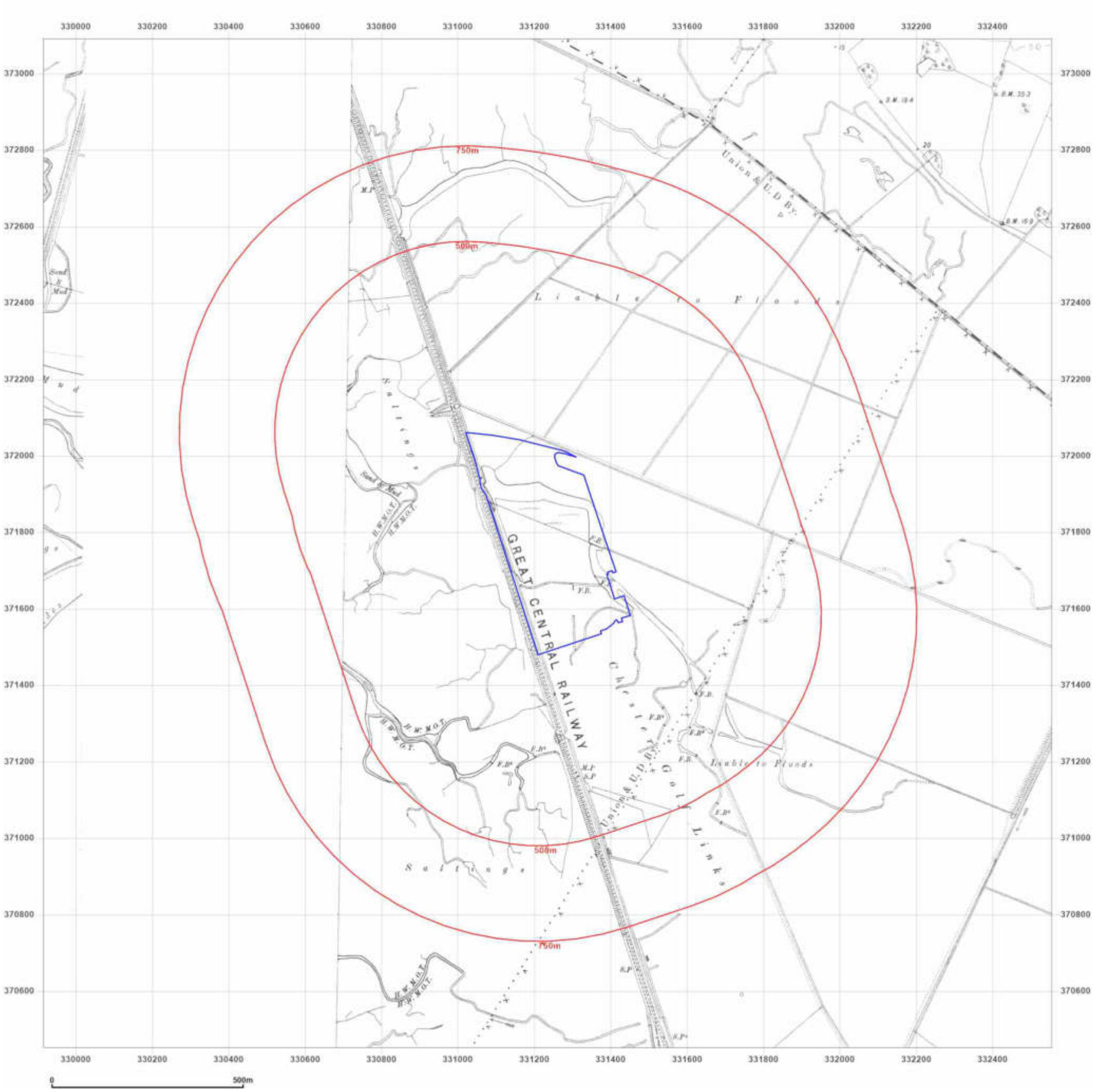

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: County Series

Map date: **1909-1913**

Scale: 1:10,560

Printed at: 1:10,560

N
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Surveyed 1871
Revised 1909
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1869
Revised 1913
Edition 1913
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Production date: 15 June 2023

Map legend available at:
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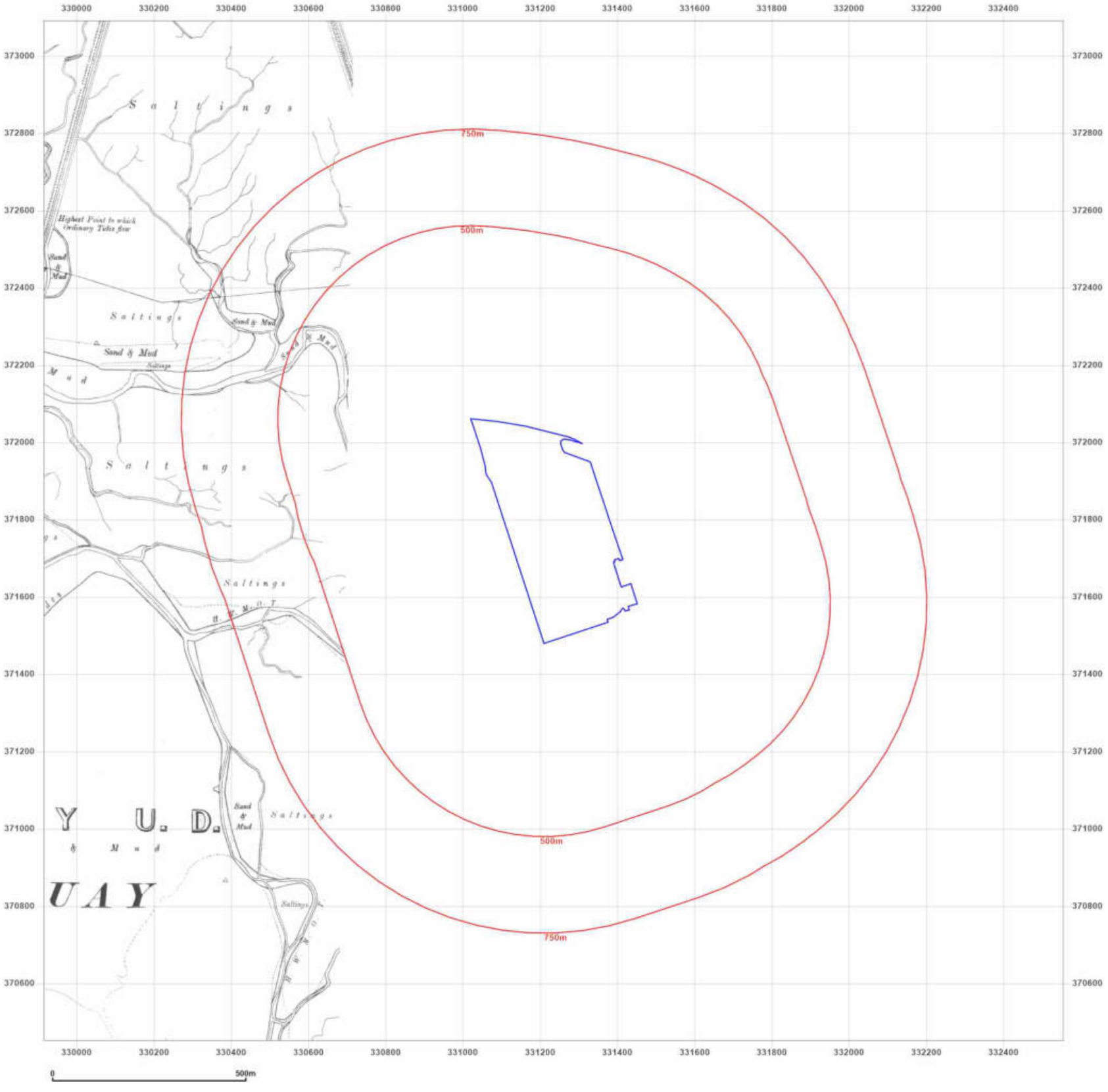

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: County Series

Map date: **1913**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1869
Revised 1913
Edition 1913
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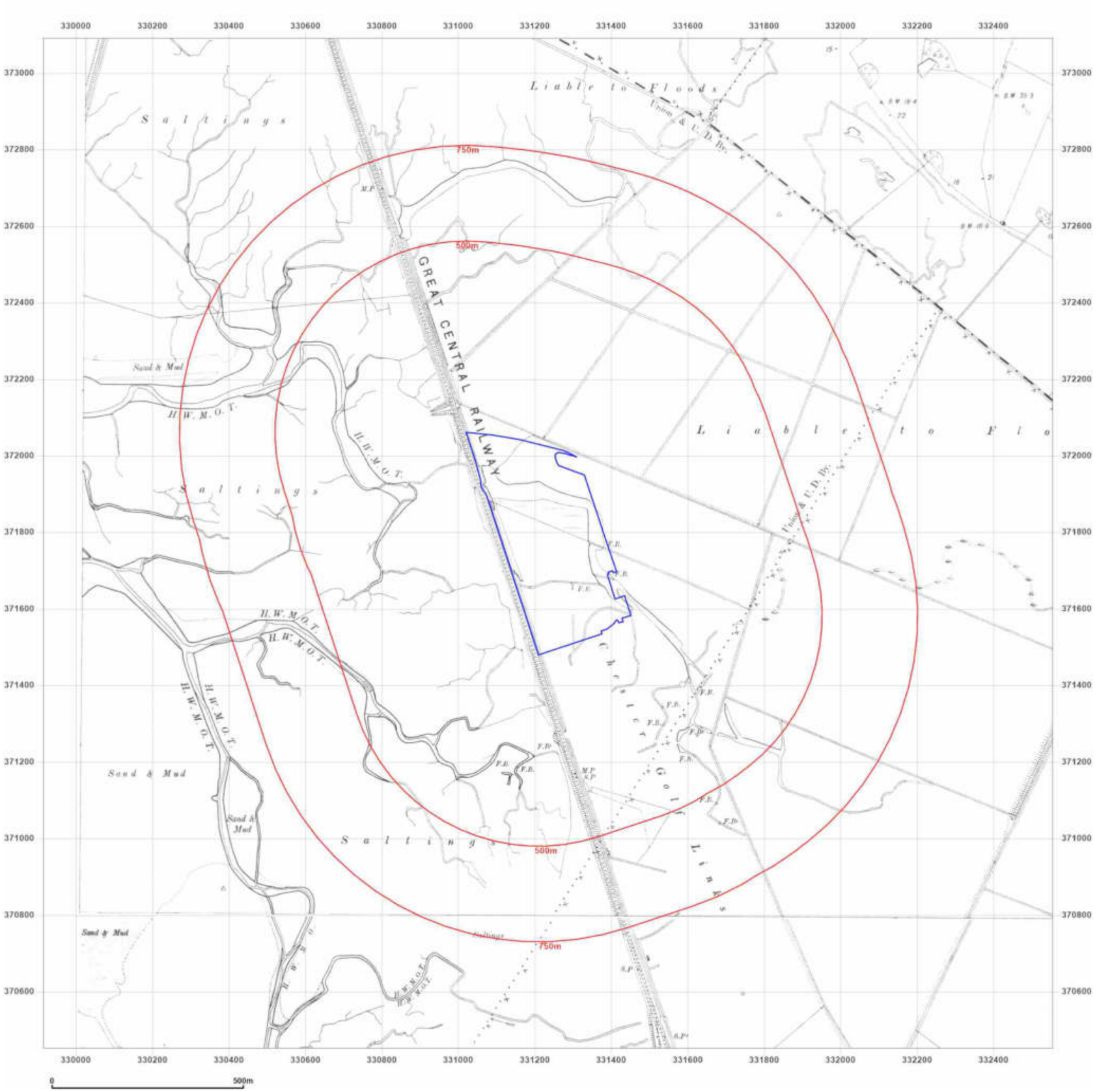

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: County Series

Map date: **1913-1914**

Scale: 1:10,560

Printed at: 1:10,560

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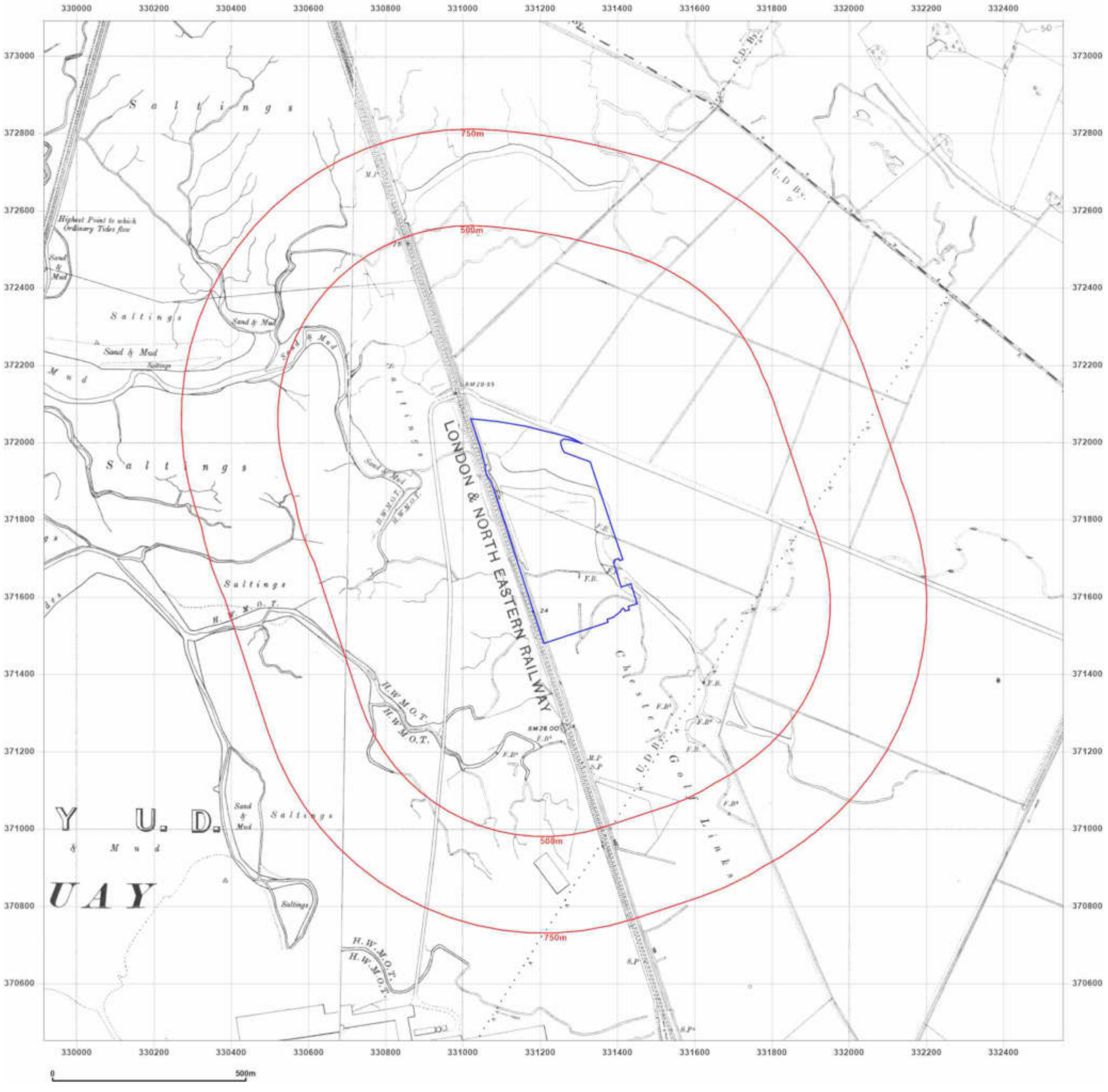

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: County Series
Map date: **1938**
Scale: 1:10,560
Printed at: 1:10,560

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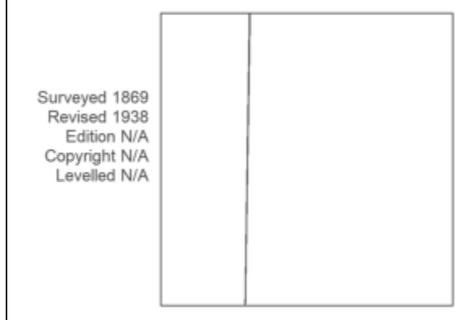

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Production date: 15 June 2023

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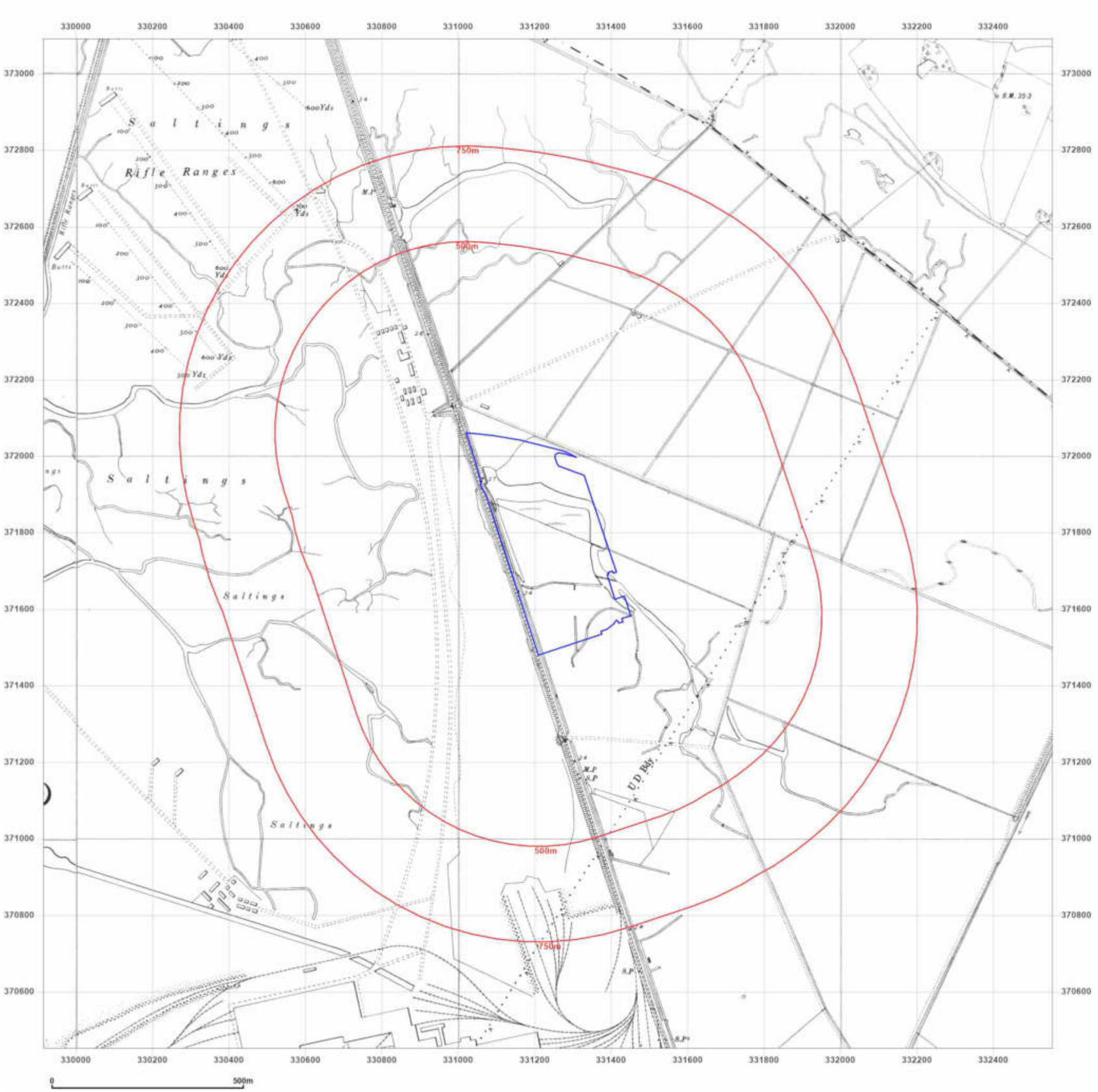

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: Provisional
Map date: **1953-1954**
Scale: 1:10,560
Printed at: 1:10,560

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Surveyed N/A
Revised 1953
Edition N/A
Copyright 1954
Levelled N/A

Surveyed N/A
Revised 1953
Edition 1954
Copyright N/A
Levelled N/A

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Production date: 15 June 2023

Map legend available at:
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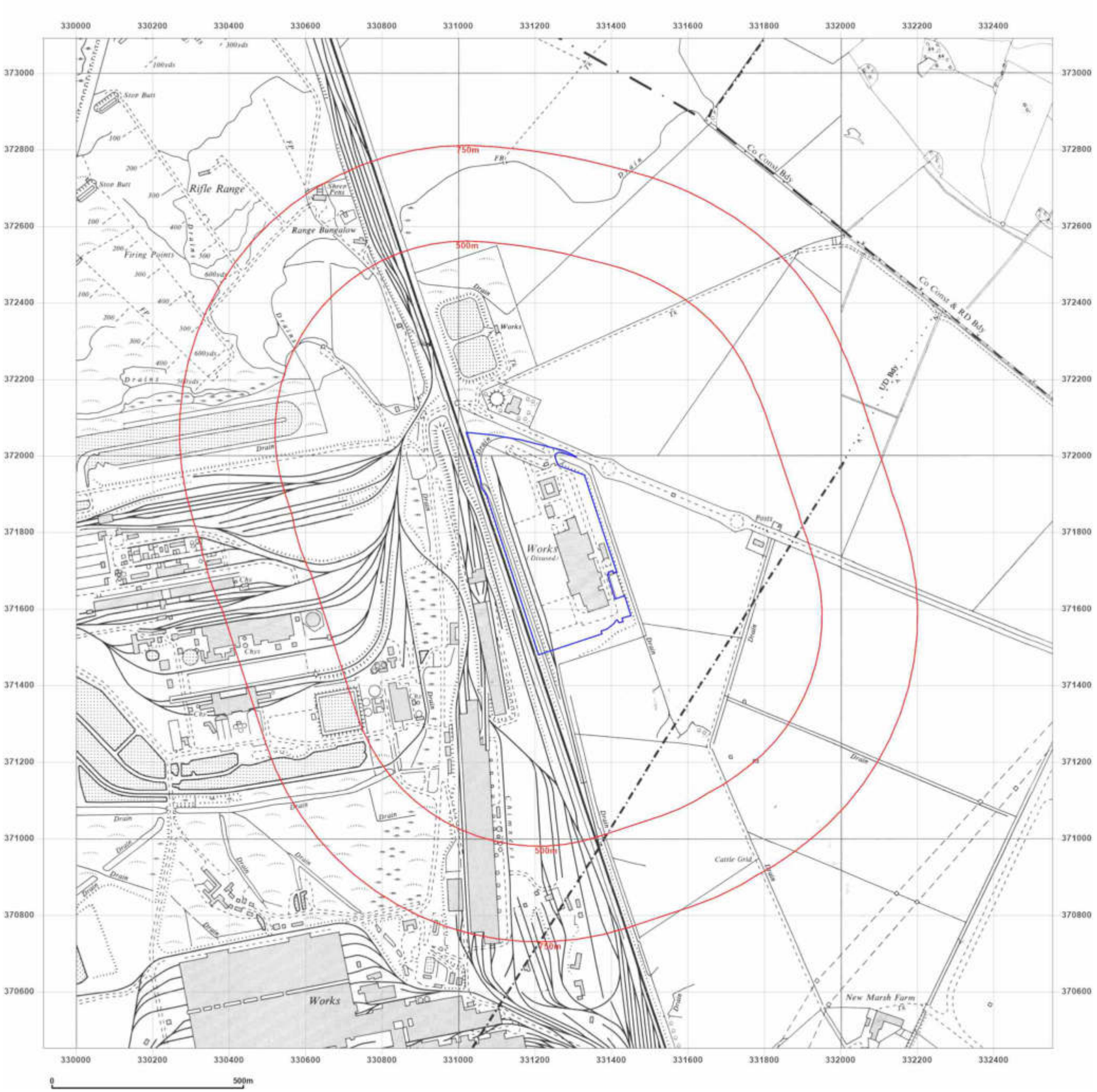

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: Provisional

Map date: **1960**

Scale: 1:10,560

Printed at: 1:10,560

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Surveyed 1872
Revised 1960
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 15 June 2023

Map legend available at:
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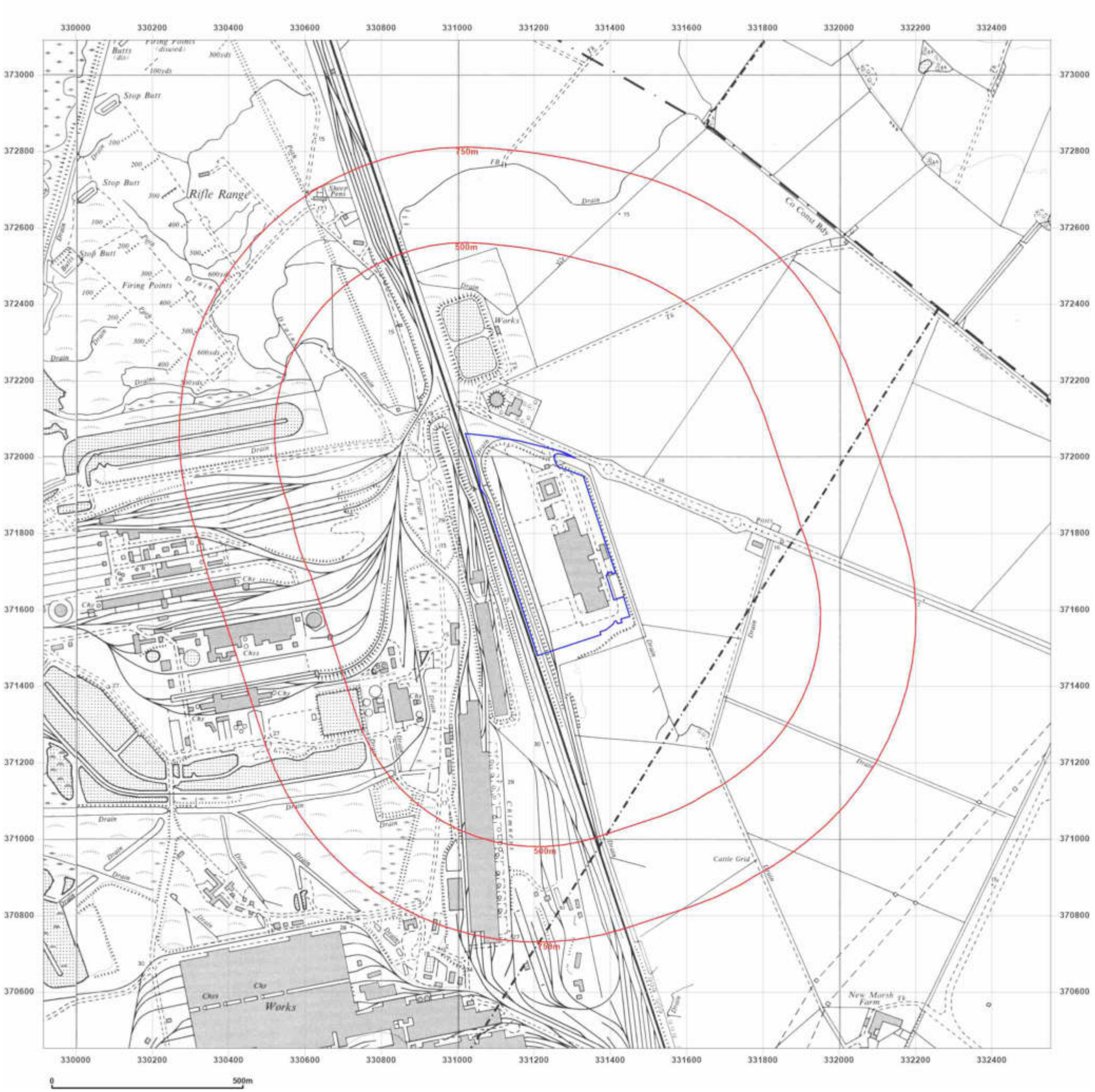

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: Provisional
Map date: **1969-1970**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1962
Revised 1968
Edition N/A
Copyright 1969
Levelled N/A

Surveyed 1965
Revised 1970
Edition N/A
Copyright 1970
Levelled N/A

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Production date: 15 June 2023

Map legend available at:
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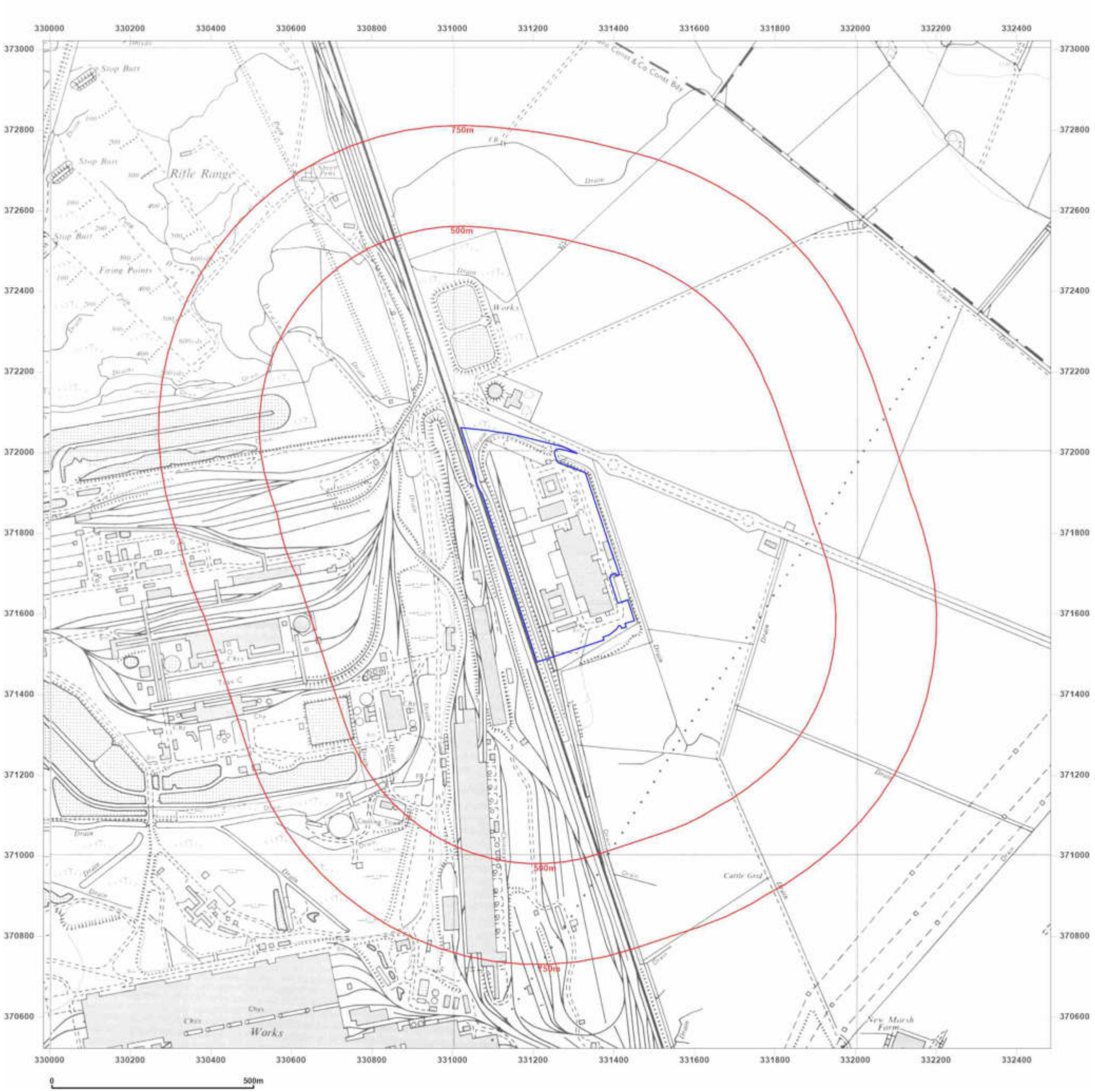

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: National Grid

Map date: **1981**

Scale: 1:10,000

Printed at: 1:10,000

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Surveyed 1981
Revised 1981
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1981
Revised 1981
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 15 June 2023

Map legend available at:
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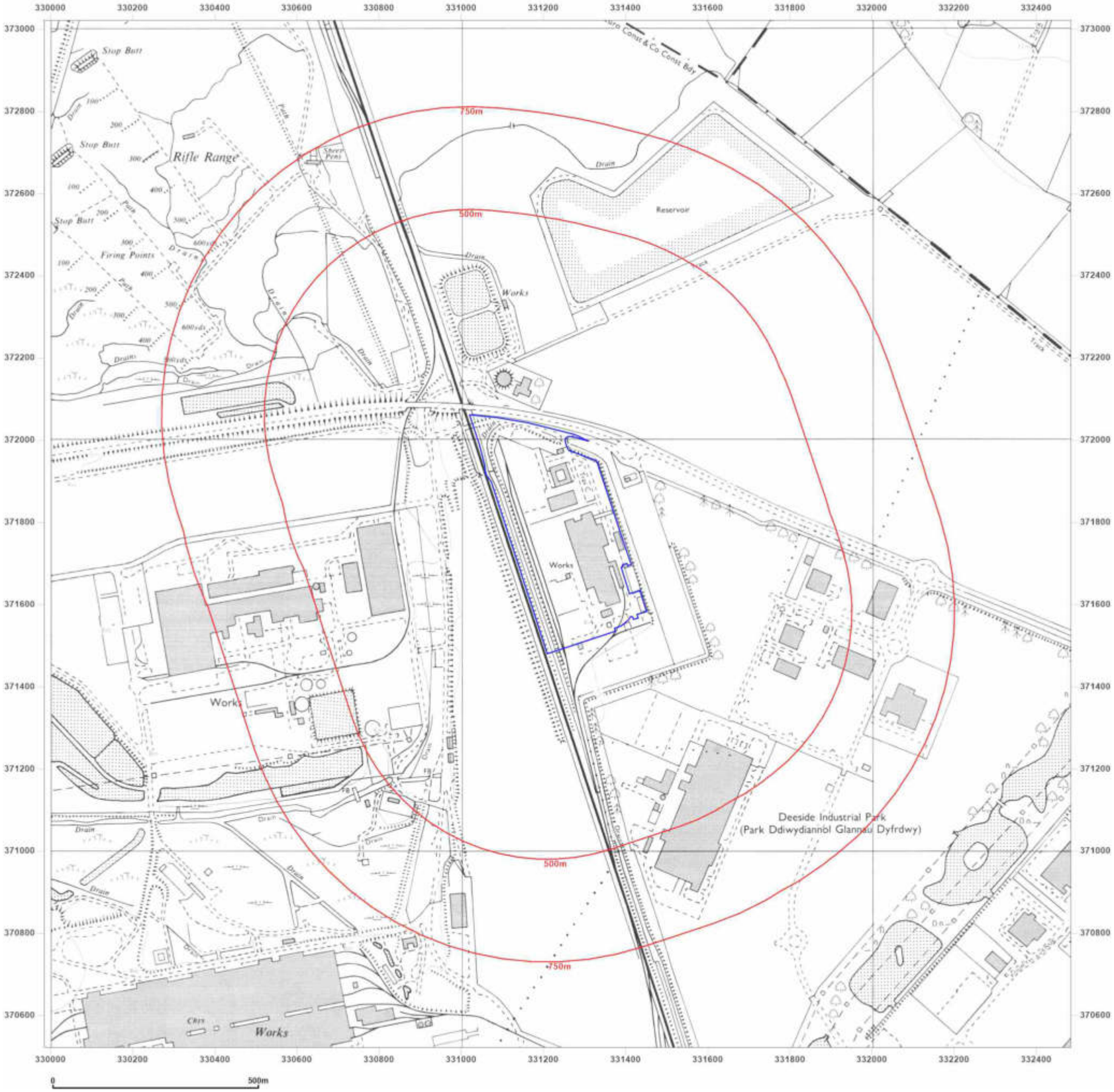

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: National Grid

Map date: **1992**

Scale: 1:10,000

Printed at: 1:10,000

N
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Surveyed 1981
Revised 1992
Edition N/A
Copyright N/A
Levelled N/A

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Production date: 15 June 2023

Map legend available at:
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EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: National Grid
Map date: **2001**
Scale: 1:10,000
Printed at: 1:10,000

N
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2001

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Production date: 15 June 2023

Map legend available at:
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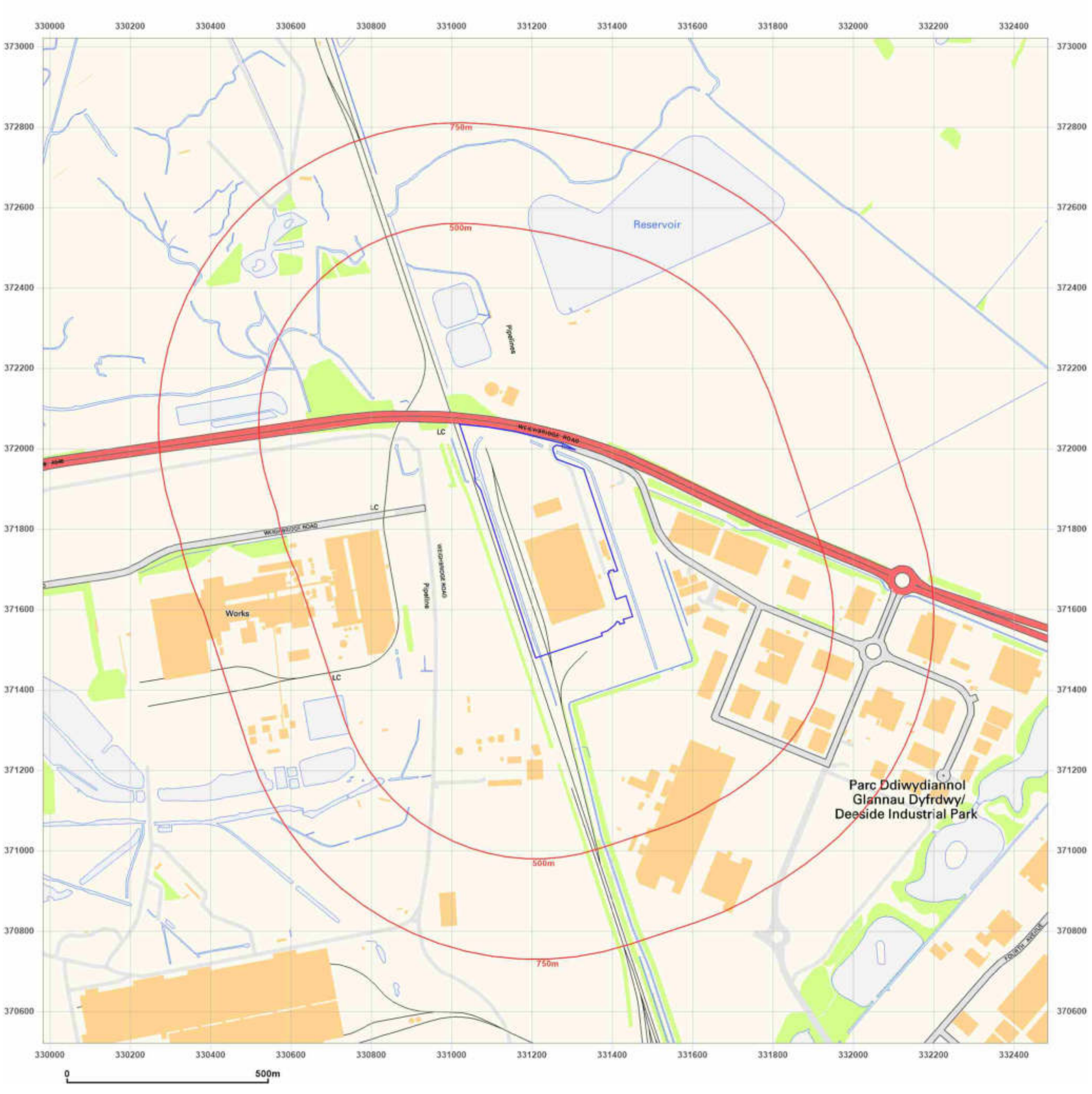

EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: National Grid
Map date: **2010**
Scale: 1:10,000
Printed at: 1:10,000

N
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2010

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sales@emapsite.com

Production date: 15 June 2023

Map legend available at:
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EMAPSITE™

Site Details:

Great Bear, Weighbridge Road,
Deeside Industrial Park, Deeside,
CH5 2LL

Client Ref: EMS_874130_1081435
Report Ref: EMS-874130_1118693
Grid Ref: 331234, 371771

Map Name: National Grid

Map date: **2023**

Scale: 1:10,000

Printed at: 1:10,000

N
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2023

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www.groundsure.com

Supplied by:
www.emapsite.com
sales@emapsite.com

Production date: 15 June 2023

Map legend available at:
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PATRICK PARSONS

Appendix C

Environmental Data Reports

Groundsure
LOCATION INTELLIGENCE

Enviro+Geo Insight

Great Bear, Weighbridge Road, Deeside Industrial Park, Deeside, CH5 2LL

Order Details

Date: 15/06/2023

Your ref: EMS_874130_1081435

Our Ref: EMS-874130_1118694

Site Details

Location: 331237 371779

Area: 13.62 ha

Authority: Sir y Fflint - Flintshire County Council ↗

Contact us with any questions at:
info@groundsure.com ↗
01273 257 755

Summary of findings

Page	Section	Past land use >	On site	0-50m	50-250m	250-500m	500-2000m
14 >	1.1 >	Historical industrial land uses >	13	1	7	36	-
17 >	1.2 >	Historical tanks >	3	0	2	19	-
18 >	1.3 >	Historical energy features >	4	2	3	17	-
19	1.4	Historical petrol stations	0	0	0	0	-
19	1.5	Historical garages	0	0	0	0	-
20	1.6	Historical military land	0	0	0	0	-
Page	Section	Past land use - un-grouped >	On site	0-50m	50-250m	250-500m	500-2000m
21 >	2.1 >	Historical industrial land uses >	12	1	10	51	-
24 >	2.2 >	Historical tanks >	5	0	3	27	-
26 >	2.3 >	Historical energy features >	5	6	4	29	-
28	2.4	Historical petrol stations	0	0	0	0	-
28	2.5	Historical garages	0	0	0	0	-
Page	Section	Waste and landfill >	On site	0-50m	50-250m	250-500m	500-2000m
29	3.1	Active or recent landfill	0	0	0	0	-
29	3.2	Historical landfill (BGS records)	0	0	0	0	-
30	3.3	Historical landfill (LA/mapping records)	0	0	0	0	-
30	3.4	Historical landfill (EA/NRW records)	0	0	0	0	-
30 >	3.5 >	Historical waste sites >	1	0	0	1	-
31 >	3.6 >	Licensed waste sites >	0	0	9	2	-
34 >	3.7 >	Waste exemptions >	21	0	0	36	-
Page	Section	Current industrial land use >	On site	0-50m	50-250m	250-500m	500-2000m
42 >	4.1 >	Recent industrial land uses >	6	1	18	-	-
44	4.2	Current or recent petrol stations	0	0	0	0	-
44 >	4.3 >	Electricity cables >	0	0	4	2	-
45 >	4.4 >	Gas pipelines >	1	0	0	0	-
45	4.5	Sites determined as Contaminated Land	0	0	0	0	-

46 >	4.6 >	Control of Major Accident Hazards (COMAH) >	1	0	0	0	-
46	4.7	Regulated explosive sites	0	0	0	0	-
46 >	4.8 >	Hazardous substance storage/usage >	1	0	0	0	-
47	4.9	Historical licensed industrial activities (IPC)	0	0	0	0	-
47 >	4.10 >	Licensed industrial activities (Part A(1)) >	0	0	5	8	-
49 >	4.11 >	Licensed pollutant release (Part A(2)/B) >	1	0	0	1	-
50	4.12	Radioactive Substance Authorisations	0	0	0	0	-
50 >	4.13 >	Licensed Discharges to controlled waters >	1	1	0	3	-
51	4.14	Pollutant release to surface waters (Red List)	0	0	0	0	-
51	4.15	Pollutant release to public sewer	0	0	0	0	-
52	4.16	List 1 Dangerous Substances	0	0	0	0	-
52	4.17	List 2 Dangerous Substances	0	0	0	0	-
52 >	4.18 >	Pollution Incidents (EA/NRW) >	1	0	9	6	-
54	4.19	Pollution inventory substances	0	0	0	0	-
54	4.20	Pollution inventory waste transfers	0	0	0	0	-
54	4.21	Pollution inventory radioactive waste	0	0	0	0	-
Page	Section	Hydrogeology >	On site	0-50m	50-250m	250-500m	500-2000m
55 >	5.1 >	Superficial aquifer >	Identified (within 500m)				
56 >	5.2 >	Bedrock aquifer >	Identified (within 500m)				
58 >	5.3 >	Groundwater vulnerability >	Identified (within 50m)				
59	5.4	Groundwater vulnerability- soluble rock risk	None (within 0m)				
60	5.5	Groundwater vulnerability- local information	None (within 0m)				
61 >	5.6 >	Groundwater abstractions >	0	0	0	1	6
63 >	5.7 >	Surface water abstractions >	0	0	0	1	0
64	5.8	Potable abstractions	0	0	0	0	0
64	5.9	Source Protection Zones	0	0	0	0	-
64	5.10	Source Protection Zones (confined aquifer)	0	0	0	0	-
Page	Section	Hydrology >	On site	0-50m	50-250m	250-500m	500-2000m
65 >	6.1 >	Water Network (OS MasterMap) >	5	2	15	-	-

67 >	6.2 >	Surface water features >	1	2	8	-	-
68 >	6.3 >	WFD Surface water body catchments >	1	-	-	-	-
68	6.4	WFD Surface water bodies	0	0	0	-	-
68 >	6.5 >	WFD Groundwater bodies >	1	-	-	-	-
Page	Section	River and coastal flooding >	On site	0-50m	50-250m	250-500m	500-2000m
69 >	7.1 >	Risk of flooding from rivers and the sea >	Low (within 50m)				
70	7.2	Historical Flood Events	0	0	0	-	-
70	7.3	Flood Defences	0	0	0	-	-
70 >	7.4 >	Areas Benefiting from Flood Defences >	2	3	0	-	-
71	7.5	Flood Storage Areas	0	0	0	-	-
72 >	7.6 >	Flood Zone 2 >	Identified (within 50m)				
73 >	7.7 >	Flood Zone 3 >	Identified (within 50m)				
Page	Section	Surface water flooding >					
74 >	8.1 >	Surface water flooding >	1 in 30 year, 0.3m - 1.0m (within 50m)				
Page	Section	Groundwater flooding >					
76 >	9.1 >	Groundwater flooding >	High (within 50m)				
Page	Section	Environmental designations >	On site	0-50m	50-250m	250-500m	500-2000m
77 >	10.1 >	Sites of Special Scientific Interest (SSSI) >	0	0	1	1	8
78 >	10.2 >	Conserved wetland sites (Ramsar sites) >	0	0	1	0	9
89 >	10.3 >	Special Areas of Conservation (SAC) >	0	0	1	0	3
90 >	10.4 >	Special Protection Areas (SPA) >	0	0	1	0	9
94	10.5	National Nature Reserves (NNR)	0	0	0	0	0
94	10.6	Local Nature Reserves (LNR)	0	0	0	0	0
94	10.7	Designated Ancient Woodland	0	0	0	0	0
95	10.8	Biosphere Reserves	0	0	0	0	0
95	10.9	Forest Parks	0	0	0	0	0
95	10.10	Marine Conservation Zones	0	0	0	0	0
95 >	10.11 >	Green Belt >	0	0	0	0	1
96	10.12	Proposed Ramsar sites	0	0	0	0	0

96	10.13	Possible Special Areas of Conservation (pSAC)	0	0	0	0	0
96	10.14	Potential Special Protection Areas (pSPA)	0	0	0	0	0
96	10.15	Nitrate Sensitive Areas	0	0	0	0	0
97 >	10.16 >	Nitrate Vulnerable Zones >	1	0	2	0	5
98 >	10.17 >	SSSI Impact Risk Zones >	2	-	-	-	-
100 >	10.18 >	SSSI Units >	0	0	0	0	2
Page	Section	Visual and cultural designations	On site	0-50m	50-250m	250-500m	500-2000m
102	11.1	World Heritage Sites	0	0	0	-	-
102	11.2	Area of Outstanding Natural Beauty	0	0	0	-	-
102	11.3	National Parks	0	0	0	-	-
102	11.4	Listed Buildings	0	0	0	-	-
103	11.5	Conservation Areas	0	0	0	-	-
103	11.6	Scheduled Ancient Monuments	0	0	0	-	-
103	11.7	Registered Parks and Gardens	0	0	0	-	-
Page	Section	Agricultural designations >	On site	0-50m	50-250m	250-500m	500-2000m
104 >	12.1 >	Agricultural Land Classification >	Grade 5 (within 250m)				
105	12.2	Open Access Land	0	0	0	-	-
105	12.3	Tree Felling Licences	0	0	0	-	-
105	12.4	Environmental Stewardship Schemes	0	0	0	-	-
105	12.5	Countryside Stewardship Schemes	0	0	0	-	-
Page	Section	Habitat designations	On site	0-50m	50-250m	250-500m	500-2000m
106	13.1	Priority Habitat Inventory	0	0	0	-	-
106	13.2	Habitat Networks	0	0	0	-	-
106	13.3	Open Mosaic Habitat	0	0	0	-	-
106	13.4	Limestone Pavement Orders	0	0	0	-	-
Page	Section	Geology 1:10,000 scale >	On site	0-50m	50-250m	250-500m	500-2000m
107 >	14.1 >	10k Availability >	Identified (within 500m)				
108	14.2	Artificial and made ground (10k)	0	0	0	0	-
109	14.3	Superficial geology (10k)	0	0	0	0	-

109	14.4	Landslip (10k)	0	0	0	0	-
110	14.5	Bedrock geology (10k)	0	0	0	0	-
110	14.6	Bedrock faults and other linear features (10k)	0	0	0	0	-
Page	Section	**Geology 1:50,000 scale >**	On site	0-50m	50-250m	250-500m	500-2000m
111 >	15.1 >	50k Availability >	Identified (within 500m)				
112 >	15.2 >	Artificial and made ground (50k) >	1	0	0	1	-
113 >	15.3 >	Artificial ground permeability (50k) >	1	0	-	-	-
114 >	15.4 >	Superficial geology (50k) >	1	0	0	0	-
115 >	15.5 >	Superficial permeability (50k) >	Identified (within 50m)				
115	15.6	Landslip (50k)	0	0	0	0	-
115	15.7	Landslip permeability (50k)	None (within 50m)				
116 >	15.8 >	Bedrock geology (50k) >	1	0	1	0	-
117 >	15.9 >	Bedrock permeability (50k) >	Identified (within 50m)				
117	15.10	Bedrock faults and other linear features (50k)	0	0	0	0	-
Page	Section	**Boreholes >**	On site	0-50m	50-250m	250-500m	500-2000m
118 >	16.1 >	BGS Boreholes >	31	11	44	-	-
Page	Section	**Natural ground subsidence >**					
123 >	17.1 >	Shrink swell clays >	Very low (within 50m)				
124 >	17.2 >	Running sands >	Moderate (within 50m)				
126 >	17.3 >	Compressible deposits >	Moderate (within 50m)				
128 >	17.4 >	Collapsible deposits >	Negligible (within 50m)				
129 >	17.5 >	Landslides >	Moderate (within 50m)				
131 >	17.6 >	Ground dissolution of soluble rocks >	Negligible (within 50m)				
Page	Section	**Mining and ground workings >**	On site	0-50m	50-250m	250-500m	500-2000m
133	18.1	BritPits	0	0	0	0	-
134 >	18.2 >	Surface ground workings >	1	0	5	-	-
134 >	18.3 >	Underground workings >	0	0	0	0	2
134	18.4	Underground mining extents	0	0	0	0	-
135	18.5	Historical Mineral Planning Areas	0	0	0	0	-

135 >	18.6 >	Non-coal mining >	0	0	1	0	3
136	18.7	JPB mining areas	None (within 0m)				
136	18.8	The Coal Authority non-coal mining	0	0	0	0	-
136	18.9	Researched mining	0	0	0	0	-
136	18.10	Mining record office plans	0	0	0	0	-
137	18.11	BGS mine plans	0	0	0	0	-
137	18.12	Coal mining	None (within 0m)				
137	18.13	Brine areas	None (within 0m)				
137	18.14	Gypsum areas	None (within 0m)				
137	18.15	Tin mining	None (within 0m)				
138	18.16	Clay mining	None (within 0m)				
Page	Section	Ground cavities and sinkholes	On site	0-50m	50-250m	250-500m	500-2000m
139	19.1	Natural cavities	0	0	0	0	-
139	19.2	Mining cavities	0	0	0	0	0
139	19.3	Reported recent incidents	0	0	0	0	-
139	19.4	Historical incidents	0	0	0	0	-
140	19.5	National karst database	0	0	0	0	-
Page	Section	Radon >					
141 >	20.1 >	Radon >	Less than 1% (within 0m)				
Page	Section	Soil chemistry >	On site	0-50m	50-250m	250-500m	500-2000m
143 >	21.1 >	BGS Estimated Background Soil Chemistry >	4	4	-	-	-
143	21.2	BGS Estimated Urban Soil Chemistry	0	0	-	-	-
144	21.3	BGS Measured Urban Soil Chemistry	0	0	-	-	-
Page	Section	Railway infrastructure and projects >	On site	0-50m	50-250m	250-500m	500-2000m
145	22.1	Underground railways (London)	0	0	0	-	-
145	22.2	Underground railways (Non-London)	0	0	0	-	-
146	22.3	Railway tunnels	0	0	0	-	-
146 >	22.4 >	Historical railway and tunnel features >	11	4	9	-	-
147	22.5	Royal Mail tunnels	0	0	0	-	-

147 >	22.6 >	Historical railways >	0	0	1	-	-
148 >	22.7 >	Railways >	0	8	9	-	-
148	22.8	Crossrail 1	0	0	0	0	-
149	22.9	Crossrail 2	0	0	0	0	-
149	22.10	HS2	0	0	0	0	-

Recent aerial photograph

Capture Date: 10/04/2020

Site Area: 13.62ha

Recent site history - 2017 aerial photograph

Capture Date: 07/05/2017

Site Area: 13.62ha

Recent site history - 2009 aerial photograph

Capture Date: 01/06/2009

Site Area: 13.62ha

Recent site history - 2001 aerial photograph

Capture Date: 28/07/2001

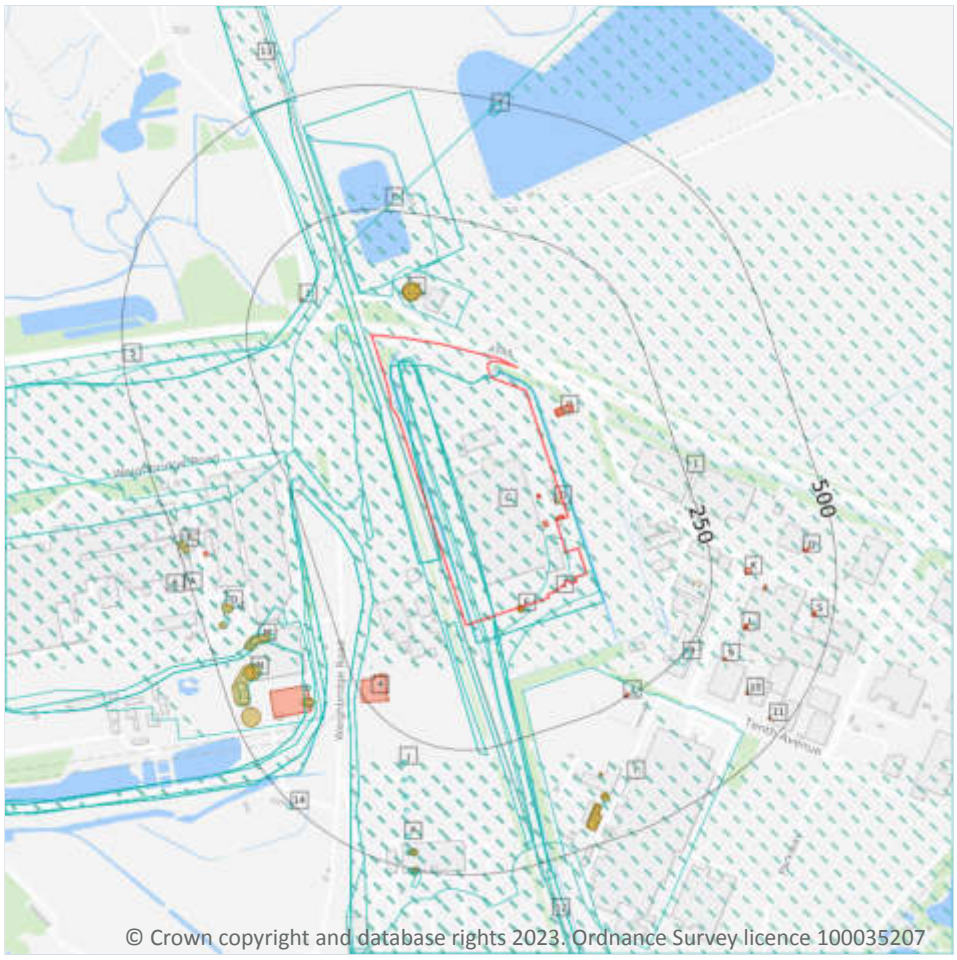
Site Area: 13.62ha

Recent site history - 2000 aerial photograph

Capture Date: 04/09/2000

Site Area: 13.62ha

1 Past land use



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

1.1 Historical industrial land uses

Records within 500m	57

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 1:10,560 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
1	**On site**	**Airfield**	**1948**	**808717**

ID	Location	Land use	Dates present	Group ID
2	**On site**	**Railway Sidings**	**1992**	**858889**
A	**On site**	**Railway Sidings**	**1981**	**791244**
A	**On site**	**Railway Sidings**	**1969**	**844346**
A	**On site**	**Railway Sidings**	**1969**	**867410**
A	**On site**	**Unspecified Commercial/Industrial**	**1969**	**885292**
A	**On site**	**Railway Sidings**	**1960**	**917387**
A	**On site**	**Unspecified Commercial/Industrial**	**1960**	**948887**
B	**On site**	**Unspecified Commercial/Industrial**	**1981**	**791250**
C	**On site**	**Unspecified Disused Works**	**1960**	**813343**
C	**On site**	**Unspecified Works**	**1992**	**830083**
C	**On site**	**Unspecified Commercial/Industrial**	**1981**	**850635**
C	**On site**	**Unspecified Commercial/Industrial**	**1969**	**887068**
F	40m N	Unspecified Works	1981	978120
H	77m N	Unspecified Tank	1960 - 1969	864783
H	77m N	Unspecified Tank	1981 - 1992	964375
F	79m NW	Unspecified Works	1992	883677
F	87m NW	Unspecified Works	1960 - 1969	901333
I	160m SE	Unspecified Commercial/Industrial	1992	796402
5	206m NW	Unspecified Pit	1992	839232
6	231m W	Unspecified Works	1992	830079
8	252m SE	Unspecified Heap	1913	803517
J	298m S	Chimneys	1960 - 1969	862317
J	298m S	Chimneys	1981	991371
J	330m S	Chimneys	1960 - 1969	965951
J	330m S	Chimneys	1981	976890
B	335m SW	Chimney	1981	921611
B	335m SW	Chimney	1960 - 1969	953701
B	341m SW	Unspecified Tank	1960 - 1969	878624

ID	Location	Land use	Dates present	Group ID
B	341m SW	Unspecified Tank	1981	940657
J	360m S	Chimneys	1981	873012
J	360m S	Chimneys	1960 - 1969	907034
M	371m SW	Unspecified Tanks	1981	977832
J	385m S	Chimneys	1960 - 1969	897535
M	385m SW	Unspecified Tanks	1960 - 1969	943946
I	413m S	Unspecified Tank	1992	824019
N	415m SW	Unspecified Tanks	1981	814942
N	422m SW	Unspecified Tank	1960 - 1969	973944
O	430m SW	Unspecified Tank	1992	824059
P	434m S	Chimneys	1960 - 1969	851351
P	434m S	Chimneys	1981	863441
O	452m SW	Unspecified Tank	1992	824058
N	457m SW	Unspecified Tank	1960 - 1969	909070
P	459m S	Chimneys	1960 - 1969	879595
P	459m S	Chimneys	1981	964341
N	460m SW	Unspecified Tank	1960 - 1969	962312
12	465m S	Slag Works	1938 - 1948	870652
P	465m S	Chimneys	1960 - 1969	921047
T	470m N	Unspecified Heap	1969	901345
T	470m N	Unspecified Heap	1981	955687
R	478m W	Unspecified Tank	1992	824060
13	492m NW	Railway Sidings	1960 - 1969	875989
P	494m S	Chimneys	1981	964633
P	498m S	Chimneys	1960	924552
P	498m S	Chimneys	1969	966577
14	499m SW	Unspecified Tank	1981	824055
P	499m S	Chimneys	1960 - 1969	918199

This data is sourced from Ordnance Survey / Groundsure.

1.2 Historical tanks

Records within 500m	24

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
D	**On site**	**Unspecified Tank**	**1997**	**111698**
E	**On site**	**Unspecified Tank**	**1991**	**136628**
E	**On site**	**Unspecified Tank**	**1984 - 1994**	**137923**
H	76m N	Unspecified Tank	1985 - 1990	133657
H	78m N	Unspecified Tank	1963	128568
B	340m SW	Unspecified Tank	1963 - 1978	138702
I	365m S	Unspecified Tank	1992	148124
I	367m S	Unspecified Tank	1994 - 1997	138036
M	381m SW	Tanks	1963 - 1978	129162
I	405m S	Unspecified Tank	1992	131346
I	409m S	Unspecified Tank	1994 - 1997	138329
I	420m S	Tanks	1992	130061
N	420m SW	Unspecified Tank	1963	111708
I	423m S	Tanks	1994 - 1997	137030
N	429m SW	Tanks	1963 - 1978	148924
O	434m SW	Unspecified Tank	1991	111710
N	449m SW	Unspecified Tank	1991	111705
O	457m SW	Unspecified Tank	1984 - 1991	134347
P	461m S	Unspecified Tank	1963	111702
P	461m S	Unspecified Tank	-	104317
R	462m W	Unspecified Tank	1991	111711

ID	Location	Land use	Dates present	Group ID
P	467m S	Unspecified Tank	-	104407
R	481m W	Tanks	1984 - 1991	125863
P	495m S	Unspecified Tank	1962	111701

This data is sourced from Ordnance Survey / Groundsure.

1.3 Historical energy features

Records within 500m	**26**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use map on **page 14 >**

ID	Location	Land use	Dates present	Group ID
D	**On site**	**Electricity Substation**	**1997**	**60774**
D	**On site**	**Electricity Substation**	**1997**	**60775**
D	**On site**	**Electricity Substation**	**1991 - 1992**	**64127**
D	**On site**	**Electricity Substation**	**1994**	**64777**
G	43m NE	Electricity Substation	1984 - 1992	81647
G	44m NE	Electricity Substation	1983 - 1997	79790
3	153m NW	Electricity Substation	1992 - 1997	64736
4	188m SW	Electricity Substation	1997	60773
7	243m SE	Electricity Substation	1991	60776
K	316m E	Electricity Substation	1984 - 1994	75578
9	323m SE	Electricity Substation	1994 - 1997	66081
L	333m SE	Electricity Substation	1991 - 1992	71971
L	334m SE	Electricity Substation	1997	76853
L	336m SE	Electricity Substation	1994	66194
B	340m SW	Electricity Substation	1984 - 1991	67757

ID	Location	Land use	Dates present	Group ID
K	354m E	Electricity Substation	1991 - 1992	68173
K	356m E	Electricity Substation	1997	60777
K	357m E	Electricity Substation	1994	70604
10	397m SE	Electricity Substation	1994 - 1997	76966
Q	436m E	Electricity Substation	1992 - 1997	68682
Q	438m E	Electricity Substation	1991	67637
R	447m W	Electricity Substation	1991	60772
S	459m SE	Electricity Substation	1991 - 1992	65161
S	460m E	Electricity Substation	1997	76965
S	461m SE	Electricity Substation	1994	69198
11	464m SE	Electricity Substation	1994 - 1997	75713

This data is sourced from Ordnance Survey / Groundsure.

1.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

1.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale, intelligently grouped into contiguous features. To prevent misrepresentation of the size of historical features at any given time, features are only grouped if they have similar geometries within immediately preceding or succeeding map editions. See section 2 for a breakdown of grouping if required. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

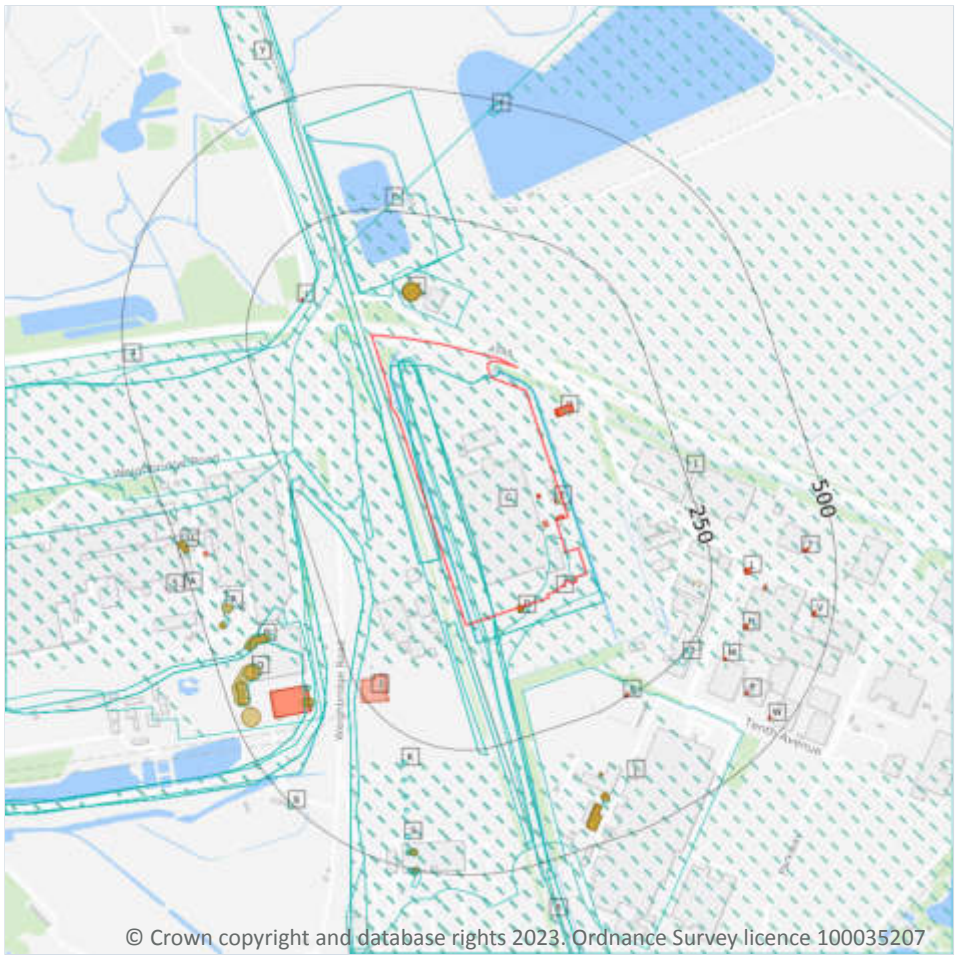
1.6 Historical military land

Records within 500m	0

Areas of military land digitised from multiple sources including the National Archives, local records, MOD records and verified other sources, intelligently grouped into contiguous features.

This data is sourced from Ordnance Survey / Groundsure / other sources.

2 Past land use - un-grouped



Site Outline

Search buffers in metres (m)

Historical industrial land uses

Historical tanks

Historical energy features

2.1 Historical industrial land uses

Records within 500m	74

Potentially contaminative land use features digitised from historical Ordnance Survey mapping at 1:10,000 and 10,560 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 21 >**

ID	Location	Land Use	Date	Group ID
1	**On site**	**Airfield**	**1948**	**808717**
2	**On site**	**Railway Sidings**	**1992**	**858889**
A	**On site**	**Railway Sidings**	**1981**	**791244**

ID	Location	Land Use	Date	Group ID
A	**On site**	**Railway Sidings**	**1960**	**917387**
A	**On site**	**Unspecified Commercial/Industrial**	**1960**	**948887**
A	**On site**	**Unspecified Commercial/Industrial**	**1969**	**885292**
A	**On site**	**Railway Sidings**	**1969**	**844346**
B	**On site**	**Unspecified Commercial/Industrial**	**1981**	**791250**
C	**On site**	**Unspecified Commercial/Industrial**	**1981**	**850635**
C	**On site**	**Unspecified Disused Works**	**1960**	**813343**
C	**On site**	**Unspecified Commercial/Industrial**	**1969**	**887068**
C	**On site**	**Unspecified Works**	**1992**	**830083**
F	40m N	Unspecified Works	1981	978120
H	77m N	Unspecified Tank	1981	964375
H	77m N	Unspecified Tank	1960	864783
H	77m N	Unspecified Tank	1969	864783
H	77m N	Unspecified Tank	1992	964375
F	79m NW	Unspecified Works	1992	883677
F	87m NW	Unspecified Works	1960	901333
F	87m NW	Unspecified Works	1969	901333
J	160m SE	Unspecified Commercial/Industrial	1992	796402
4	206m NW	Unspecified Pit	1992	839232
5	231m W	Unspecified Works	1992	830079
7	252m SE	Unspecified Heap	1913	803517
K	298m S	Chimneys	1981	991371
K	298m S	Chimneys	1960	862317
K	298m S	Chimneys	1969	862317
K	330m S	Chimneys	1981	976890
K	330m S	Chimneys	1960	965951
K	330m S	Chimneys	1969	965951
B	335m SW	Chimney	1981	921611

ID	Location	Land Use	Date	Group ID
B	335m SW	Chimney	1960	953701
B	335m SW	Chimney	1969	953701
B	341m SW	Unspecified Tank	1981	940657
B	341m SW	Unspecified Tank	1960	878624
B	341m SW	Unspecified Tank	1969	878624
K	360m S	Chimneys	1981	873012
K	360m S	Chimneys	1960	907034
K	360m S	Chimneys	1969	907034
O	371m SW	Unspecified Tanks	1981	977832
K	385m S	Chimneys	1960	897535
K	385m S	Chimneys	1969	897535
O	385m SW	Unspecified Tanks	1960	943946
O	385m SW	Unspecified Tanks	1969	943946
J	413m S	Unspecified Tank	1992	824019
Q	415m SW	Unspecified Tanks	1981	814942
Q	422m SW	Unspecified Tank	1960	973944
Q	422m SW	Unspecified Tank	1969	973944
R	430m SW	Unspecified Tank	1992	824059
S	434m S	Chimneys	1981	863441
S	434m S	Chimneys	1960	851351
S	434m S	Chimneys	1969	851351
R	452m SW	Unspecified Tank	1992	824058
Q	457m SW	Unspecified Tank	1960	909070
Q	457m SW	Unspecified Tank	1969	909070
S	459m S	Chimneys	1981	964341
S	459m S	Chimneys	1960	879595
S	459m S	Chimneys	1969	879595
Q	460m SW	Unspecified Tank	1960	962312

ID	Location	Land Use	Date	Group ID
Q	460m SW	Unspecified Tank	1969	962312
8	465m S	Slag Works	1948	870652
S	465m S	Chimneys	1960	921047
S	465m S	Chimneys	1969	921047
X	470m N	Unspecified Heap	1981	955687
X	470m N	Unspecified Heap	1969	901345
U	478m W	Unspecified Tank	1992	824060
Y	492m NW	Railway Sidings	1969	875989
S	494m S	Chimneys	1981	964633
Y	498m NW	Railway Sidings	1960	875989
S	498m S	Chimneys	1960	924552
S	498m S	Chimneys	1969	966577
9	499m SW	Unspecified Tank	1981	824055
S	499m S	Chimneys	1960	918199
S	499m S	Chimneys	1969	918199

This data is sourced from Ordnance Survey / Groundsure.

2.2 Historical tanks

Records within 500m	**35**

Tank features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 21 >**

ID	Location	Land Use	Date	Group ID
D	**On site**	**Unspecified Tank**	**1994**	**137923**
D	**On site**	**Unspecified Tank**	**1991**	**136628**
D	**On site**	**Unspecified Tank**	**1984**	**137923**
D	**On site**	**Unspecified Tank**	**1992**	**137923**
E	**On site**	**Unspecified Tank**	**1997**	**111698**

ID	Location	Land Use	Date	Group ID
H	76m N	Unspecified Tank	1990	133657
H	76m N	Unspecified Tank	1985	133657
H	78m N	Unspecified Tank	1963	128568
B	340m SW	Unspecified Tank	1963	138702
B	349m SW	Unspecified Tank	1978	138702
J	365m S	Unspecified Tank	1992	148124
J	367m S	Unspecified Tank	1994	138036
J	367m S	Unspecified Tank	1997	138036
O	381m SW	Tanks	1978	129162
O	387m SW	Tanks	1963	129162
J	405m S	Unspecified Tank	1992	131346
J	409m S	Unspecified Tank	1994	138329
J	409m S	Unspecified Tank	1997	138329
J	420m S	Tanks	1992	130061
Q	420m SW	Unspecified Tank	1963	111708
J	423m S	Tanks	1994	137030
J	423m S	Tanks	1997	137030
Q	429m SW	Tanks	1978	148924
R	434m SW	Unspecified Tank	1991	111710
Q	449m SW	Unspecified Tank	1991	111705
Q	455m SW	Tanks	1963	148924
R	457m SW	Unspecified Tank	1991	134347
R	459m SW	Unspecified Tank	1984	134347
S	461m S	Unspecified Tank	1963	111702
S	461m S	Unspecified Tank	-	104317
U	462m W	Unspecified Tank	1991	111711
S	467m S	Unspecified Tank	-	104407
U	481m W	Tanks	1991	125863

ID	Location	Land Use	Date	Group ID
U	483m W	Tanks	1984	125863
S	495m S	Unspecified Tank	1962	111701

This data is sourced from Ordnance Survey / Groundsure.

2.3 Historical energy features

Records within 500m	**44**

Energy features digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

Features are displayed on the Past land use - un-grouped map on **page 21 >**

ID	Location	Land Use	Date	Group ID
E	**On site**	**Electricity Substation**	**1994**	**64777**
E	**On site**	**Electricity Substation**	**1991**	**64127**
E	**On site**	**Electricity Substation**	**1992**	**64127**
E	**On site**	**Electricity Substation**	**1997**	**60775**
E	**On site**	**Electricity Substation**	**1997**	**60774**
G	43m NE	Electricity Substation	1984	81647
G	43m NE	Electricity Substation	1992	81647
G	44m NE	Electricity Substation	1994	79790
G	44m NE	Electricity Substation	1997	79790
G	46m NE	Electricity Substation	1983	79790
G	46m NE	Electricity Substation	1991	79790
I	153m NW	Electricity Substation	1997	64736
I	153m NW	Electricity Substation	1992	64736
3	188m SW	Electricity Substation	1997	60773
6	243m SE	Electricity Substation	1991	60776
L	316m E	Electricity Substation	1984	75578
L	316m E	Electricity Substation	1992	75578
L	318m E	Electricity Substation	1994	75578

ID	Location	Land Use	Date	Group ID
L	318m E	Electricity Substation	1991	75578
M	323m SE	Electricity Substation	1994	66081
M	323m SE	Electricity Substation	1997	66081
N	333m SE	Electricity Substation	1992	71971
N	334m SE	Electricity Substation	1997	76853
N	335m SE	Electricity Substation	1991	71971
N	336m SE	Electricity Substation	1994	66194
B	340m SW	Electricity Substation	1991	67757
B	342m SW	Electricity Substation	1984	67757
L	354m E	Electricity Substation	1992	68173
L	356m E	Electricity Substation	1997	60777
L	357m E	Electricity Substation	1994	70604
L	357m E	Electricity Substation	1991	68173
P	397m SE	Electricity Substation	1994	76966
P	397m SE	Electricity Substation	1997	76966
T	436m E	Electricity Substation	1992	68682
T	438m E	Electricity Substation	1991	67637
T	438m E	Electricity Substation	1994	68682
T	438m E	Electricity Substation	1997	68682
U	447m W	Electricity Substation	1991	60772
V	459m SE	Electricity Substation	1992	65161
V	460m E	Electricity Substation	1997	76965
V	461m SE	Electricity Substation	1994	69198
V	461m SE	Electricity Substation	1991	65161
W	464m SE	Electricity Substation	1994	75713
W	464m SE	Electricity Substation	1997	75713

This data is sourced from Ordnance Survey / Groundsure.

2.4 Historical petrol stations

Records within 500m	0

Petrol stations digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

2.5 Historical garages

Records within 500m	0

Garages digitised from historical Ordnance Survey mapping at high-detail 1:1,250 and 1:2,500 scale. Any records shown are available intelligently grouped in section 1. Grouped and the original un-grouped features can be cross-referenced across sections 1 and 2 using the 'Group ID'.

This data is sourced from Ordnance Survey / Groundsure.

3 Waste and landfill

Site Outline

Search buffers in metres (m)

Historical waste sites

Licensed waste sites

Waste exemptions

3.1 Active or recent landfill

Records within 500m	0

Active or recently closed landfill sites under Environment Agency/Natural Resources Wales regulation.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.2 Historical landfill (BGS records)

Records within 500m	0

Landfill sites identified on a survey carried out on behalf of the DoE in 1973. These sites may have been closed or operational at this time.

This data is sourced from the British Geological Survey.

3.3 Historical landfill (LA/mapping records)

Records within 500m	0

Landfill sites identified from Local Authority records and high detail historical mapping.

This data is sourced from the Ordnance Survey/Groundsure and Local Authority records.

3.4 Historical landfill (EA/NRW records)

Records within 500m	0

Known historical (closed) landfill sites (e.g. sites where there is no PPC permit or waste management licence currently in force). This includes sites that existed before the waste licensing regime and sites that have been licensed in the past but where a licence has been revoked, ceased to exist or surrendered and a certificate of completion has been issued.

This data is sourced from the Environment Agency and Natural Resources Wales.

3.5 Historical waste sites

Records within 500m	2

Waste site records derived from Local Authority planning records and high detail historical mapping.

Features are displayed on the Waste and landfill map on **page 29 >**

ID	Location	Address	Further Details	Date
A	**On site**	**Site Address: Weighbridge Road, Deeside Industrial ParkDeesideClwydCH5 2LL**	**Type of Site: Municipal Solid Waste Recycling/Recovery Plant** **Planning application reference: 58270** **Description: Scheme comprises the planning application seeks detailed planning consent for a municipal solid waste (msw) and commercial and industrial waste (c and i) recycling and recovery plant on land at deeside industrial estate, flintshire enterprise zone.** **Data source: Historic Planning Application** **Data Type: Point**	-

ID	Location	Address	Further Details	Date
G	467m SE	Site Address: Toyota Motor Manufacturing, UK, 3 Tenth Avenue, Deeside, Industrial Park, DEESIDE, Clwyd, CH5 2TW	Type of Site: Recycling Facility Planning application reference: 48307 Description: Scheme comprises importation, storage and processing of waste metal for manufacturing/casting of engines as part of engine manufacturing operations. An application (ref: 048307) for detailed planning permission was submitted to Flintshire C.C. A detailed planning application has been submitted. Data source: Historic Planning Application Data Type: Point	15/12/2011

This data is sourced from Ordnance Survey/Groundsure and Local Authority records.

3.6 Licensed waste sites

Records within 500m **11**

Active or recently closed waste sites under Environment Agency/Natural Resources Wales regulation.

Features are displayed on the Waste and landfill map on **page 29 >**

ID	Location	Details		
C	96m SE	Site Name: Alan's Skip Hire Ltd Site Address: Former Deeside Titanium Works, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: Deposit of waste to land as a recovery operation Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: ALA049 EPR reference: KB3433RY/A001 Operator: Alan's Skip Hire Ltd Waste Management licence No: 104616 Annual Tonnage: 0	Issue Date: 06/12/2012 Effective Date: - Modified: - Surrendered Date: 0 Expiry Date: 0 Cancelled Date: 0 Status: Issued
C	96m SE	Site Name: - Site Address: Alan's Skip Hire Ltd, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: Deposit of waste to land as a recovery operation Size: - Environmental Permitting Regulations (Waste) Licence Number: KB3433RY EPR reference: - Operator: Alan's Skip Hire Ltd Waste Management licence No: - Annual Tonnage: 116500	Issue Date: 06/12/2012 Effective Date: 06/12/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

ID	Location	Details		
C	96m SE	Site Name: - Site Address: Alan's Skip Hire Ltd, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: Deposit of waste to land as a recovery operation Size: - Environmental Permitting Regulations (Waste) Licence Number: KB3433RY EPR reference: - Operator: Alan's Skip Hire Ltd Waste Management licence No: - Annual Tonnage: 116500	Issue Date: 06/12/2012 Effective Date: 06/12/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
C	96m SE	Site Name: - Site Address: Alan's Skip Hire Ltd, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: KB3433RY EPR reference: - Operator: Alan's Skip Hire Ltd Waste Management licence No: 0 Annual Tonnage: 116500	Issue Date: 06/12/2012 Effective Date: 06/12/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
C	96m SE	Site Name: Alan's Skip Hire Ltd Site Address: Former Deeside Titanium Works, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: Deposit of waste to land as a recovery operation Size: 25000 tonnes Environmental Permitting Regulations (Waste) Licence Number: ALA049 EPR reference: EA/EPR/KB3433RY/A001 Operator: Alan's Skip Hire Ltd Waste Management licence No: 104616 Annual Tonnage: 116500	Issue Date: 06/12/2012 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Issued
C	96m SE	Site Name: - Site Address: Alan's Skip Hire Ltd, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: Deposit of waste to land as a recovery operation Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: KB3433RY EPR reference: - Operator: - Waste Management licence No: 104616 Annual Tonnage: 116500	Issue Date: 06/12/2012 Effective Date: 06/12/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

ID	Location	Details		
C	96m SE	Site Name: - Site Address: Alan's Skip Hire Ltd, Weighbridge Road, Flintshire, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: KB3433RY EPR reference: - Operator: Alan's Skip Hire Ltd Waste Management licence No: 104616 Annual Tonnage: 116500	Issue Date: 06/12/2012 Effective Date: 06/12/2012 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
D	111m SW	Site Name: Parc Adfer Enery Recovery Facility Site Address: WTI UK Ltd, Parc Adfer Enery Recovery Facility, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: AB3092CV EPR reference: - Operator: WTI UK Ltd Waste Management licence No: 0 Annual Tonnage: 0	Issue Date: 28/10/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
D	111m SW	Site Name: Parc Adfer Enery Recovery Facility Site Address: WTI UK Ltd, Parc Adfer Enery Recovery Facility, Weighbridge Road, Deeside, Flintshire, CH5 2LL Correspondence Address: -	Type of Site: - Size: Unknown Environmental Permitting Regulations (Waste) Licence Number: AB3092CV EPR reference: - Operator: WTI UK Ltd Waste Management licence No: 0 Annual Tonnage: 0	Issue Date: 28/10/2015 Effective Date: - Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
H	494m E	Site Name: - Site Address: AkzoNobel Packaging Coatings Ltd, Tenth Avenue, Deeside Industrial Park, Deeside, CH5 2UA Correspondence Address: -	Type of Site: - Size: - Environmental Permitting Regulations (Waste) Licence Number: PAN-014838 EPR reference: - Operator: Vertase F.LI. Ltd Waste Management licence No: - Annual Tonnage: 9000	Issue Date: 03/09/2021 Effective Date: 03/09/2021 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective
H	494m E	Site Name: - Site Address: AkzoNobel Packaging Coatings Ltd, Tenth Avenue, Deeside Industrial Park, Deeside, CH5 2UA Correspondence Address: -	Type of Site: - Size: - Environmental Permitting Regulations (Waste) Licence Number: PAN-009904 EPR reference: - Operator: VertaseFLI Ltd Waste Management licence No: - Annual Tonnage: 9000	Issue Date: 06/05/2020 Effective Date: 06/05/2020 Modified: - Surrendered Date: - Expiry Date: - Cancelled Date: - Status: Effective

This data is sourced from the Environment Agency and Natural Resources Wales.

3.7 Waste exemptions

Records within 500m	57

Activities involving the storage, treatment, use or disposal of waste that are exempt from needing a permit. Exemptions have specific limits and conditions that must be adhered to.

Features are displayed on the Waste and landfill map on **page 29 >**

ID	Location	Site	Reference	Category	Sub-Category	Description
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste in construction
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Treating waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Disposing of waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Burning waste in the open
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Disposing of waste exemption	On a farm	Deposit of agricultural waste consisting of plant tissue under a Plant Health notice
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Storing waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Storage of waste in secure containers
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Disposing of waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Deposit of waste from dredging of inland waters

ID	Location	Site	Reference	Category	Sub-Category	Description
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste for a specified purpose
A	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Zone 4 Deeside Industrial Estate, Deeside, Flintshire, CH5 2LL	NRW-WME054859	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Spreading waste on agricultural land to confer benefit
B	On site	Land Lying South of Weighbridge Road, Zone 4 Deeside Industrial Park, Deeside, CH5 2LL	WEX087283	Treating waste exemption	Not on a farm	Screening and blending of waste
B	On site	Land Lying South of Weighbridge Road, Zone 4 Deeside Industrial Park, Deeside, CH5 2LL	WEX087283	Using waste exemption	Not on a farm	Use of waste in construction
B	On site	Alan's Skip Hire Ltd, Alan's Skip Hire, Former Deeside Titanium Works, Weighbridge Road, Deeside, Flintshire, CH52LL	NRW-WME017790	Treating waste exemption	Not on a farm	Screening and blending of waste
B	On site	Landmarc Support Services Limited, Deeside, Neston, CH52LL	NRW-WME019560	Disposing of waste exemption	Not on a farm	Deposit of waste from dredging of inland waters
B	On site	Clugston Construction Ltd, Land Lying South of Weighbridge Road, Zone 4 Deeside Industrial Park, Deeside, CH52LL	NRW-WME021972	Treating waste exemption	Not on a farm	Screening and blending of waste
B	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL	NRW-WME025913	Using waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Use of waste in construction
B	On site	Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL	NRW-WME025913	Disposing of waste exemption	Waste Exemption - Agricultural and Non-Agricultural	Deposit of waste from dredging of inland waters

ID	Location	Site	Reference	Category	Sub-Category	Description
B	**On site**	**Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL**	**NRW-WME025913**	**Using waste exemption**	**Waste Exemption - Agricultural and Non-Agricultural**	**Spreading waste on agricultural land to confer benefit**
B	**On site**	**Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL**	**NRW-WME025913**	**Disposing of waste exemption**	**On a farm**	**Deposit of agricultural waste consisting of plant tissue under a Plant Health notice**
B	**On site**	**Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL**	**NRW-WME025913**	**Storing waste exemption**	**Waste Exemption - Agricultural and Non-Agricultural**	**Storage of waste in secure containers**
B	**On site**	**Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL**	**NRW-WME025913**	**Treating waste exemption**	**Waste Exemption - Agricultural and Non-Agricultural**	**Treatment of waste wood and waste plant matter by chipping, shredding, cutting or pulverising**
B	**On site**	**Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL**	**NRW-WME025913**	**Disposing of waste exemption**	**Waste Exemption - Agricultural and Non-Agricultural**	**Burning waste in the open**
B	**On site**	**Landmarc Support Solutions Ltd, Sealand Rifle Range, Waybridge Road, Deeside, Flintshire, CH52LL**	**NRW-WME025913**	**Using waste exemption**	**Waste Exemption - Agricultural and Non-Agricultural**	**Use of waste for a specified purpose**
E	397m SE	Freedom Group, Freedom Group, Delta House, Tenth Avenue, Deeside Industrial Park, Deeside, CH52UA	NRW-WME013220	Storing waste exemption	Not on a farm	Storage of waste in secure containers
E	397m SE	Freedom Group, Freedom Group, Delta House, Tenth Avenue, Deeside Industrial Park, Deeside, CH52UA	NRW-WME013220	Storing waste exemption	Not on a farm	Storage of waste in a secure place
E	397m SE	TI Automotive, T I Automotive, Tenth Avenue, Deeside, Flintshire, CH52UA	NRW-WME026202	Storing waste exemption	Not on a farm	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
E	397m SE	TI Automotive, T I Automotive, Tenth Avenue, Deeside, Flintshire, CH52UA	NRW-WME026202	Storing waste exemption	Not on a farm	Storage of waste in secure containers
F	420m SE	UNIT 108, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2UA	WEX076192	Storing waste exemption	Not on a farm	Storage of waste in a secure place
F	420m SE	UNIT 108, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2UA	WEX076192	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
G	476m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	NRW-WME045500	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
G	476m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	NRW-WME045500	Using waste exemption	Not on a farm	Spreading waste on non-agricultural land to confer benefit
G	476m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	NRW-WME045500	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
G	476m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	NRW-WME045500	Storing waste exemption	Not on a farm	Storage of waste in secure containers

ID	Location	Site	Reference	Category	Sub-Category	Description
G	476m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	NRW-WME045500	Using waste exemption	Not on a farm	Use of mulch
G	476m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	NRW-WME045500	Using waste exemption	Not on a farm	Use of waste in construction
G	476m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	NRW-WME045500	Storing waste exemption	Not on a farm	Storage of waste in a secure place
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Storing waste exemption	Not on a farm	Storage of waste in secure containers
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Storing waste exemption	Not on a farm	Storage of waste in a secure place
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Using waste exemption	Not on a farm	Use of waste in construction
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Using waste exemption	Not on a farm	Spreading waste on agricultural land to confer benefit
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Using waste exemption	Not on a farm	Spreading waste on non-agricultural land to confer benefit

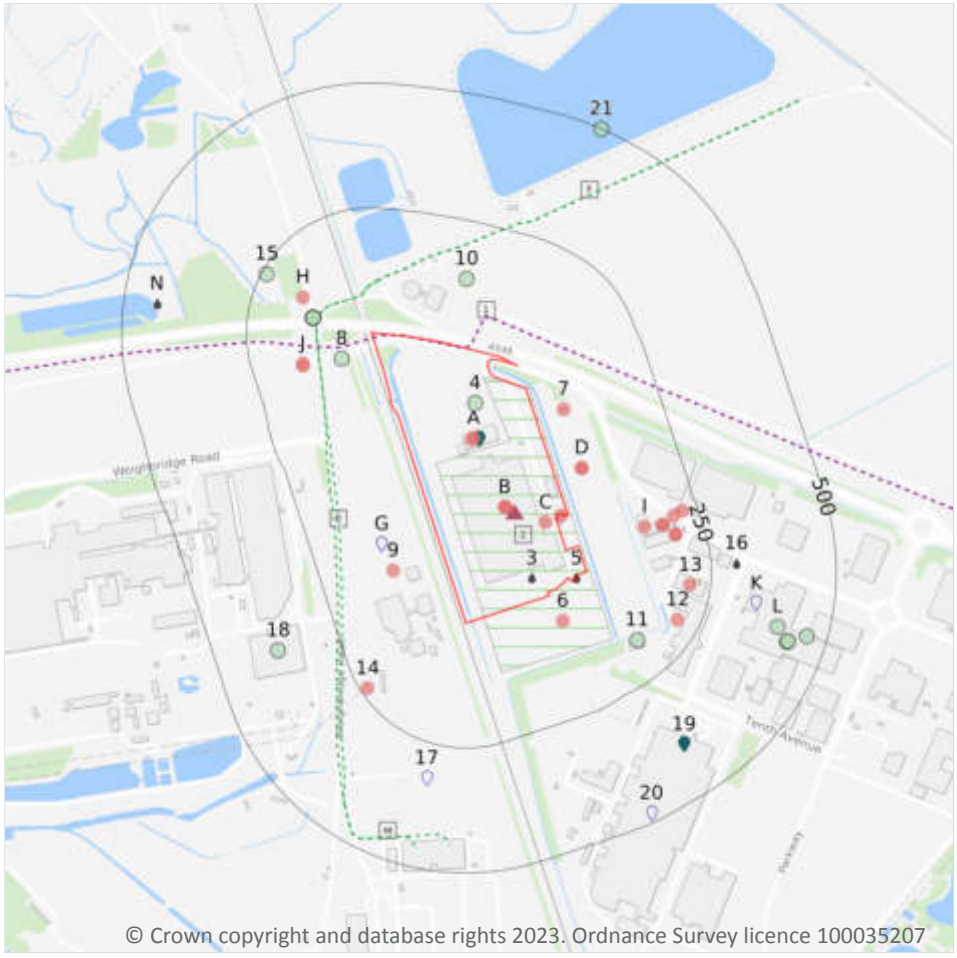
ID	Location	Site	Reference	Category	Sub-Category	Description
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Using waste exemption	Not on a farm	Use of mulch
G	477m SE	ZONE 3, TENTH AVENUE, DEESIDE INDUSTRIAL PARK, DEESIDE, CH5 2TW	WEX067759	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
G	477m SE	Green Metals UK Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, CH5 2TW	NRW-WME040898	Treating waste exemption	Not on a farm	Treatment of waste aerosol cans
G	477m SE	Green Metals UK Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, CH5 2TW	NRW-WME040898	Storing waste exemption	Not on a farm	Storage of waste in a secure place
G	477m SE	Green Metals UK Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, CH5 2TW	NRW-WME040898	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
G	477m SE	Green Metals UK Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME008688	Storing waste exemption	Not on a farm	Storage of waste in a secure place
G	477m SE	Green Metals UK Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME008688	Treating waste exemption	Not on a farm	Preparatory treatments (baling, sorting, shredding etc)
G	477m SE	Green Metals UK Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME008688	Treating waste exemption	Not on a farm	Treatment of waste aerosol cans
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Using waste exemption	Not on a farm	Use of mulch
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Storing waste exemption	Not on a farm	Storage of waste in a secure place

ID	Location	Site	Reference	Category	Sub-Category	Description
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Using waste exemption	Not on a farm	Use of waste in construction
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Storing waste exemption	Not on a farm	Storage of waste in secure containers
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Using waste exemption	Not on a farm	Spreading waste on non-agricultural land to confer benefit
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Using waste exemption	Not on a farm	Spreading waste on agricultural land to confer benefit
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Using waste exemption	Not on a farm	Spreading of plant matter to confer benefit
G	477m SE	Toyota Motor Manufacturing UK Ltd, Toyota Motor Manufacturing (UK) Ltd, Zone 3, Tenth Avenue, Deeside Industrial Park, Glannau Dyfrdwy, CH52TW	NRW-WME017466	Disposing of waste exemption	Not on a farm	Depositing samples of waste for the purposes of testing or analysing them

ID	Location	Site	Reference	Category	Sub-Category	Description
H	494m E	Vertase F.LI. Ltd, Akzonobel Packaging and Coatings Ltd., Tenth Avenue, Deeside Industrial Park, CH5 2UA, Deeside, Deeside, CH5 2UA	NRW-WME052219	Using waste exemption	Not on a farm	Use of waste in construction

This data is sourced from the Environment Agency and Natural Resources Wales.

4 Current industrial land use



Site Outline

Search buffers in metres (m)

Recent industrial land uses

Electricity cables

Gas pipelines

Control of Major Accident Hazards

Hazardous substance storage/usage

Part A(1) industrial activities

Licensed pollutant release (Part A(2)/B)

Licensed Discharges to controlled waters

Pollution Incidents (EA/NRW)

4.1 Recent industrial land uses

Records within 250m	25

Current potentially contaminative industrial sites.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Company	Address	Activity	Category
A	**On site**	**Commercial Colours**	**Zone 3 Link 56, Weighbridge Road, Deeside Industrial Park, Deeside, Clwyd, CH5 2LL**	**Industrial Coatings and Finishings**	**Industrial Products**
A	**On site**	**Mavic Commercial Vehicle Solutions Ltd**	**-, Weighbridge Road, Sealand, Clwyd, CH5 2LL**	**New Vehicles**	**Motoring**

ID	Location	Company	Address	Activity	Category
B	**On site**	**K K Fine Foods**	**Deeside Industrial Park, Weighbridge Road, Sealand, Clwyd, CH5 2UA**	**Catering and Non Specific Food Products**	**Foodstuffs**
B	**On site**	**Office Envy**	**Deeside Industrial Park, Weighbridge Road, Sealand, Clwyd, CH5 2UA**	**Office and Shop Equipment**	**Industrial Products**
B	**On site**	**Deeside Engineering Ltd**	**Deeside Industrial Park, Weighbridge Road, Sealand, Clwyd, CH5 2UA**	**Industrial Engineers**	**Engineering Services**
C	**On site**	**Electricity Sub Station**	**Clwyd, CH5**	**Electrical Features**	**Infrastructure and Facilities**
C	3m SE	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
D	56m E	T I Group Automotive Systems Deeside Ltd	Deeside Industrial Park, Weighbridge Road, Sealand, Clwyd, CH5 2LL	Vehicle Components	Industrial Products
D	56m E	News Quest	Deeside Industrial Park, Weighbridge Road, Sealand, Clwyd, CH5 2LL	Published Goods	Industrial Products
6	57m SE	Workings	Clwyd, CH5	Unspecified Quarries Or Mines	Extractive Industries
7	59m NE	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
9	106m SW	Parc Adfer EfW - EfW Incineration (BEIS)	Shotton Works, Deeside Industrial Park, Deeside, -, Clwyd, CH5 2NH	Energy Production	Industrial Features
I	138m E	Collister Glover	1a, Tenth Avenue, Sealand, Clwyd, CH5 2UA	General Construction Supplies	Industrial Products
J	150m NW	Sewage Pumping Station	Clwyd, CH5	Waste Storage, Processing and Disposal	Infrastructure and Facilities
J	151m NW	Pumping Station	Clwyd, CH5	Water Pumping Stations	Industrial Features
H	155m NW	Electricity Sub Station	Clwyd, CH64	Electrical Features	Infrastructure and Facilities
I	173m E	The Arena Group	The Smart Centre 2b, Tenth Avenue, Sealand, Clwyd, CH5 2UA	Office and Shop Equipment	Industrial Products
I	175m E	Hood Seating Ltd	The Smart Centre 2b, Tenth Avenue, Sealand, Clwyd, CH5 2UA	Office and Shop Equipment	Industrial Products

ID	Location	Company	Address	Activity	Category
I	192m E	D A C S Ltd	Unit C5, Tenth Avenue, Sealand, Clwyd, CH5 2UA	Industrial Engineers	Engineering Services
I	192m E	Stephan UK	Unit C5, Tenth Avenue, Sealand, Clwyd, CH5 2UA	Food and Beverage Industry Machinery	Industrial Products
I	201m E	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
12	206m SE	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
13	209m SE	Techtron	Unit F1-F2, Tenth Avenue, Sealand, Clwyd, CH5 2UA	Packaging	Industrial Products
I	220m E	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities
14	236m SW	Electricity Sub Station	Clwyd, CH5	Electrical Features	Infrastructure and Facilities

This data is sourced from Ordnance Survey.

4.2 Current or recent petrol stations

Records within 500m	**0**

Open, closed, under development and obsolete petrol stations.

This data is sourced from Experian.

4.3 Electricity cables

Records within 500m	**6**

High voltage underground electricity transmission cables.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Cable Set	Cable Route	Details	
E	76m NW	-	600KV DC LAND CABLE 2 SECT 30	Cable Make: - Cable Type: - Operating Voltage (kV): 400	Year of installation: Not specified Cable in tunnel? Not specified
E	77m NW	-	600KV DC LAND CABLE 1 SECT 30	Cable Make: - Cable Type: - Operating Voltage (kV): 400	Year of installation: Not specified Cable in tunnel? Not specified

ID	Location	Cable Set	Cable Route	Details	
F	103m NW	-	600KV DC LAND CABLE 2 SECT 29	Cable Make: - Cable Type: - Operating Voltage (kV): 400	Year of installation: Not specified Cable in tunnel? Not specified
F	104m NW	-	600KV DC LAND CABLE 1 SECT 29	Cable Make: - Cable Type: - Operating Voltage (kV): 400	Year of installation: Not specified Cable in tunnel? Not specified
M	426m S	-	600KV DC SUBMARINE CABLE 2 SECT 31	Cable Make: - Cable Type: - Operating Voltage (kV): 400	Year of installation: Not specified Cable in tunnel? Not specified
M	437m S	600KV DC SUBMARINE CABLE 1 SECT 31	FLINTSHIRE BRIDGE - HUNTERSTON 1 HVDC	Cable Make: - Cable Type: - Operating Voltage (kV): 0	Year of installation: Not specified Cable in tunnel? Not specified

This data is sourced from National Grid.

4.4 Gas pipelines

Records within 500m	**1**

High pressure underground gas transmission pipelines.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Pipe Name	Details	
1	**On site**	**MICKLE TRAFFORD TO DEESIDE**	**Pipe Number: -** **Pipeline Safety Regulations Number: -** **Ownership: National Grid** **Maximum Operating Pressure (Bar): -**	**Pipeline Diameter (mm): 750** **Wall Thickness (mm): -** **Year of commission: Not specified** **Abandonment Status: Not abandoned**

This data is sourced from National Grid.

4.5 Sites determined as Contaminated Land

Records within 500m	**0**

Contaminated Land Register of sites designated under Part 2a of the Environmental Protection Act 1990.

This data is sourced from Local Authority records.

4.6 Control of Major Accident Hazards (COMAH)

Records within 500m	1

Control of Major Accident Hazards (COMAH) sites. This data includes upper and lower tier sites, and includes a historical archive of COMAH sites and Notification of Installations Handling Hazardous Substances (NIHHS) records.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Company	Address	Operational status	Tier
2	**On site**	**Great Bear Distribution Limited**	**Great Bear Distribution Limited, Flintshire, Deeside Industrial Park, Zone 3, Weighbridge Road, Flintshire, Clwyd, CH5 2LL**	**Current COMAH Site**	**COMAH Upper Tier Operator**

This data is sourced from the Health and Safety Executive.

4.7 Regulated explosive sites

Records within 500m	0

Sites registered and licensed by the Health and Safety Executive under the Manufacture and Storage of Explosives Regulations 2005 (MSER). The last update to this data was in April 2011.

This data is sourced from the Health and Safety Executive.

4.8 Hazardous substance storage/usage

Records within 500m	1

Consents granted for a site to hold certain quantities of hazardous substances at or above defined limits in accordance with the Planning (Hazardous Substances) Regulations 2015.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Details	
B	**On site**	**Application reference number: 50527** **Application status: Approved** **Application date: 28/03/2013** **Address: Great Bear Distribution, Deeside Industrial Park, Zone 3, Weighbridge Road, Flintshire, Wales, CH5 2LL**	**Details: No Details** **Enforcement: No Enforcement Notified** **Date of enforcement: No Enforcement Notified** **Comment: No Enforcement Notified**

This data is sourced from Local Authority records.

4.9 Historical licensed industrial activities (IPC)

Records within 500m	0

Integrated Pollution Control (IPC) records of substance releases to air, land and water. This data represents a historical archive as the IPC regime has been superseded.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.10 Licensed industrial activities (Part A(1))

Records within 500m	13

Records of Part A(1) installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Details	
G	111m SW	Operator: Enfinium Parc Adfer Operations Ltd Installation Name: Parc Adfer Energy Recovery Facility Process: RECOVERY OR A MIX OF RECOVERY AND DISPOSAL OF NON-HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 75 TONNES PER DAY (OR 100 TONNES PER DAY IF THE ONLY WASTE TREATMENT ACTIVITY IS ANAEROBIC DIGESTION) INVOLVING ONE OR MORE OF THE FOLLOWING ACTIVITIES, AND EXCLUDING ACTIVITIES COVERED BY COUNCIL DIRECTIVE 91/271/EEC—TREATMENT OF SLAGS AND ASHES Permit Number: AB3092CV Original Permit Number: -	EPR Reference: - Issue Date: 19/12/2022 Effective Date: 19/12/2022 Last date noted as effective: 25/05/2023 Status: Effective
G	111m SW	Operator: Enfinium Parc Adfer Operations Ltd Installation Name: Parc Adfer Energy Recovery Facility Process: THE INCINERATION OF NON-HAZARDOUS WASTE IN A WASTE INCINERATION PLANT OR WASTE CO-INCINERATION PLANT WITH A CAPACITY EXCEEDING 3 TONNES PER HOUR Permit Number: AB3092CV Original Permit Number: -	EPR Reference: - Issue Date: 19/12/2022 Effective Date: 19/12/2022 Last date noted as effective: 25/05/2023 Status: Effective
G	111m SW	Operator: WTI UK LTD Installation Name: PARC ADFER ENERY RECOVERY FACILITY Process: - Permit Number: AB3092CV Original Permit Number: -	EPR Reference: - Issue Date: 28/10/2015 Effective Date: 28/10/2015 Last date noted as effective: 01/04/2017 Status: ISSUED

ID	Location	Details	
G	111m SW	Operator: PARC ADFER OPERATIONS LTD Installation Name: PARC ADFER ENERY RECOVERY FACILITY Process: - Permit Number: AB3092CV Original Permit Number: -	EPR Reference: - Issue Date: 08/06/2017 Effective Date: 08/06/2017 Last date noted as effective: 01/04/2018 Status: EFFECTIVE
G	111m SW	Operator: PARC ADFER OPERATIONS LTD Installation Name: PARC ADFER ENERY RECOVERY FACILITY Process: - Permit Number: AB3092CV Original Permit Number: -	EPR Reference: - Issue Date: 08/06/2017 Effective Date: 08/06/2017 Last date noted as effective: 01/04/2018 Status: EFFECTIVE
17	320m S	Operator: GAZ DE FRANCE MARKETING LIMITED Installation Name: DEESIDE PAPERMILL Process: COMBUSTION; ANY FUEL =>50MW Permit Number: BV8644IG Original Permit Number: BV8644IG	EPR Reference: - Issue Date: 22/10/2003 Effective Date: 22/10/2003 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
K	345m SE	Operator: Farmers Boy (Deeside) Ltd Installation Name: Farmers Boy (Deeside) Ltd Process: DISPOSAL OF NON-HAZARDOUS WASTE WITH A CAPACITY EXCEEDING 50 TONNES PER DAY (OR 100 TONNES PER DAY IF THE ONLY WASTE TREATMENT ACTIVITY IS ANAEROBIC DIGESTION) INVOLVING ONE OR MORE OF THE FOLLOWING ACTIVITIES, AND EXCLUDING ACTIVITIES COVERED BY COUNCIL DIRECTIVE 91/271/EEC CONCERNING URBAN WASTE-WATER TREATMENT(4)—PHYSICO-CHEMICAL TREATMENT Permit Number: VP3235HS Original Permit Number: -	EPR Reference: - Issue Date: 24/03/2023 Effective Date: 24/03/2023 Last date noted as effective: 25/05/2023 Status: Effective
K	345m SE	Operator: Farmers Boy (Deeside) Ltd Installation Name: Farmers Boy (Deeside) Ltd Process: TREATMENT AND PROCESSING, OTHER THAN EXCLUSIVELY PACKAGING, OF THE FOLLOWING RAW MATERIALS, WHETHER PREVIOUSLY PROCESSED OR UNPROCESSED, INTENDED FOR THE PRODUCTION OF FOOD OR FEED (WHERE THE WEIGHT OF THE FINISHED PRODUCT EXCLUDES PACKAGING)—ONLY ANIMAL RAW MATERIALS (OTHER THAN MILK ONLY) WITH A FINISHED PRODUCT PRODUCTION CAPACITY GREATER THAN 75 TONNES PER DAY Permit Number: VP3235HS Original Permit Number: -	EPR Reference: - Issue Date: 24/03/2023 Effective Date: 24/03/2023 Last date noted as effective: 25/05/2023 Status: Effective

ID	Location	Details	
K	345m SE	Operator: FARMERS BOY (DEESIDE) LTD Installation Name: DEESIDE MEAT PROCESSING EPR/VP3235HS Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC ANIMAL RAW MATERIALS (NOT MILK) FOR FOOD >75T/D Permit Number: MP3732VF Original Permit Number: VP3235HS	EPR Reference: - Issue Date: 04/11/2014 Effective Date: 04/11/2014 Last date noted as effective: 17/11/2015 Status: EFFECTIVE
K	345m SE	Operator: FARMERS BOY (DEESIDE) LTD Installation Name: FARMERS BOY (DEESIDE) LTD Process: ANIMAL VEGETABLE AND FOOD; TREATING ETC ANIMAL RAW MATERIALS (NOT MILK) FOR FOOD >75T/D Permit Number: VP3235HS Original Permit Number: VP3235HS	EPR Reference: - Issue Date: 18/01/2012 Effective Date: 18/01/2012 Last date noted as effective: 17/11/2015 Status: SUPERCEDED
K	345m SE	Operator: FARMERS BOY (DEESIDE) LTD Installation Name: FARMERS BOY (DEESIDE) LTD Process: - Permit Number: VP3235HS Original Permit Number: -	EPR Reference: - Issue Date: 28/08/2015 Effective Date: 28/08/2015 Last date noted as effective: 01/04/2017 Status: ISSUED
K	345m SE	Operator: FARMERS BOY (DEESIDE) LTD Installation Name: FARMERS BOY (DEESIDE) LTD Process: TREATMENT AND PROCESSING, OTHER THAN EXCLUSIVELY PACKAGING, OF THE FOLLOWING RAW... Permit Number: VP3235HS Original Permit Number: MP3732VF	EPR Reference: - Issue Date: 28/08/2015 Effective Date: 28/08/2015 Last date noted as effective: 01/04/2018 Status: EFFECTIVE
20	481m SE	Operator: TOYOTA MOTOR MANUFACTURING UK LTD Installation Name: DEESIDE ENGINE CASTING PLANT Process: NON-FERROUS METALS; MELTING WITH CAPACITY >4T/D LEAD/CADMIUM OR 20T/D OTHERS Permit Number: BK6483IU Original Permit Number: BK6483IU	EPR Reference: - Issue Date: 20/12/2002 Effective Date: 20/12/2002 Last date noted as effective: 17/11/2015 Status: SUPERCEDED

This data is sourced from the Environment Agency and Natural Resources Wales.

4.11 Licensed pollutant release (Part A(2)/B)

Records within 500m	**2**

Records of Part A(2) and Part B installations regulated under the Environmental Permitting (England and Wales) Regulations 2016 for the release of substances to the environment.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Address	Details	
A	**On site**	**Commercial Colours, Zone 3, Weighbridge Road, Deeside Industrial Park, Flintshire, CH5 2LL**	**Process: Respraying of Road Vehicles** **Status: Current Permit** **Permit Type: Part B**	**Enforcement: No Enforcement Notified** **Date of enforcement: No Enforcement Notified** **Comment: No Enforcement Notified**
19	393m SE	Toyota Manufacturing UK, Zone 3, Deeside Industrial Park, Deeside, Flintshire, CH5 2TW	Process: Engineering Works Status: Current Permit Permit Type: Part B	Enforcement: No Enforcement Notified Date of enforcement: No Enforcement Notified Comment: No Enforcement Notified

This data is sourced from Local Authority records.

4.12 Radioactive Substance Authorisations

Records within 500m	**0**

Records of the storage, use, accumulation and disposal of radioactive substances regulated under the Radioactive Substances Act 1993.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.13 Licensed Discharges to controlled waters

Records within 500m	**5**

Discharges of treated or untreated effluent to controlled waters under the Water Resources Act 1991.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Address	Details	
3	**On site**	**DEESIDE TITANIUM LTD WEIGHBRIDGE RO, DEESIDE TITANIUM LTD WEIGHBRIDGE, WEIGHBRIDGE ROAD DEESIDE, DEESIDE**	**Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY** **Permit Number: CM0093801** **Permit Version: 1** **Receiving Water: UN-NAMED TRIB. OF FINGERPOST D**	**Status: REVOKED - UNSPECIFIED** **Issue date: 14/10/1982** **Effective Date: 14/10/1982** **Revocation Date: 30/08/1993**
5	**On site**	**DEESIDE TITANIUM LTD WEIGHBRIDGE RO, DEESIDE TITANIUM LTD WEIGHBRIDGE, WEIGHBRIDGE ROAD DEESIDE, DEESIDE**	**Effluent Type: SEWAGE DISCHARGES - FINAL/TREATED EFFLUENT - NOT WATER COMPANY** **Permit Number: CM0093801** **Permit Version: 2** **Receiving Water: UN-NAMED TRIB. OF FINGERPOST D**	**Status: CONSENT EXPIRED - TIME LIMIT** **Issue date: 31/08/1993** **Effective Date: 31/08/1993** **Revocation Date: 03/05/1994**

ID	Location	Address	Details	
16	300m E	PS 2 (PHASE 2) DEESIDE INDUSTRIAL P, PS 2 (PHASE 2) DEESIDE INDUSTRIA, DEESIDE INDUSTRIAL PARK	Effluent Type: SEWAGE DISCHARGES - SEWER STORM OVERFLOW - NOT WATER COMPANY Permit Number: CG0367001 Permit Version: 0 Receiving Water: SHOTWICK BROOK	Status: Effective Issue date: 12/03/1996 Effective Date: 12/03/1996 Revocation Date: -
N	433m NW	DEESIDE TITANIUM LTD. DEESIDE	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CM0092901 Permit Version: 1 Receiving Water: SURFACE WATER LAGOON TO ESTUAR	Status: REVOKED - UNSPECIFIED Issue date: 23/02/1982 Effective Date: 23/02/1982 Revocation Date: 26/08/1993
N	433m NW	DEESIDE TITANIUM LTD. DEESIDE	Effluent Type: TRADE DISCHARGES - UNSPECIFIED Permit Number: CM0092901 Permit Version: 2 Receiving Water: SURFACE WATER LAGOON TO ESTUAR	Status: CONSENT EXPIRED - TIME LIMIT Issue date: 27/08/1993 Effective Date: 27/08/1993 Revocation Date: 03/05/1994

This data is sourced from the Environment Agency and Natural Resources Wales.

4.14 Pollutant release to surface waters (Red List)

Records within 500m	**0**

Discharges of specified substances under the Environmental Protection (Prescribed Processes and Substances) Regulations 1991.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.15 Pollutant release to public sewer

Records within 500m	**0**

Discharges of Special Category Effluents to the public sewer.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.16 List 1 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List I of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.17 List 2 Dangerous Substances

Records within 500m	0

Discharges of substances identified on List II of European Directive E 2006/11/EC, and regulated under the Environmental Damage (Prevention and Remediation) Regulations 2015.

This data is sourced from the Environment Agency and Natural Resources Wales.

4.18 Pollution Incidents (EA/NRW)

Records within 500m	16

Records of substantiated pollution incidents. Since 2006 this data has only included category 1 (major) and 2 (significant) pollution incidents.

Features are displayed on the Current industrial land use map on **page 42 >**

ID	Location	Details	
4	**On site**	**Incident Date: 10/05/2013** **Incident Identification: 1111593** **Pollutant: Multiple Pollutants** **Pollutant Description: 2 Pollutants Including Smoke**	**Water Impact: -** **Land Impact: Category 4 (No Impact)** **Air Impact: Category 3 (Minor)**
8	72m NW	Incident Date: 25/10/2001 Incident Identification: 38959 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 3 (Minor)
H	121m NW	Incident Date: 25/07/2003 Incident Identification: 176581 Pollutant: Specific Waste Materials:Specific Waste Materials Pollutant Description: Asbestos:Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
H	121m NW	Incident Date: 25/07/2003 Incident Identification: 176581 Pollutant: Specific Waste Materials Pollutant Description: Asbestos :Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)

ID	Location	Details	
H	121m NW	Incident Date: 25/07/2003 Incident Identification: 176581 Pollutant: Specific Waste Materials Pollutant Description: Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
H	121m NW	Incident Date: 25/07/2003 Incident Identification: 176581 Pollutant: Specific Waste Materials Pollutant Description: Asbestos	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
H	121m NW	Incident Date: 25/07/2003 Incident Identification: 176581 Pollutant: Specific Waste Materials Pollutant Description: Asbestos Commercial Waste	Water Impact: Category 4 (No Impact) Land Impact: Category 2 (Significant) Air Impact: Category 4 (No Impact)
10	135m N	Incident Date: 02/01/2002 Incident Identification: 50197 Pollutant: Inert Materials and Wastes Pollutant Description: Construction and Demolition Materials and Wastes	Water Impact: Category 4 (No Impact) Land Impact: Category 3 (Minor) Air Impact: Category 4 (No Impact)
11	169m SE	Incident Date: 28/05/2019 Incident Identification: 1903415 Pollutant: General Biodegradable Materials and Waste Pollutant Description: Animal and Vegetable Oil	Water Impact: Category 2 (Significant) Land Impact: No Details Air Impact: No Details
15	240m NW	Incident Date: 16/11/2002 Incident Identification: 121196 Pollutant: General Biodegradable Materials and Wastes Pollutant Description: Natural Organic Material	Water Impact: Category 4 (No Impact) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
18	374m SW	Incident Date: 13/07/2013 Incident Identification: 1132738 Pollutant: Contaminated Water Pollutant Description: Firefighting Run-Off	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	396m SE	Incident Date: 25/02/2016 Incident Identification: 1413813 Pollutant: Atmospheric Pollutants and Effects Pollutant Description: Smoke	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)
L	425m SE	Incident Date: 27/06/2013 Incident Identification: 1126422 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
L	426m SE	Incident Date: 11/06/2013 Incident Identification: 1121201 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)

ID	Location	Details	
L	458m SE	Incident Date: 04/06/2013 Incident Identification: 1118720 Pollutant: Contaminated Water Pollutant Description: Other Contaminated Water	Water Impact: - Land Impact: Category 4 (No Impact) Air Impact: Category 3 (Minor)
21	499m N	Incident Date: 29/06/2003 Incident Identification: 169671 Pollutant: Other Pollutant Pollutant Description: Other	Water Impact: Category 3 (Minor) Land Impact: Category 4 (No Impact) Air Impact: Category 4 (No Impact)

This data is sourced from the Environment Agency and Natural Resources Wales.

4.19 Pollution inventory substances

Records within 500m	0

The pollution inventory (substances) includes reporting on annual emissions of certain regulated substances to air, controlled waters and land. A reporting threshold for each substance is also included. Where emissions fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

4.20 Pollution inventory waste transfers

Records within 500m	0

The pollution inventory (waste transfers) includes reporting on annual transfers and recovery/disposal of controlled wastes from a site. A reporting threshold for each waste type is also included. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

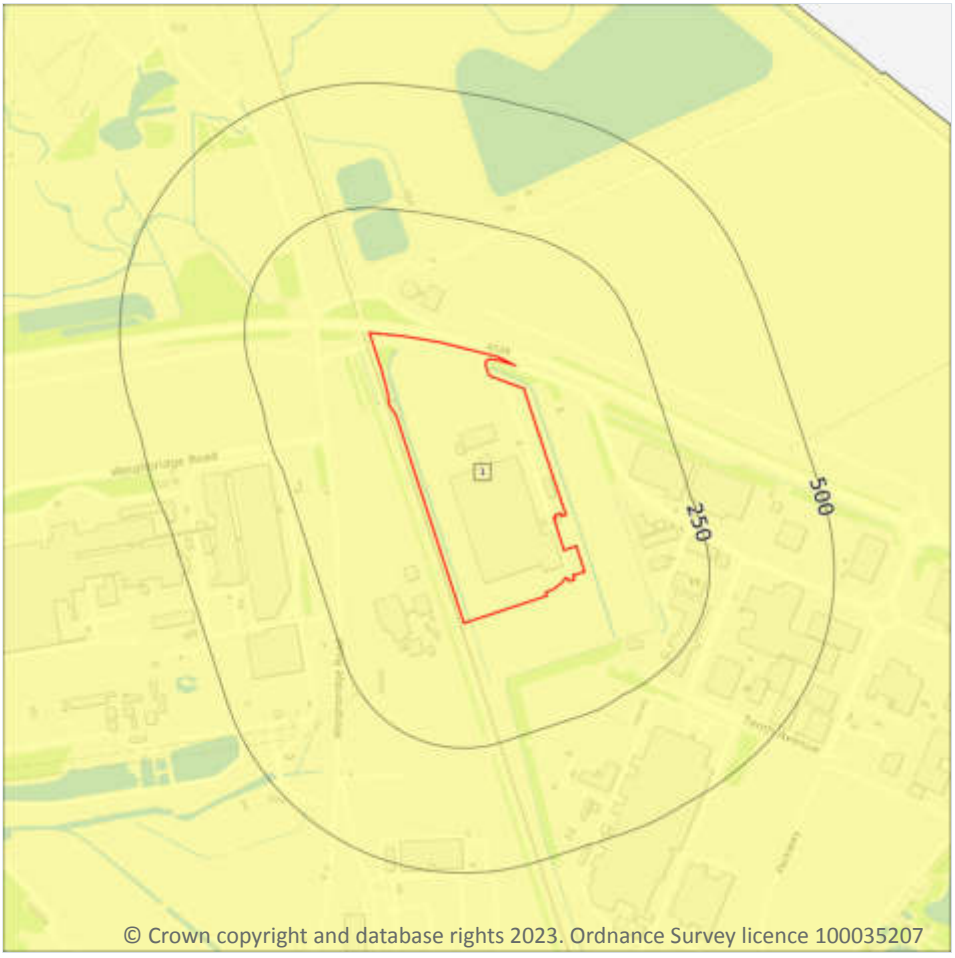
4.21 Pollution inventory radioactive waste

Records within 500m	0

The pollution inventory (radioactive wastes) includes reporting on annual releases of radioactive substances from a site, including the means of release. Where releases fall below the reporting threshold, no value will be given. The data is given for the most recent complete year available.

This data is sourced from the Environment Agency and the Scottish Environment Protection Agency.

5 Hydrogeology - Superficial aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive
- Unknown

5.1 Superficial aquifer

Records within 500m	1

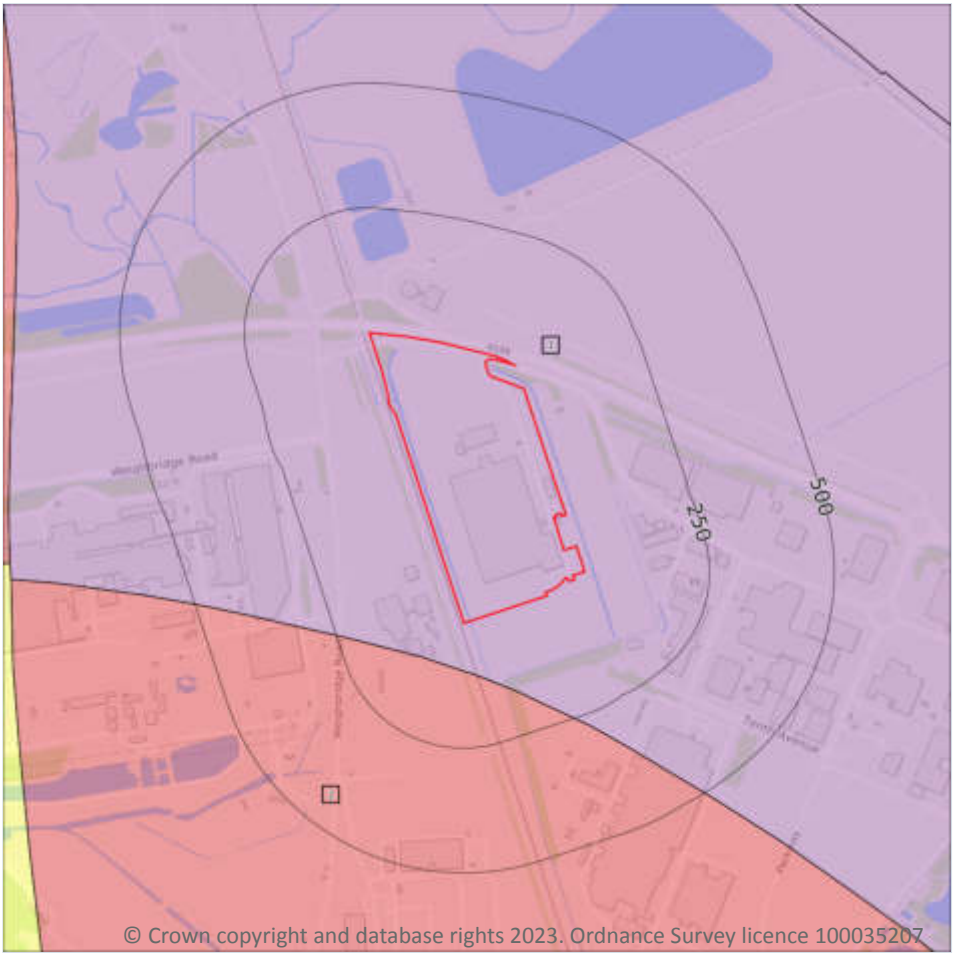
Aquifer status of groundwater held within superficial geology.

Features are displayed on the Hydrogeology map on **page 55 >**

ID	Location	Designation	Description
1	**On site**	**Secondary Undifferentiated**	**Assigned where it is not possible to attribute either category A or B to a rock type. In general these layers have previously been designated as both minor and non-aquifer in different locations due to the variable characteristics of the rock type**

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Bedrock aquifer



Site Outline

Search buffers in metres (m)

- Principal
- Secondary A
- Secondary B
- Secondary Undifferentiated
- Unproductive

5.2 Bedrock aquifer

Records within 500m	2

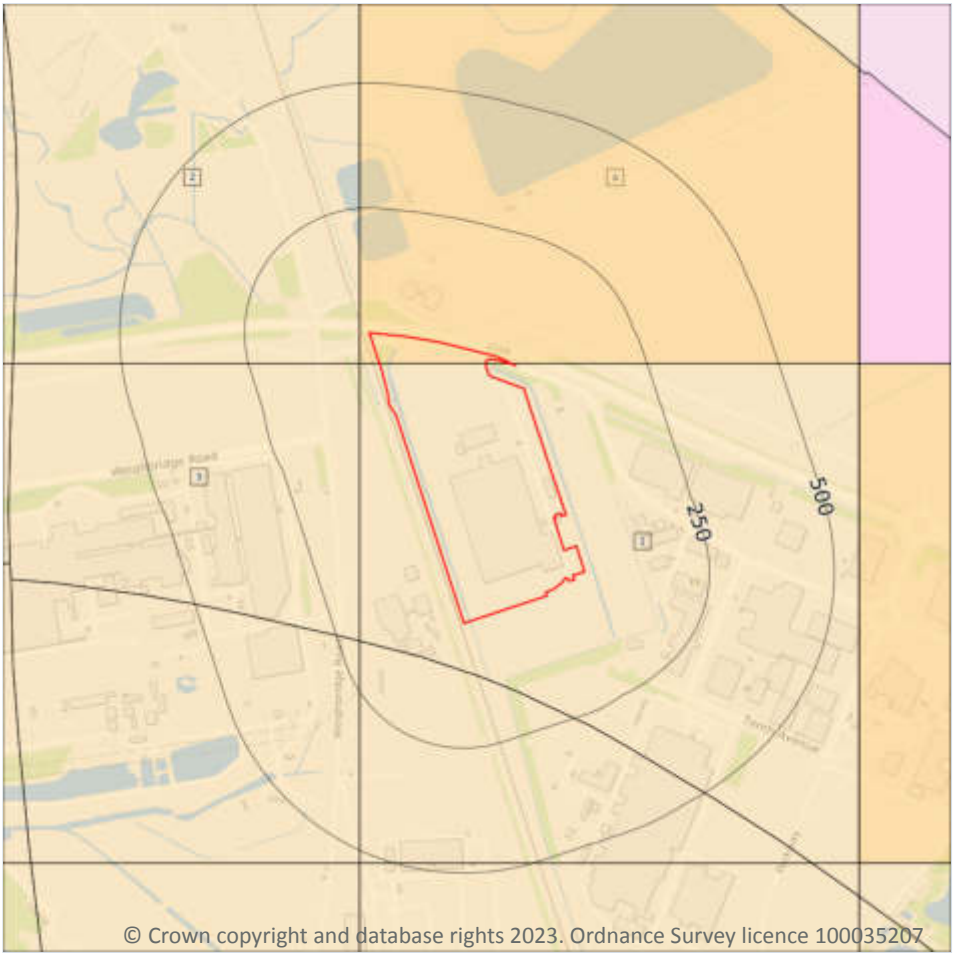
Aquifer status of groundwater held within bedrock geology.

Features are displayed on the Bedrock aquifer map on **page 56 >**

ID	Location	Designation	Description
1	**On site**	**Principal**	**Geology of high intergranular and/or fracture permeability, usually providing a high level of water storage and may support water supply/river base flow on a strategic scale. Generally principal aquifers were previously major aquifers**
2	91m S	Secondary A	Permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

Groundwater vulnerability



Site Outline

Search buffers in metres (m)

Superficial vulnerability

- Principal superficial aquifer, high vulnerability
- Secondary superficial aquifer, high vulnerability
- Principal superficial aquifer, medium vulnerability
- Secondary superficial aquifer, medium vulnerability
- Principal superficial aquifer, low vulnerability
- Secondary superficial aquifer, low vulnerability

Bedrock vulnerability

- Principal bedrock aquifer, high vulnerability
- Secondary bedrock aquifer, high vulnerability
- Principal bedrock aquifer, medium vulnerability
- Secondary bedrock aquifer, medium vulnerability
- Principal bedrock aquifer, low vulnerability
- Secondary bedrock aquifer, low vulnerability

Other information

- Unproductive aquifer
- Soluble rock risk
- Local information

5.3 Groundwater vulnerability

Records within 50m	5

An assessment of the vulnerability of groundwater to a pollutant discharged at ground level based on the hydrological, geological, hydrogeological and soil properties within a one kilometre square grid. Groundwater vulnerability is described as High, Medium or Low as follows:

- High - Areas able to easily transmit pollution to groundwater. They are likely to be characterised by high leaching soils and the absence of low permeability superficial deposits.
- Medium - Intermediate between high and low vulnerability.
- Low - Areas that provide the greatest protection from pollution. They are likely to be characterised by low leaching soils and/or the presence of superficial deposits characterised by a low permeability.

Features are displayed on the Groundwater vulnerability map on **page 58 >**

ID	Location	Summary	Soil / surface	Superficial geology	Bedrock geology
1	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures**
A	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Intergranular**
A	**On site**	**Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer**	**Leaching class: High Infiltration value: >70% Dilution value: <300mm/year**	**Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low**	**Vulnerability: Low Aquifer type: Principal Flow mechanism: Intergranular**
2	19m NW	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: Low	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures
3	37m NW	Summary Classification: Secondary superficial aquifer - High Vulnerability Combined classification: Productive Bedrock Aquifer, Productive Superficial Aquifer	Leaching class: High Infiltration value: >70% Dilution value: 300-550mm/year	Vulnerability: High Aquifer type: Secondary Thickness: >10m Patchiness value: >90% Recharge potential: High	Vulnerability: Low Aquifer type: Principal Flow mechanism: Well connected fractures

This data is sourced from the British Geological Survey, the Environment Agency and Natural Resources Wales.

5.4 Groundwater vulnerability- soluble rock risk

Records on site	**0**

This dataset identifies areas where solution features that enable rapid movement of a pollutant may be present within a 1km grid square.

This data is sourced from the British Geological Survey and the Environment Agency.

5.5 Groundwater vulnerability- local information

Records on site	0

This dataset identifies areas where additional local information affecting vulnerability is held by the Environment Agency. Further information can be obtained by contacting the Environment Agency local Area groundwater team through the Environment Agency National Customer Call Centre on 03798 506 506 or by email on enquiries@environment-agency.gov.uk ↗.

This data is sourced from the British Geological Survey and the Environment Agency.

Abstractions and Source Protection Zones

Site Outline

Search buffers in metres (m)

- 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
- Source Protection Zone 1c — Inner catchment - confined aquifer
- Source Protection Zone 2c — Outer catchment - confined aquifer
- Source Protection Zone 3c — Total catchment - confined aquifer
- Drinking water abstraction licences
- Drinking water abstraction licences — Polygon features
- Drinking water abstraction licences — Linear features
- Groundwater abstraction licence (point)
- Groundwater abstraction licence (area)
- Groundwater abstraction licence (linear)
- Surface Water Abstractions (point)
- Surface Water Abstractions (area)
- Surface Water Abstractions (linear)

5.6 Groundwater abstractions

Records within 2000m	7

Licensed groundwater abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, between two points (line data) or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 61 >**

ID	Location	Details	
2	475m E	Status: Historical Licence No: WA/067/0010/0015 Details: Pollution Remediation - Very Low Direct Source: Deeside Industrial Estate Point: - Data Type: Poly4 Name: - Easting: 331947 Northing: 371621	Annual Volume (m^3): 7500 Max Daily Volume (m^3): - Original Application No: - Original Start Date: Feb 3 2020 12:00AM Expiry Date: Mar 31 2027 12:00AM Issue No: - Version Start Date: - Version End Date: -
A	870m NE	Status: Historical Licence No: 24/67/10/0090 Details: Process Water Direct Source: EAW Groundwater Point: BOREHOLE 7 Data Type: Point Name: Tata Steel UK Limited Easting: 331980 Northing: 372551	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 6000 Original Application No: - Original Start Date: 27/11/1980 Expiry Date: - Issue No: 104 Version Start Date: 18/03/2015 Version End Date: -
A	870m NE	Status: Active Licence No: 24/67/10/0090 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 331980 Northing: 372551	Annual Volume (m^3): 500000 Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/2015 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -
A	901m NE	Status: Historical Licence No: 24/67/10/0090 Details: Process Water Direct Source: EAW Groundwater Point: BOREHOLE 7A Data Type: Point Name: Tata Steel UK Limited Easting: 332020 Northing: 372551	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 6000 Original Application No: - Original Start Date: 27/11/1980 Expiry Date: - Issue No: 104 Version Start Date: 18/03/2015 Version End Date: -
A	901m NE	Status: Active Licence No: 24/67/10/0090 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 332020 Northing: 372551	Annual Volume (m^3): 500000 Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/2015 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

ID	Location	Details	
-	1502m E	Status: Historical Licence No: 24/67/10/0090 Details: Process Water Direct Source: EAW Groundwater Point: BOREHOLE 4 Data Type: Point Name: Tata Steel UK Limited Easting: 332940 Northing: 371780	Annual Volume (m^3): 500000 Max Daily Volume (m^3): 6000 Original Application No: - Original Start Date: 27/11/1980 Expiry Date: - Issue No: 104 Version Start Date: 18/03/2015 Version End Date: -
-	1502m E	Status: Active Licence No: 24/67/10/0090 Details: Process Water - Medium Direct Source: - Point: - Data Type: Point Name: - Easting: 332940 Northing: 371780	Annual Volume (m^3): 500000 Max Daily Volume (m^3): - Original Application No: - Original Start Date: 18/03/2015 Expiry Date: - Issue No: - Version Start Date: - Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.7 Surface water abstractions

Records within 2000m	**1**

Licensed surface water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

Features are displayed on the Abstractions and Source Protection Zones map on **page 61 >**

ID	Location	Details	
1	444m N	Status: Historical Licence No: 24/67/10/0111 Details: Spray Irrigation - Direct Direct Source: EAW Surface Water Point: BURTON & PUDDINGTON ARTERIAL DITCH Data Type: Line Name: WT Banks & Co (Farming) Ltd Easting: 330860 Northing: 372660	Annual Volume (m^3): 54550 Max Daily Volume (m^3): 2180 Original Application No: - Original Start Date: 14/06/1988 Expiry Date: - Issue No: 102 Version Start Date: 01/04/2003 Version End Date: -

This data is sourced from the Environment Agency and Natural Resources Wales.

5.8 Potable abstractions

Records within 2000m	0

Licensed potable water abstractions for sites extracting more than 20 cubic metres of water a day and includes active and historical records. The data may be for a single abstraction point, a stretch of watercourse or a larger area.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.9 Source Protection Zones

Records within 500m	0

Source Protection Zones define the sensitivity of an area around a potable abstraction site to contamination.

This data is sourced from the Environment Agency and Natural Resources Wales.

5.10 Source Protection Zones (confined aquifer)

Records within 500m	0

Source Protection Zones in the confined aquifer define the sensitivity around a deep groundwater abstraction to contamination. A confined aquifer would normally be protected from contamination by overlying geology and is only considered a sensitive resource if deep excavation/drilling is taking place.

This data is sourced from the Environment Agency and Natural Resources Wales.

6 Hydrology

Site Outline

Search buffers in metres (m)

Water Network (OS MasterMap)

Surface water features (wider than 5m)

Surface water features (narrower than 5m)

WFD River, canal and surface water transfer water bodies

WFD Lake water bodies

WFD Transitional and coastal water bodies

WFD Surface water body catchments boundaries

WFD Groundwater body boundaries

6.1 Water Network (OS MasterMap)

Records within 250m	22

Detailed water network of Great Britain showing the flow and precise central course of every river, stream, lake and canal.

Features are displayed on the Hydrology map on **page 65 >**

ID	Location	Type of water feature	Ground level	Permanence	Name
1	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	-

ID	Location	Type of water feature	Ground level	Permanence	Name
2	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
A	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
B	**On site**	**Inland river not influenced by normal tidal action.**	**Underground**	**Watercourse contains water year round (in normal circumstances)**	**-**
B	**On site**	**Inland river not influenced by normal tidal action.**	**On ground surface**	**Watercourse contains water year round (in normal circumstances)**	**-**
C	7m N	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
A	16m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
D	94m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
7	106m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
E	121m E	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
8	122m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
9	129m S	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
10	131m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
11	131m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

ID	Location	Type of water feature	Ground level	Permanence	Name
F	139m NE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
12	139m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
14	142m SE	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
15	156m NW	Inland river not influenced by normal tidal action.	Underground	Watercourse contains water year round (in normal circumstances)	-
G	162m SE	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
17	222m NW	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
19	246m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-
20	247m S	Inland river not influenced by normal tidal action.	On ground surface	Watercourse contains water year round (in normal circumstances)	-

This data is sourced from the Ordnance Survey.

6.2 Surface water features

Records within 250m	**11**

Covering rivers, streams and lakes (some overlap with OS MasterMap Water Network data in previous section) but additionally covers smaller features such as ponds. Rivers and streams narrower than 5m are represented as a single line. Lakes, ponds and rivers or streams wider than 5m are represented as polygons.

Features are displayed on the Hydrology map on **page 65 >**

This data is sourced from the Ordnance Survey.

6.3 WFD Surface water body catchments

Records on site	1

The Water Framework Directive is an EU-led framework for the protection of inland surface waters, estuaries, coastal waters and groundwater through river basin-level management planning. In terms of surface water, these basins are broken down into smaller units known as management, operational and water body catchments.

Features are displayed on the Hydrology map on **page 65 >**

ID	Location	Type	Water body catchment	Water body ID	Operational catchment	Management catchment
4	**On site**	**Coastal catchment**	**Not part of a river WB catchment**	**166**	**Dee Estuary**	**Dee**

This data is sourced from the Environment Agency and Natural Resources Wales.

6.4 WFD Surface water bodies

Records identified	0

Surface water bodies under the Directive may be rivers, lakes, estuary or coastal. To achieve the purpose of the Directive, environmental objectives have been set and are reported on for each water body. The progress towards delivery of the objectives is then reported on by the relevant competent authorities at the end of each six-year cycle. The river water body directly associated with the catchment listed in the previous section is detailed below, along with any lake, canal, coastal or artificial water body within 250m of the site.

This data is sourced from the Environment Agency and Natural Resources Wales.

6.5 WFD Groundwater bodies

Records on site	1

Groundwater bodies are also covered by the Directive and the same regime of objectives and reporting detailed in the previous section is in place.

Features are displayed on the Hydrology map on **page 65 >**

ID	Location	Name	Water body ID	Overall rating	Chemical rating	Quantitative	Year
5	**On site**	**Dee Carboniferous Coal Measures**	**GB41102G204800**	**Poor**	**Poor**	**Good**	**2017**

This data is sourced from the Environment Agency and Natural Resources Wales.

7 River and coastal flooding

Site Outline

Search buffers in metres (m)

River and coastal flooding:

- High
- Medium
- Low
- Very Low
- Historical Flood Events
- Areas Used for Flood Storage
- Areas Benefiting from Flood Defences
- Flood Defences

7.1 Risk of flooding from rivers and the sea

Records within 50m	4

The chance of flooding from rivers and/or the sea in any given year, based on cells of 50m within the Risk of Flooding from Rivers and Sea (RoFRaS)/Flood Risk Assessment Wales (FRAW) models. Each cell is allocated one of four flood risk categories, taking into account flood defences and their condition. The risk categories for RoFRaS for rivers and the sea and FRAW for rivers are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 100 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 100 chance) or High (greater than or equal to 1 in 30 chance). The risk categories for FRAW for the sea are; Very low (less than 1 in 1000 chance in any given year), Low (less than 1 in 200 but greater than or equal to 1 in 1000 chance), Medium (less than 1 in 30 but greater than or equal to 1 in 200 chance) or High (greater than or equal to 1 in 30 chance).

Features are displayed on the River and coastal flooding map on **page 69 >**

Distance	Flood risk category
On site	**Low**
0 - 50m	Low

This data is sourced from the Environment Agency and Natural Resources Wales.

7.2 Historical Flood Events

Records within 250m	**0**

Records of historic flooding from rivers, the sea, groundwater and surface water. Records began in 1946 when predecessor bodies started collecting detailed information about flooding incidents, although limited details may be included on flooding incidents prior to this date. Takes into account the presence of defences, structures, and other infrastructure where they existed at the time of flooding, and includes flood extents that may have been affected by overtopping, breaches or blockages.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.3 Flood Defences

Records within 250m	**0**

Records of flood defences owned, managed or inspected by the Environment Agency and Natural Resources Wales. Flood defences can be structures, buildings or parts of buildings. Typically these are earth banks, stone and concrete walls, or sheet-piling that is used to prevent or control the extent of flooding.

This data is sourced from the Environment Agency and Natural Resources Wales.

7.4 Areas Benefiting from Flood Defences

Records within 250m	**5**

Areas that would benefit from the presence of flood defences in a 1 in 100 (1%) chance of flooding each year from rivers or 1 in 200 (0.5%) chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 69 >**

ID	Location	
4	**On site**	**Area benefiting from flood defences**
5	**On site**	**Area benefiting from flood defences**
6	4m N	Area benefiting from flood defences
7	5m NW	Area benefiting from flood defences
8	7m NW	Area benefiting from flood defences

This data is sourced from the Environment Agency and Natural Resources Wales.

7.5 Flood Storage Areas

Records within 250m	0

Areas that act as a balancing reservoir, storage basin or balancing pond to attenuate an incoming flood peak to a flow level that can be accepted by the downstream channel or to delay the timing of a flood peak so that its volume is discharged over a longer period.

This data is sourced from the Environment Agency and Natural Resources Wales.

River and coastal flooding - Flood Zones

Site Outline

Search buffers in metres (m)

Flood zone 2

Flood zone 3

7.6 Flood Zone 2

Records within 50m	1

Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land between Flood Zone 3 (see next section) and the extent of the flooding from rivers or the sea with a 1 in 1000 (0.1%) chance of flooding each year.

Features are displayed on the River and coastal flooding map on **page 69 >**

Location	Type
On site	**Zone 2 - (Fluvial /Tidal Models)**

This data is sourced from the Environment Agency and Natural Resources Wales.

7.7 Flood Zone 3

Records within 50m	1

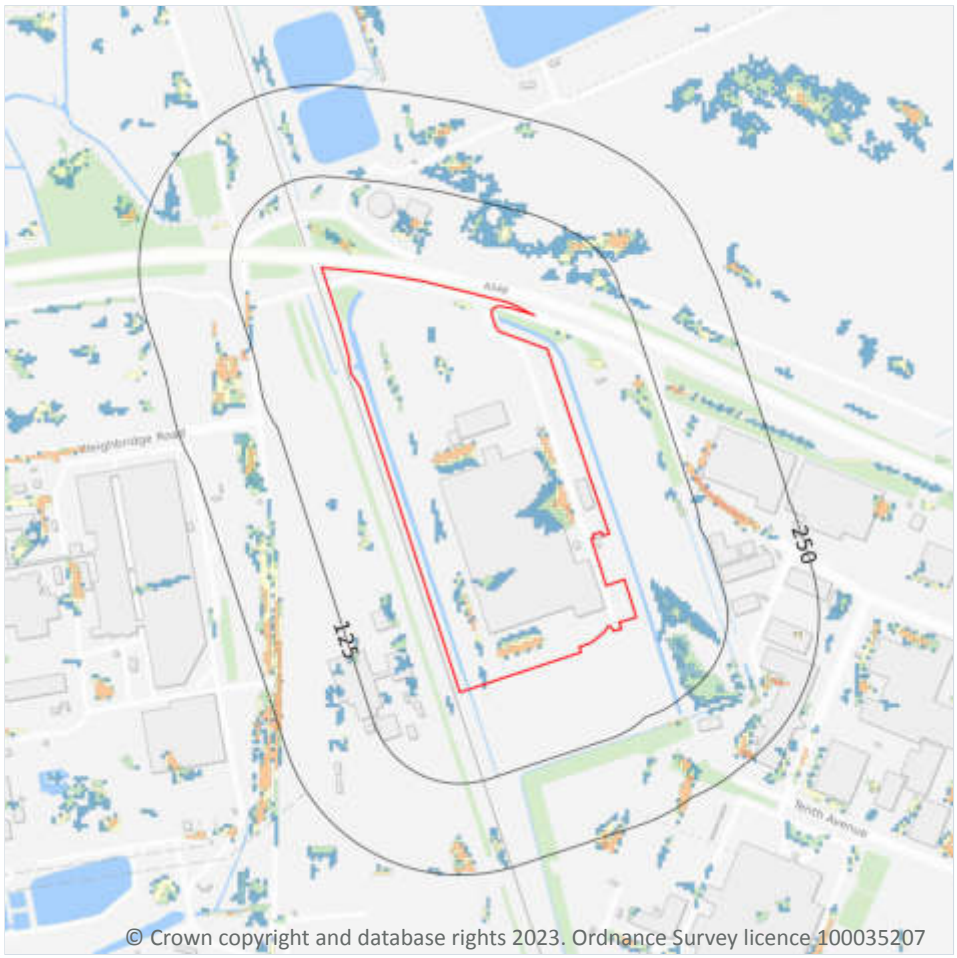
Areas of land at risk of flooding, when the presence of flood defences are ignored. Covering land with a 1 in 100 (1%) or greater chance of flooding each year from rivers or a 1 in 200 (0.5%) or greater chance of flooding each year from the sea.

Features are displayed on the River and coastal flooding map on **page 69 >**

Location	Type
On site	**Zone 3 - (Fluvial /Tidal Models)**

This data is sourced from the Environment Agency and Natural Resources Wales.

8 Surface water flooding



Site Outline
Search buffers in metres (m)

1 in 1000 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 250 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 100 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

1 in 30 return period
- Depth between 0.1m - 0.3m
- Depth between 0.3m - 1.0m
- Depth greater than 1.0m

8.1 Surface water flooding

Highest risk on site	**1 in 30 year, 0.3m - 1.0m**
Highest risk within 50m	**1 in 30 year, 0.3m - 1.0m**

Ambiental Risk Analytics surface water (pluvial) FloodMap identifies areas likely to flood as a result of extreme rainfall events, i.e. land naturally vulnerable to surface water ponding or flooding. This data set was produced by simulating 1 in 30 year, 1 in 100 year, 1 in 250 year and 1 in 1,000 year rainfall events. Modern urban drainage systems are typically built to cope with rainfall events between 1 in 20 and 1 in 30 years, though some older ones may flood in a 1 in 5 year rainfall event.

Features are displayed on the Surface water flooding map on **page 74 >**

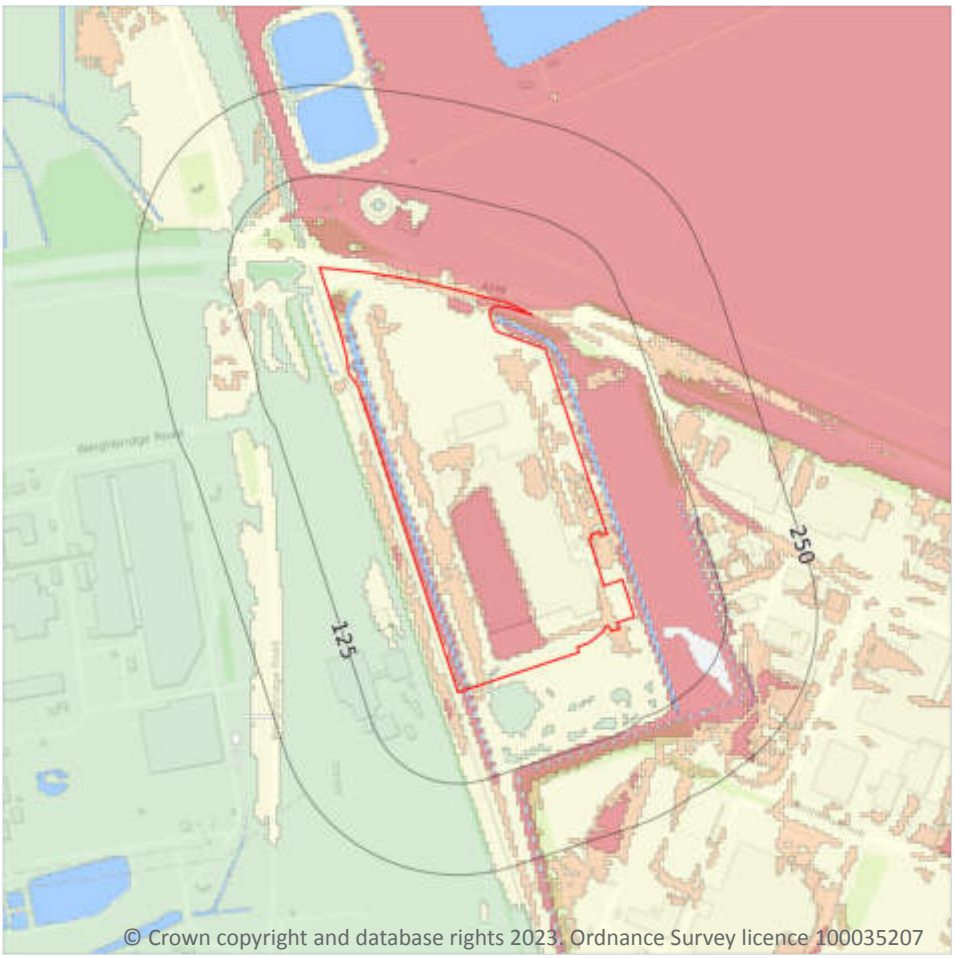
The data shown on the map and in the table above shows the highest likelihood of flood events happening at the site. Lower likelihood events may have greater flood depths and hence a greater potential impact on a site.

The table below shows the maximum flood depths for a range of return periods for the site.

Return period	Maximum modelled depth
1 in 1000 year	Between 0.3m and 1.0m
1 in 250 year	Between 0.3m and 1.0m
1 in 100 year	Between 0.3m and 1.0m
1 in 30 year	Between 0.3m and 1.0m

This data is sourced from Ambiental Risk Analytics.

9 Groundwater flooding



Site Outline

Search buffers in metres (m)

High

Moderate - High

Moderate

Low

Negligible

9.1 Groundwater flooding

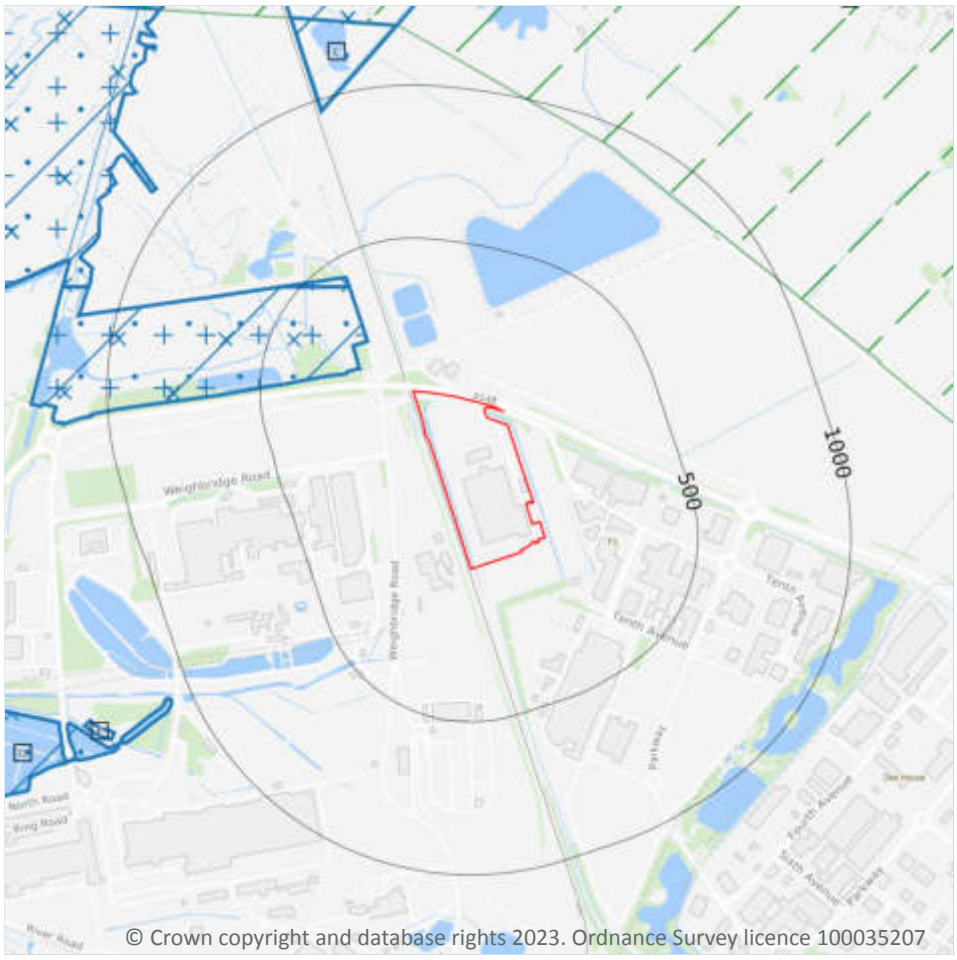
Highest risk on site	**High**
Highest risk within 50m	**High**

Groundwater flooding is caused by unusually high groundwater levels. It occurs when the water table rises above the ground surface or within underground structures such as basements or cellars. Groundwater flooding tends to exhibit a longer duration than surface water flooding, possibly lasting for weeks or months, and as a result it can cause significant damage to property. This risk assessment is based on a 1 in 100 year return period and a 5m Digital Terrain Model (DTM).

Features are displayed on the Groundwater flooding map on **page 76 >**

This data is sourced from Ambiental Risk Analytics.

10 Environmental designations



Site Outline

Search buffers in metres (m)

- Sites of Special Scientific Interest (SSSI)
- Conserved wetland sites (Ramsar sites)
- Special Areas of Conservation (SAC)
- Special Protection Areas (SPA)
- Green Belt

10.1 Sites of Special Scientific Interest (SSSI)

Records within 2000m	10

Sites providing statutory protection for the best examples of UK flora, fauna, or geological or physiographical features. Originally notified under the National Parks and Access to the Countryside Act 1949, SSSIs were re-notified under the Wildlife and Countryside Act 1981. Improved provisions for the protection and management of SSSIs were introduced by the Countryside and Rights of Way Act 2000 (in England and Wales) and (in Scotland) by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2010.

Features are displayed on the Environmental designations map on **page 77 >**

ID	Location	Name	Data source
1	189m NW	Dee Estuary / Aber Afon Dyfrdwy	Natural Resources Wales

ID	Location	Name	Data source
2	399m NW	Dee Estuary / Aber Afon Dyfrdwy	Natural Resources Wales
B	963m NW	Inner Marsh Farm	Natural England
C	963m NW	Inner Marsh Farm	Natural Resources Wales
D	1069m SW	Shotton Lagoons and Reedbeds	Natural Resources Wales
E	1283m SW	Shotton Lagoons and Reedbeds	Natural Resources Wales
F	1496m NW	Dee Estuary	Natural England
-	1663m SW	Shotton Lagoons and Reedbeds	Natural Resources Wales
-	1704m SW	Shotton Lagoons and Reedbeds	Natural Resources Wales
-	1769m S	Afon Dyfrdwy (River Dee)	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.2 Conserved wetland sites (Ramsar sites)

Records within 2000m	**10**

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. They cover all aspects of wetland conservation and wise use, recognizing wetlands as ecosystems that are extremely important for biodiversity conservation in general and for the well-being of human communities. These sites cover a broad definition of wetland; marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, and even some marine areas.

Features are displayed on the Environmental designations map on **page 77 >**

ID	Location	Site	Details
A	189m NW	Name: The Dee Estuary (Wales) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
B	962m NW	Name: The Dee Estuary Site status: Listed Data source: Natural England	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
C	962m NW	Name: The Dee Estuary (Wales) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
D	1069m SW	Name: The Dee Estuary (Wales) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
B	1195m N	Name: The Dee Estuary (England) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
4	1210m NW	Name: The Dee Estuary Site status: Listed Data source: Natural England	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
E	1282m SW	Name: The Dee Estuary (Wales) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
F	1496m NW	Name: The Dee Estuary (England) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
-	1663m SW	Name: The Dee Estuary (Wales) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

ID	Location	Site	Details
-	1704m SW	Name: The Dee Estuary (Wales) Site status: - Data source: Natural Resources Wales	Overview: The Dee is a large funnel-shaped sheltered estuary and is one of the top ten estuaries in the UK for wintering and passage waterfowl populations. The estuary supports internationally important numbers of waterfowl and waders. The estuary is an accreting system and the extent of saltmarsh continues to expand as the estuary seeks to achieve a new equilibrium situation following large-scale historical land-claim at the head of the estuary which commenced in the 1730s. Nevertheless, the estuary still supports extensive areas of intertidal sand and mudflats as well as saltmarsh. Where land-claim has not occurred, the saltmarshes grade into transitional brackish and freshwater swamp vegetation, on the upper shore. The site includes the three sandstone islands of Hilbre with their important cliff vegetation and maritime heathland/grassland, the sand dune system between the Point of Ayr and Prestatyn in Wales and Red Rocks in England, various Welsh coastal fields historically reclaimed from the estuary but used by the Dee Estuary wintering waterfowl populations, freshwater lagoons and reedbeds at Shotton supporting the largest common tern breeding colony in Wales and freshwater lagoons at Inner Marsh Farm used by waterfowl throughout the year but particularly in winter. The two shorelines of the estuary show a marked contrast between the industrialised usage of the coastal belt in Wales and residential and recreational usage in England. Ramsar criteria: Ramsar criterion 1 Extensive intertidal mud and sand flats (20 km by 9 km) with large expanses of saltmarsh towards the head of the estuary. Habitats Directive Annex I features present on the pSAC include: H1130 Estuaries H1140 Mudflats and sandflats not covered by seawater at low tide H1210 Annual vegetation of drift lines H1230 Vegetated sea cliffs of the Atlantic and Baltic coasts H1310 Salicornia and other annuals colonising mud and sand H1330 Atlantic salt meadows (Glauco-Puccinellietalia maritimae) H2110 Embryonic shifting dunes H2120 Shifting dunes along the shoreline with Ammophila arenaria (“white dunes”) H2130 Fixed dunes with herbaceous vegetation (“grey dunes”) H2190 Humid dune slacks Criterion 2, it supports breeding colonies of the vulnerable Natterjack Toad, Epidalea calamita

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.3 Special Areas of Conservation (SAC)

Records within 2000m	**4**

Areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive.

Features are displayed on the Environmental designations map on **page 77 >**

ID	Location	Name	Features of interest	Habitat description	Data source
A	189m NW	Dee Estuary / Aber Dyfrdwy (Wales)	Estuaries; Intertidal mudflats and sandflats; Lagoons; Annual vegetation of drift lines; Vegetated sea cliffs; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Shifting dunes; Shifting dunes with marram; Dune grassland; Humid dune slacks; Dry heaths; Sea lamprey; River lamprey; Twaite shad; Otter; Grey seal; Petalwort.	Shingle, Sea cliffs, Islets; Salt marshes, Salt pastures, Salt steppes; Humid grassland, Mesophile grassland; Improved grassland; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Coastal sand dunes, Sand beaches, Machair; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	Natural Resources Wales
F	1496m NW	Dee Estuary / Aber Dyfrdwy (England)	Estuaries; Intertidal mudflats and sandflats; Lagoons; Annual vegetation of drift lines; Vegetated sea cliffs; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Shifting dunes; Shifting dunes with marram; Dune grassland; Humid dune slacks; Dry heaths; Sea lamprey; River lamprey; Twaite shad; Otter; Grey seal; Petalwort.	Shingle, Sea cliffs, Islets; Salt marshes, Salt pastures, Salt steppes; Humid grassland, Mesophile grassland; Improved grassland; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Coastal sand dunes, Sand beaches, Machair; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	Natural Resources Wales

ID	Location	Name	Features of interest	Habitat description	Data source
F	1496m NW	Dee Estuary	Estuaries; Intertidal mudflats and sandflats; Lagoons; Annual vegetation of drift lines; Vegetated sea cliffs; Glasswort and other annuals colonising mud and sand; Cord-grass swards; Atlantic salt meadows; Shifting dunes; Shifting dunes with marram; Dune grassland; Humid dune slacks; Dry heaths; Sea lamprey; River lamprey; Twaite shad; Otter; Grey seal; Petalwort.	Shingle, Sea cliffs, Islets; Salt marshes, Salt pastures, Salt steppes; Humid grassland, Mesophile grassland; Improved grassland; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Bogs, Marshes, Water fringed vegetation, Fens; Broad-leaved deciduous woodland; Coastal sand dunes, Sand beaches, Machair; Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	Natural England
-	1769m S	River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid (Wales)	Rivers with floating vegetation often dominated by water-crowfoot; Mixed woodland on base-rich soils associated with rocky slopes; Western acidic oak woodland; Alder woodland on floodplains; Sea lamprey; Brook lamprey; River lamprey; Twaite shad; Atlantic salmon; Bullhead; Freshwater pearl mussel; Otter; Floating water-plantain.	Broad-leaved deciduous woodland; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Improved grassland; Inland water bodies (Standing water, Running water); Salt marshes, Salt pastures, Salt steppes	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.4 Special Protection Areas (SPA)

Records within 2000m	**10**

Sites classified by the UK Government under the EC Birds Directive, SPAs are areas of the most important habitat for rare (listed on Annex I to the Directive) and migratory birds within the European Union.

Features are displayed on the Environmental designations map on **page 77 >**

ID	Location	Name	Species of interest	Habitat description	Data source
A	189m NW	The Dee Estuary (Wales)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales
B	963m NW	The Dee Estuary	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural England
C	963m NW	The Dee Estuary (Wales)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales

ID	Location	Name	Species of interest	Habitat description	Data source
D	1069m SW	The Dee Estuary (Wales)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales
B	1196m N	The Dee Estuary (England)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales
5	1211m NW	The Dee Estuary	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural England

ID	Location	Name	Species of interest	Habitat description	Data source
E	1283m SW	The Dee Estuary (Wales)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales
6	1496m NW	The Dee Estuary (England)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales
-	1663m SW	The Dee Estuary (Wales)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales

ID	Location	Name	Species of interest	Habitat description	Data source
-	1704m SW	The Dee Estuary (Wales)	Common shelduck; Eurasian teal; Northern pintail; Eurasian oystercatcher; Grey plover; Red knot; Bar-tailed godwit; Eurasian curlew; Common redshank; Common redshank; Sandwich tern; Common tern; Little tern; Black-tailed godwit; Dunlin	Broad-leaved deciduous woodland; Shingle, Sea cliffs, Islets; Coastal sand dunes, Sand beaches, Machair; Mixed woodland; Dry grassland, Steppes; Inland water bodies (Standing water, Running water); Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites); Improved grassland; Other arable land; Salt marshes, Salt pastures, Salt steppes; Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins); Humid grassland, Mesophile grassland; Bogs, Marshes, Water fringed vegetation, Fens; Marine areas, Sea inlets	Natural Resources Wales

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.5 National Nature Reserves (NNR)

Records within 2000m	0

Sites containing examples of some of the most important natural and semi-natural terrestrial and coastal ecosystems in Great Britain. They are managed to conserve their habitats, provide special opportunities for scientific study or to provide public recreation compatible with natural heritage interests.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.6 Local Nature Reserves (LNR)

Records within 2000m	0

Sites managed for nature conservation, and to provide opportunities for research and education, or simply enjoying and having contact with nature. They are declared by local authorities under the National Parks and Access to the Countryside Act 1949 after consultation with the relevant statutory nature conservation agency.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.7 Designated Ancient Woodland

Records within 2000m	0

Ancient woodlands are classified as areas which have been wooded continuously since at least 1600 AD. This includes semi-natural woodland and plantations on ancient woodland sites. 'Wooded continuously' does not mean there is or has previously been continuous tree cover across the whole site, and not all trees within the

woodland have to be old.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.8 Biosphere Reserves

Records within 2000m	0

Biosphere Reserves are internationally recognised by UNESCO as sites of excellence to balance conservation and socioeconomic development between nature and people. They are recognised under the Man and the Biosphere (MAB) Programme with the aim of promoting sustainable development founded on the work of the local community.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.9 Forest Parks

Records within 2000m	0

These are areas managed by the Forestry Commission designated on the basis of recreational, conservation or scenic interest.

This data is sourced from the Forestry Commission.

10.10 Marine Conservation Zones

Records within 2000m	0

A type of marine nature reserve in UK waters established under the Marine and Coastal Access Act (2009). They are designated with the aim to protect nationally important, rare or threatened habitats and species.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

10.11 Green Belt

Records within 2000m	1

Areas designated to prevent urban sprawl by keeping land permanently open.

Features are displayed on the Environmental designations map on **page 77 >**

ID	Location	Name	Local Authority name
3	895m NE	Merseyside and Greater Manchester	Cheshire West and Chester

This data is sourced from the Ministry of Housing, Communities and Local Government.

10.12 Proposed Ramsar sites

Records within 2000m	0

Ramsar sites are areas listed as a Wetland of International Importance under the Convention on Wetlands of International Importance especially as Waterfowl Habitat (the Ramsar Convention) 1971. The sites here supplied have a status of 'Proposed' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.13 Possible Special Areas of Conservation (pSAC)

Records within 2000m	0

Special Areas of Conservation are areas which have been identified as best representing the range and variety within the European Union of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the EC Habitats Directive. Those sites supplied here are those with a status of 'Possible' having been identified for potential adoption under the framework.

This data is sourced from Natural England and Natural Resources Wales.

10.14 Potential Special Protection Areas (pSPA)

Records within 2000m	0

Special Protection Areas (SPAs) are areas designated (or ‘classified’) under the European Union Wild Birds Directive for the protection of nationally and internationally important populations of wild birds. Those sites supplied here are those with a status of 'Potential' having been identified for potential adoption under the framework.

This data is sourced from Natural England.

10.15 Nitrate Sensitive Areas

Records within 2000m	0

Areas where nitrate concentrations in drinking water sources exceeded or was at risk of exceeding the limit of 50 mg/l set by the 1980 EC Drinking Water Directive. Voluntary agricultural measures as a means of reducing the levels of nitrate were introduced by DEFRA as MAFF, with payments being made to farmers who complied. The scheme was started as a pilot in 1990 in ten areas, later implemented within 32 areas. The scheme was closed to further new entrants in 1998, although existing agreements continued for their full term. All Nitrate Sensitive Areas fell within the areas designated as Nitrate Vulnerable Zones (NVZs) in 1996 under the EC Nitrate Directive (91/676/EEC).

This data is sourced from Natural England.

10.16 Nitrate Vulnerable Zones

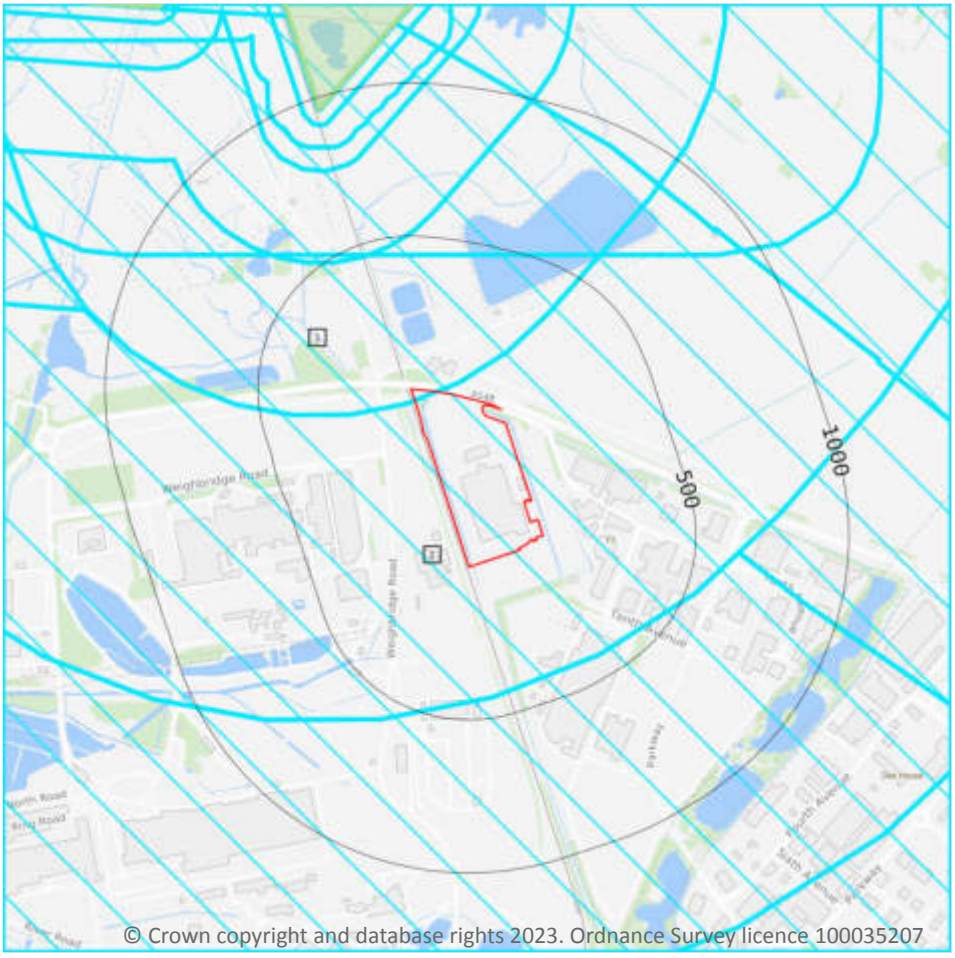
Records within 2000m	8

Areas at risk from agricultural nitrate pollution designated under the EC Nitrate Directive (91/676/EEC). These are areas of land that drain into waters polluted by nitrates. Farmers operating within these areas have to follow mandatory rules to tackle nitrate loss from agriculture.

Location	Name	Type	NVZ ID	Status
On site	**-**	**Groundwater**	**148**	**Existing**
184m S	Shotwick Brook NVZ	Surface Water	708	Existing
184m S	-	Surface Water	708	New
897m NE	Neston, England	Groundwater	3	Existing
920m NE	-	Groundwater	3	Existing
931m N	-	Groundwater	3	Existing
1606m E	-	Groundwater	3	Existing
1826m E	-	Groundwater	3	Existing

This data is sourced from Natural England and Natural Resources Wales.

SSSI Impact Zones and Units



Site Outline

Search buffers in metres (m)

SSSI Impact Risk Zones

SSSI Units

Not recorded

Favourable

Unfavourable - Recovering

Unfavourable - No change

Unfavourable - Declining

Partially destroyed

Destroyed

10.17 SSSI Impact Risk Zones

Records on site	2

Developed to allow rapid initial assessment of the potential risks to SSSIs posed by development proposals. They define zones around each SSSI which reflect the particular sensitivities of the features for which it is notified and indicate the types of development proposal which could potentially have adverse impacts.

Features are displayed on the SSSI Impact Zones and Units map on **page 98 >**

ID	Location	Type of developments requiring consultation
1	On site	**Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where net additional gross internal floorspace is > 1,000m² or footprint exceeds 0.2ha. Residential - Residential development of 50 units or more. Rural residential - Any residential development of 10 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 500 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where net additional gross internal floorspace is > 1,000m² or any development needing its own water supply .**
2	On site	**Infrastructure - Pipelines, pylons and overhead cables. any transport proposal including road, rail and by water (excluding routine maintenance). airports, helipads and other aviation proposals. Wind and Solar - Solar schemes with footprint > 0.5ha, all wind turbines. Minerals, Oil and Gas - Planning applications for quarries, including: new proposals, review of minerals permissions (romp), extensions, variations to conditions etc. oil & gas exploration/extraction. Rural non-residential - Large non residential developments outside existing settlements/urban areas where footprint exceeds 1ha. Residential - Residential development of 50 units or more. Rural residential - Any residential development of 50 or more houses outside existing settlements/urban areas. Air pollution - Any industrial/agricultural development that could cause air pollution (incl: industrial processes, livestock & poultry units with floorspace > 500m², slurry lagoons & digestate stores > 200m², manure stores > 250t). Combustion - General combustion processes >20mw energy input. incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion. Waste - Landfill. incl: inert landfill, non-hazardous landfill, hazardous landfill. Composting - Any composting proposal with more than 75000 tonnes maximum annual operational throughput. incl: open windrow composting, in-vessel composting, anaerobic digestion, other waste management. Water supply - Large infrastructure such as warehousing / industry where total net additional gross internal floorspace following development is 1,000m² or more.**

This data is sourced from Natural England.

10.18 SSSI Units

Records within 2000m	2

Divisions of SSSIs used to record management and condition details. Units are the smallest areas for which Natural England gives a condition assessment, however, the size of units varies greatly depending on the types of management and the conservation interest.

Features are displayed on the SSSI Impact Zones and Units map on **page 98 >**

ID: 16
Location: 963m NW
SSSI name: Inner Marsh Farm
Unit name: Whole Site
Broad habitat: Standing Open Water And Canals
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Black-tailed godwit, Limosa limosa islandica	Favourable	21/03/2012
Aggregations of non-breeding birds - Pintail, Anas acuta	Favourable	21/03/2012
Aggregations of non-breeding birds - Teal, Anas crecca	Favourable	21/03/2012

ID: 26
Location: 1496m NW
SSSI name: Dee Estuary
Unit name: Southern Salt Marsh
Broad habitat: Littoral Sediment
Condition: Favourable
Reportable features:

Feature name	Feature condition	Date of assessment
Aggregations of breeding birds - Common tern, Sterna hirundo	Not Recorded	01/01/1900
Aggregations of breeding birds - Cormorant, Phalacrocorax carbo sinensis	Not Recorded	01/01/1900
Aggregations of breeding birds - Redshank, Tringa totanus	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Bar-tailed godwit, Limosa lapponica	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Black-tailed godwit, Limosa limosa islandica	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Cormorant, Phalacrocorax carbo carbo	Not Recorded	01/01/1900

Feature name	Feature condition	Date of assessment
Aggregations of non-breeding birds - Curlew, Numenius arquata	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Dunlin, Calidris alpina alpina	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Great crested grebe, Podiceps cristatus	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Grey plover, Pluvialis squatarola	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Knot, Calidris canutus	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Oystercatcher, Haematopus ostralegus	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Pintail, Anas acuta	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Redshank, Tringa totanus	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Ringed plover, Charadrius hiaticula	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Shelduck, Tadorna tadorna	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Teal, Anas crecca	Not Recorded	01/01/1900
Aggregations of non-breeding birds - Wigeon, Anas penelope	Not Recorded	01/01/1900
Estuaries	Favourable	01/12/2010
Floodplain fen (lowland)	Favourable	01/12/2010
Lowland wet neutral grassland (MG11, MG13)	Favourable	01/12/2010
Luperina nickerlii, Sandhill rustic moth	Not Recorded	01/01/1900
SM4-28 - Saltmarsh	Favourable	01/12/2010
Vascular plant assemblage	Not Recorded	01/01/1900

This data is sourced from Natural England and Natural Resources Wales.

11 Visual and cultural designations

11.1 World Heritage Sites

Records within 250m	0

Sites designated for their globally important cultural or natural interest requiring appropriate management and protection measures. World Heritage Sites are designated to meet the UK's commitments under the World Heritage Convention.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.2 Area of Outstanding Natural Beauty

Records within 250m	0

Areas of Outstanding Natural Beauty (AONB) are conservation areas, chosen because they represent 18% of the finest countryside. Each AONB has been designated for special attention because of the quality of their flora, fauna, historical and cultural associations, and/or scenic views. The National Parks and Access to the Countryside Act of 1949 created AONBs and the Countryside and Rights of Way Act, 2000 added further regulation and protection. There are likely to be restrictions to some developments within these areas.

This data is sourced from Natural England, Natural Resources Wales and Scottish Natural Heritage.

11.3 National Parks

Records within 250m	0

In England and Wales, the purpose of National Parks is to conserve and enhance landscapes within the countryside whilst promoting public enjoyment of them and having regard for the social and economic well-being of those living within them. In Scotland National Parks have the additional purpose of promoting the sustainable use of the natural resources of the area and the sustainable social and economic development of its communities. The National Parks and Access to the Countryside Act 1949 established the National Park designation in England and Wales, and The National Parks (Scotland) Act 2000 in Scotland.

This data is sourced from Natural England, Natural Resources Wales and the Scottish Government.

11.4 Listed Buildings

Records within 250m	0

Buildings listed for their special architectural or historical interest. Building control in the form of 'listed building consent' is required in order to make any changes to that building which might affect its special interest. Listed buildings are graded to indicate their relative importance, however building controls apply to all buildings equally, irrespective of their grade, and apply to the interior and exterior of the building in its entirety, together with any curtilage structures.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.5 Conservation Areas

Records within 250m	0

Local planning authorities are obliged to designate as conservation areas any parts of their own area that are of special architectural or historic interest, the character and appearance of which it is desirable to preserve or enhance. Designation of a conservation area gives broader protection than the listing of individual buildings. All the features within the area, listed or otherwise, are recognised as part of its character. Conservation area designation is the means of recognising the importance of all factors and of ensuring that planning decisions address the quality of the landscape in its broadest sense.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.6 Scheduled Ancient Monuments

Records within 250m	0

A scheduled monument is an historic building or site that is included in the Schedule of Monuments kept by the Secretary of State for Digital, Culture, Media and Sport. The regime is set out in the Ancient Monuments and Archaeological Areas Act 1979. The Schedule of Monuments has c.20,000 entries and includes sites such as Roman remains, burial mounds, castles, bridges, earthworks, the remains of deserted villages and industrial sites. Monuments are not graded, but all are, by definition, considered to be of national importance.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

11.7 Registered Parks and Gardens

Records within 250m	0

Parks and gardens assessed to be of particular interest and of special historic interest. The emphasis being on 'designed' landscapes, rather than on planting or botanical importance. Registration is a 'material consideration' in the planning process, meaning that planning authorities must consider the impact of any proposed development on the special character of the landscape.

This data is sourced from Historic England, Cadw and Historic Environment Scotland.

12 Agricultural designations

Site Outline

Search buffers in metres (m)

- Grade 1 - excellent quality
- Grade 2 - very good quality
- Grade 3a - good quality
- Grade 3b - moderate quality
- Grade 4 - poor quality
- Grade 5 - very poor quality
- Timber felling licences
- Open Access land

12.1 Agricultural Land Classification

Records within 250m	2

Classification of the quality of agricultural land taking into consideration multiple factors including climate, physical geography and soil properties. It should be noted that the categories for the grading of agricultural land are not consistent across England, Wales and Scotland.

Features are displayed on the Agricultural designations map on **page 104 >**

ID	Location	Classification	Description
1	**On site**	**Grade 2**	**Good quality agricultural land**
11	191m NW	Grade 5	Very poor quality agricultural land

This data is sourced from Natural Resources Wales.

12.2 Open Access Land

Records within 250m	0

The Countryside and Rights of Way Act 2000 (CROW Act) gives a public right of access to land without having to use paths. Access land includes mountains, moors, heaths and downs that are privately owned. It also includes common land registered with the local council and some land around the England Coast Path. Generally permitted activities on access land are walking, running, watching wildlife and climbing.

This data is sourced from Natural England and Natural Resources Wales.

12.3 Tree Felling Licences

Records within 250m	0

Felling Licence Application (FLA) areas approved by Forestry Commission England. Anyone wishing to fell trees must ensure that a licence or permission under a grant scheme has been issued by the Forestry Commission before any felling is carried out or that one of the exceptions apply.

This data is sourced from the Forestry Commission.

12.4 Environmental Stewardship Schemes

Records within 250m	0

Environmental Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. The schemes identified may be historical schemes that have now expired, or may still be active.

This data is sourced from Natural England.

12.5 Countryside Stewardship Schemes

Records within 250m	0

Countryside Stewardship covers a range of schemes that provide financial incentives to farmers, foresters and land managers to look after and improve the environment. Main objectives are to improve the farmed environment for wildlife and to reduce diffuse water pollution.

This data is sourced from Natural England.

13 Habitat designations

13.1 Priority Habitat Inventory

Records within 250m	0

Habitats of principal importance as named under Natural Environment and Rural Communities Act (2006) Section 41.

This data is sourced from Natural England.

13.2 Habitat Networks

Records within 250m	0

Habitat networks for 18 priority habitat networks (based primarily, but not exclusively, on the priority habitat inventory) and areas suitable for the expansion of networks through restoration and habitat creation.

This data is sourced from Natural England.

13.3 Open Mosaic Habitat

Records within 250m	0

Sites verified as Open Mosaic Habitat. Mosaic habitats are brownfield sites that are identified under the UK Biodiversity Action Plan as a priority habitat due to the habitat variation within a single site, supporting an array of invertebrates.

This data is sourced from Natural England.

13.4 Limestone Pavement Orders

Records within 250m	0

Limestone pavements are outcrops of limestone where the surface has been worn away by natural means over millennia. These rocks have the appearance of paving blocks, hence their name. Not only do they have geological interest, they also provide valuable habitats for wildlife. These habitats are threatened due to their removal for use in gardens and water features. Many limestone pavements have been designated as SSSIs which affords them some protection. In addition, Section 34 of the Wildlife and Countryside Act 1981 gave them additional protection via the creation of Limestone Pavement Orders, which made it a criminal offence to remove any part of the outcrop. The associated Limestone Pavement Priority Habitat is part of the UK Biodiversity Action Plan priority habitat in England.

This data is sourced from Natural England.

14 Geology 1:10,000 scale - Availability

Site Outline

Search buffers in metres (m)

Full coverage

Partial coverage

No coverage

14.1 10k Availability

Records within 500m	1

An indication on the coverage of 1:10,000 scale geology data for the site, the most detailed dataset provided by the British Geological Survey. Either 'Full', 'Partial' or 'No coverage' for each geological theme.

Features are displayed on the Geology 1:10,000 scale - Availability map on **page 107 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**No coverage**	**No coverage**	**No coverage**	**No coverage**	**NoCov**

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Artificial and made ground

14.2 Artificial and made ground (10k)

Records within 500m	0

Details of made, worked, infilled, disturbed and landscaped ground at 1:10,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Superficial

14.3 Superficial geology (10k)

Records within 500m	0

Superficial geological deposits at 1:10,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

This data is sourced from the British Geological Survey.

14.4 Landslip (10k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:10,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

Geology 1:10,000 scale - Bedrock

14.5 Bedrock geology (10k)

Records within 500m	0

Bedrock geology at 1:10,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

This data is sourced from the British Geological Survey.

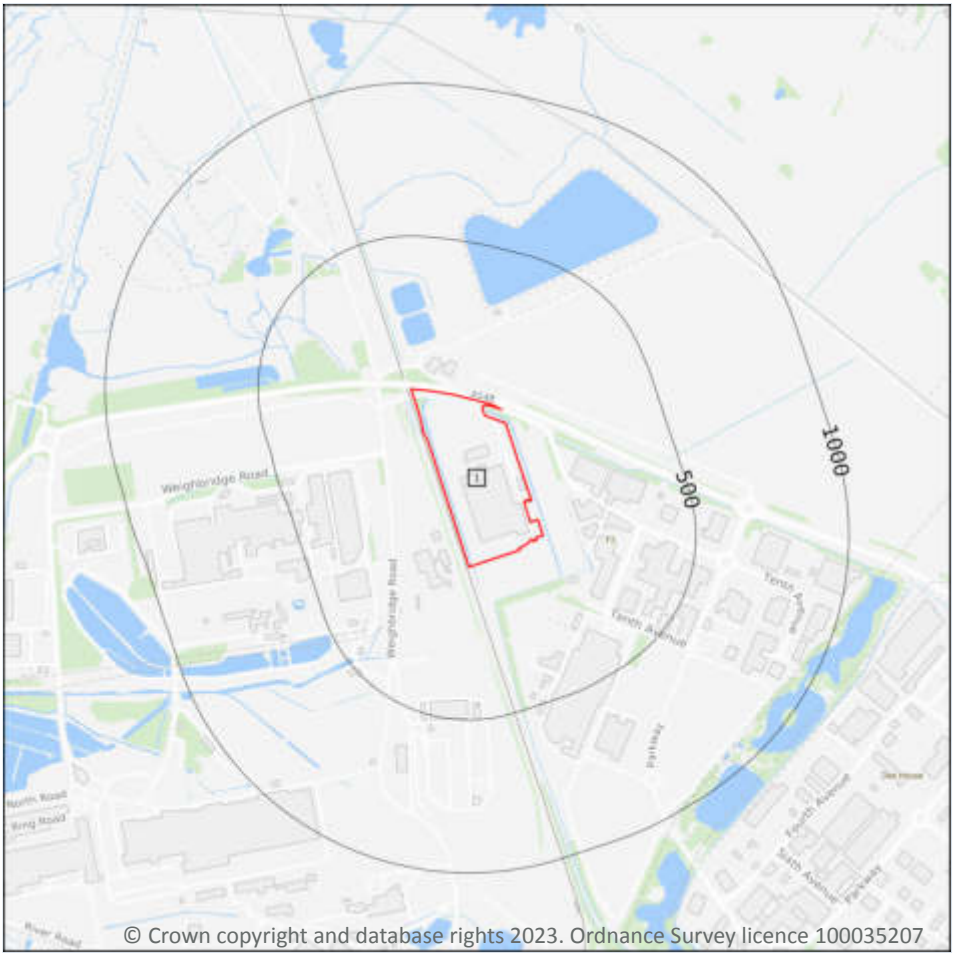
14.6 Bedrock faults and other linear features (10k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:10,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

15 Geology 1:50,000 scale - Availability



Site Outline

Search buffers in metres (m)

Geological map tile

15.1 50k Availability

Records within 500m	1

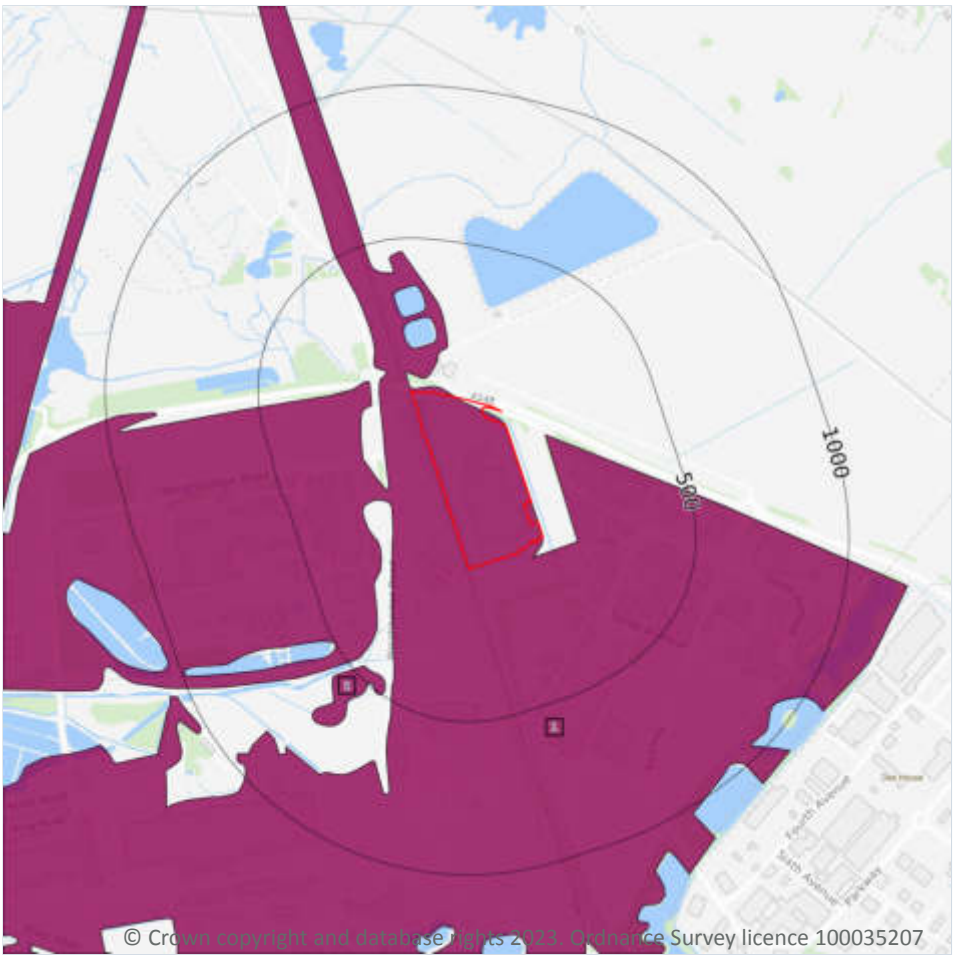
An indication on the coverage of 1:50,000 scale geology data for the site. Either 'Full' or 'No coverage' for each geological theme. Where 50k data is not available, this area has been filled in with 625k scale data.

Features are displayed on the Geology 1:50,000 scale - Availability map on **page 111 >**

ID	Location	Artificial	Superficial	Bedrock	Mass movement	Sheet No.
1	**On site**	**Full**	**Full**	**Full**	**Full**	**EW108_flint_v4**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Artificial and made ground



Site Outline

Search buffers in metres (m)

- Made ground
- Worked ground
- Infilled ground
- Disturbed ground
- Landscaped ground

15.2 Artificial and made ground (50k)

Records within 500m	2

Details of made, worked, infilled, disturbed and landscaped ground at 1:50,000 scale. Artificial ground can be associated with potentially contaminated material, unpredictable engineering conditions and instability.

Features are displayed on the Geology 1:50,000 scale - Artificial and made ground map on **page 112 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**MGR-ARTDP**	**MADE GROUND (UNDIVIDED)**	**ARTIFICIAL DEPOSIT**
2	454m SW	MGR-ARTDP	MADE GROUND (UNDIVIDED)	ARTIFICIAL DEPOSIT

This data is sourced from the British Geological Survey.

15.3 Artificial ground permeability (50k)

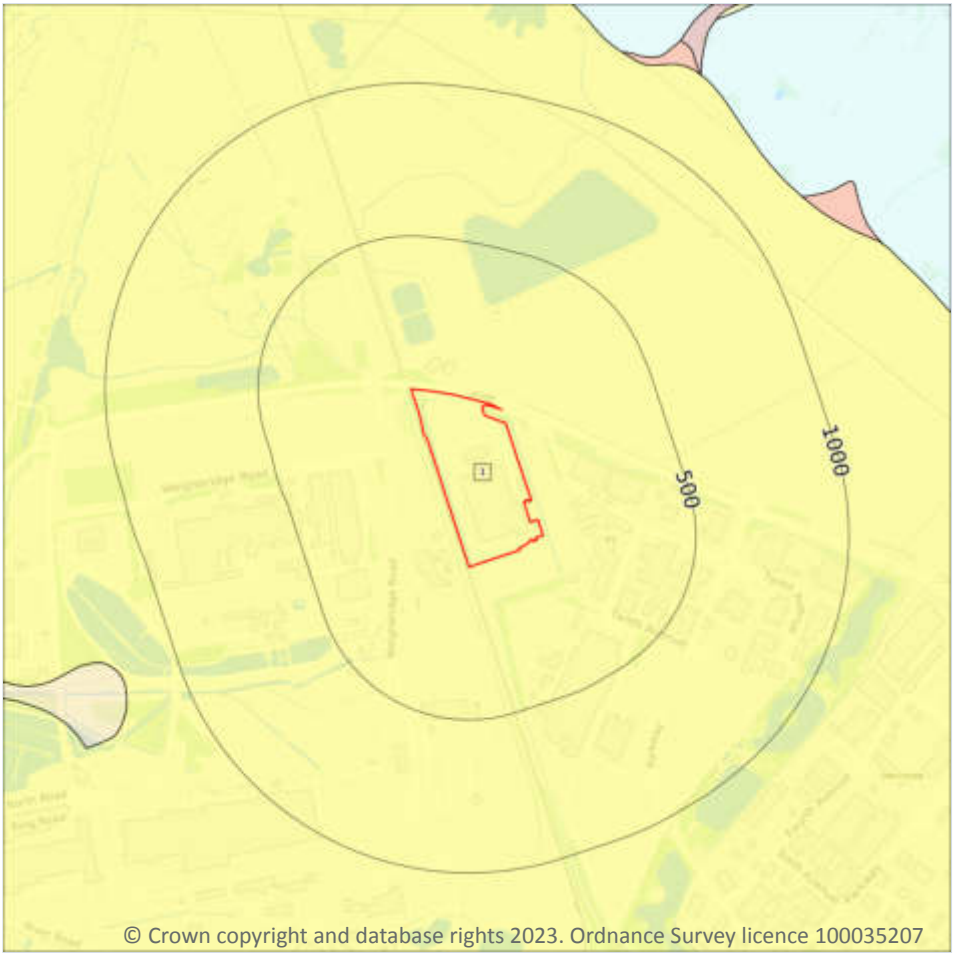
Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any artificial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Mixed**	**Very High**	**Low**

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Superficial



Site Outline

Search buffers in metres (m)

Landslip (50k)

Superficial geology (50k)
Please see table for more details.

15.4 Superficial geology (50k)

Records within 500m	1

Superficial geological deposits at 1:50,000 scale. Also known as 'drift', these are the youngest geological deposits, formed during the Quaternary. They rest on older deposits or rocks referred to as bedrock.

Features are displayed on the Geology 1:50,000 scale - Superficial map on **page 114 >**

ID	Location	LEX Code	Description	Rock description
1	**On site**	**TFD-XCZS**	**TIDAL FLAT DEPOSITS**	**CLAY, SILT AND SAND**

This data is sourced from the British Geological Survey.

15.5 Superficial permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any superficial deposits (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**Moderate**	**Very Low**

This data is sourced from the British Geological Survey.

15.6 Landslip (50k)

Records within 500m	0

Mass movement deposits on BGS geological maps at 1:50,000 scale. Primarily superficial deposits that have moved down slope under gravity to form landslips. These affect bedrock, other superficial deposits and artificial ground.

This data is sourced from the British Geological Survey.

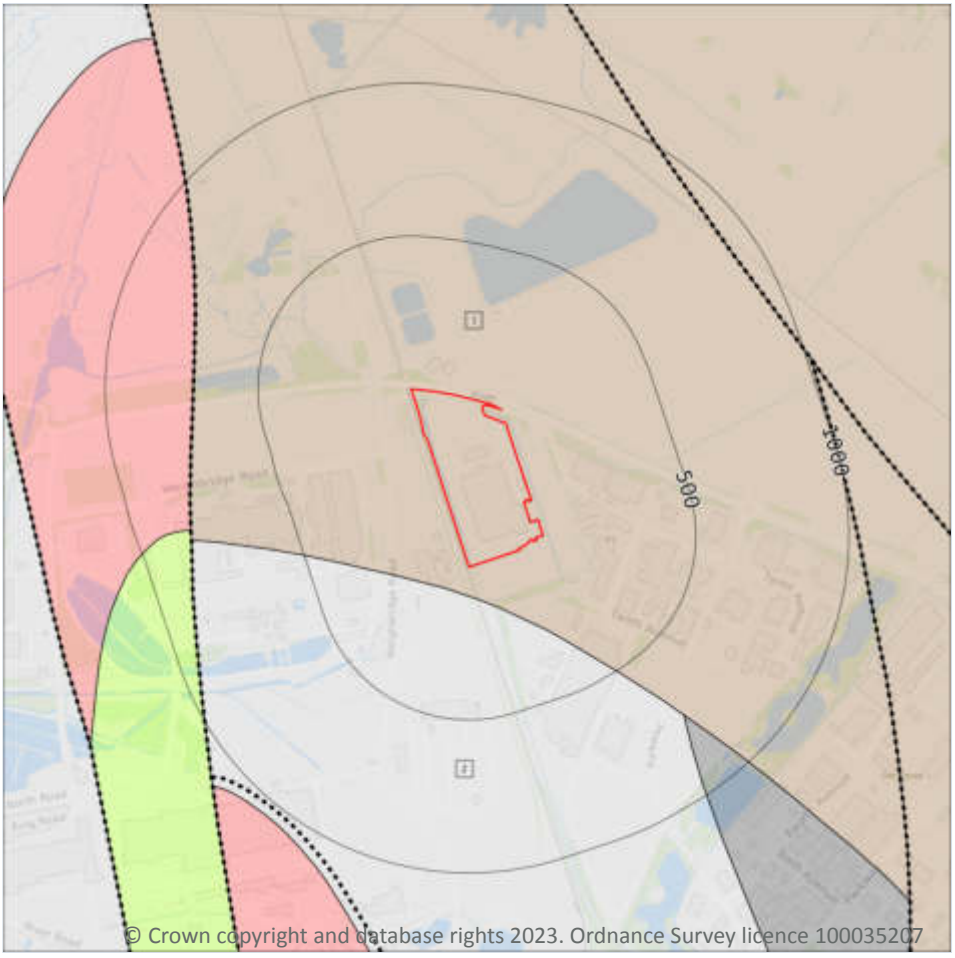
15.7 Landslip permeability (50k)

Records within 50m	0

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of any landslip deposits (the zone between the land surface and the water table).

This data is sourced from the British Geological Survey.

Geology 1:50,000 scale - Bedrock



Site Outline

Search buffers in metres (m)

Bedrock faults and other linear features (50k)

Bedrock geology (50k)
Please see table for more details.

15.8 Bedrock geology (50k)

Records within 500m **2**

Bedrock geology at 1:50,000 scale. The main mass of rocks forming the Earth and present everywhere, whether exposed at the surface in outcrops or concealed beneath superficial deposits or water.

Features are displayed on the Geology 1:50,000 scale - Bedrock map on **page 116 >**

ID	Location	LEX Code	Description	Rock age
1	**On site**	**KNSF-SDST**	**KINNERTON SANDSTONE FORMATION - SANDSTONE**	**-**
2	91m S	PLCM-MDSS	PENNINE LOWER COAL MEASURES FORMATION - MUDSTONE, SILTSTONE AND SANDSTONE	WESTPHALIAN

This data is sourced from the British Geological Survey.

15.9 Bedrock permeability (50k)

Records within 50m	1

A qualitative classification of estimated rates of vertical movement of water from the ground surface through the unsaturated zone of bedrock (the zone between the land surface and the water table).

Location	Flow type	Maximum permeability	Minimum permeability
On site	**Intergranular**	**High**	**High**

This data is sourced from the British Geological Survey.

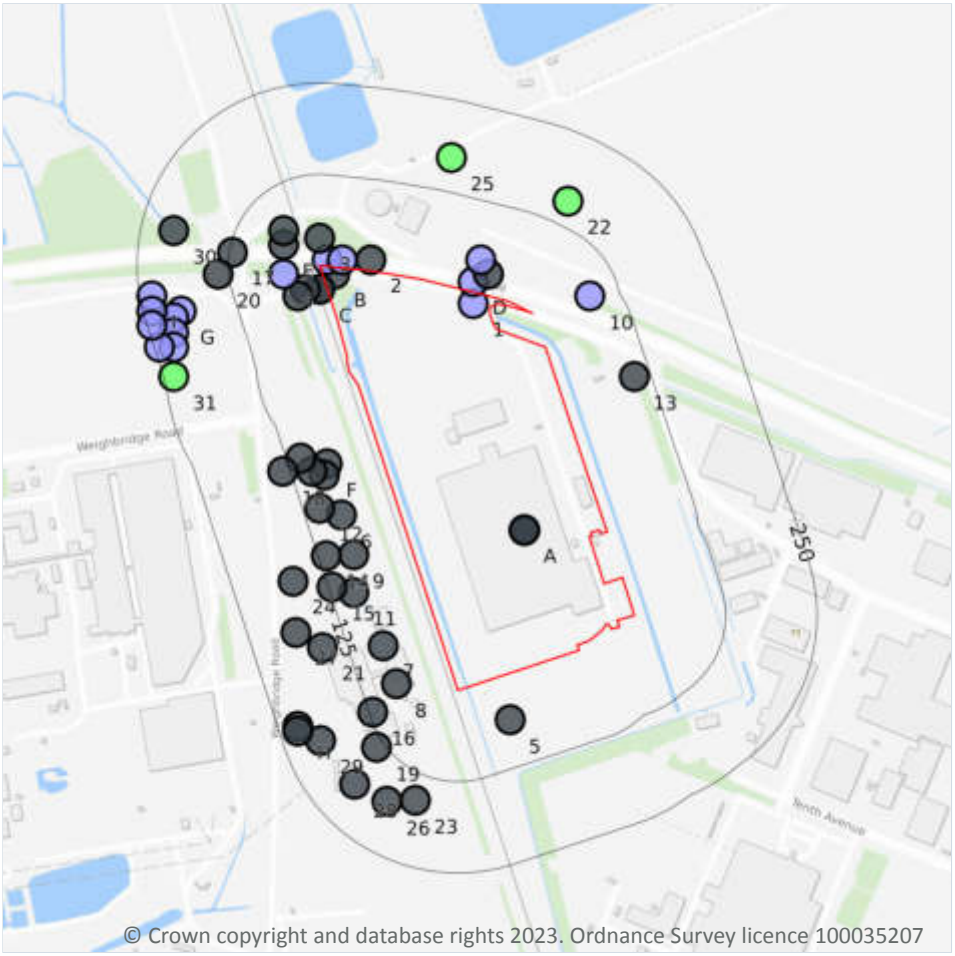
15.10 Bedrock faults and other linear features (50k)

Records within 500m	0

Linear features at the ground or bedrock surface at 1:50,000 scale of six main types; rock, fault, fold axis, mineral vein, alteration area or landform. Features are either observed or inferred, and relate primarily to bedrock.

This data is sourced from the British Geological Survey.

16 Boreholes



Site Outline

Search buffers in metres (m)

Confidential

0 - 10m

10 - 30m

30m+

Unknown

16.1 BGS Boreholes

Records within 250m	86

The Single Onshore Boreholes Index (SOBI); an index of over one million records of boreholes, shafts and wells from all forms of drilling and site investigation work held by the British Geological Survey. Covering onshore and nearshore boreholes dating back to at least 1790 and ranging from one to several thousand metres deep.

Features are displayed on the Boreholes map on **page 118 >**

ID	Location	Grid reference	Name	Length	Confidential	Web link
1	On site	331230 372010	750MM MICKLE TRAFFORD TO DEESIDE PIPELINE 48	8.0	N	157675 ↗
A	On site	331300 371700	LINK 56 DEESIDE TP4	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
A	On site	331300 371700	LINK 56 DEESIDE TP7	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP9	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP12	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE B	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P4	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P7	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP3	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP5	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP13	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE C	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE F	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P3	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P5	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P8	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP2	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE D	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P2	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP1	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP6	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP8	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP10	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE A	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE E	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P6	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP11	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE TP3A	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P1	-	Y	N/A
A	On site	331300 371700	LINK 56 DEESIDE P9	-	Y	N/A

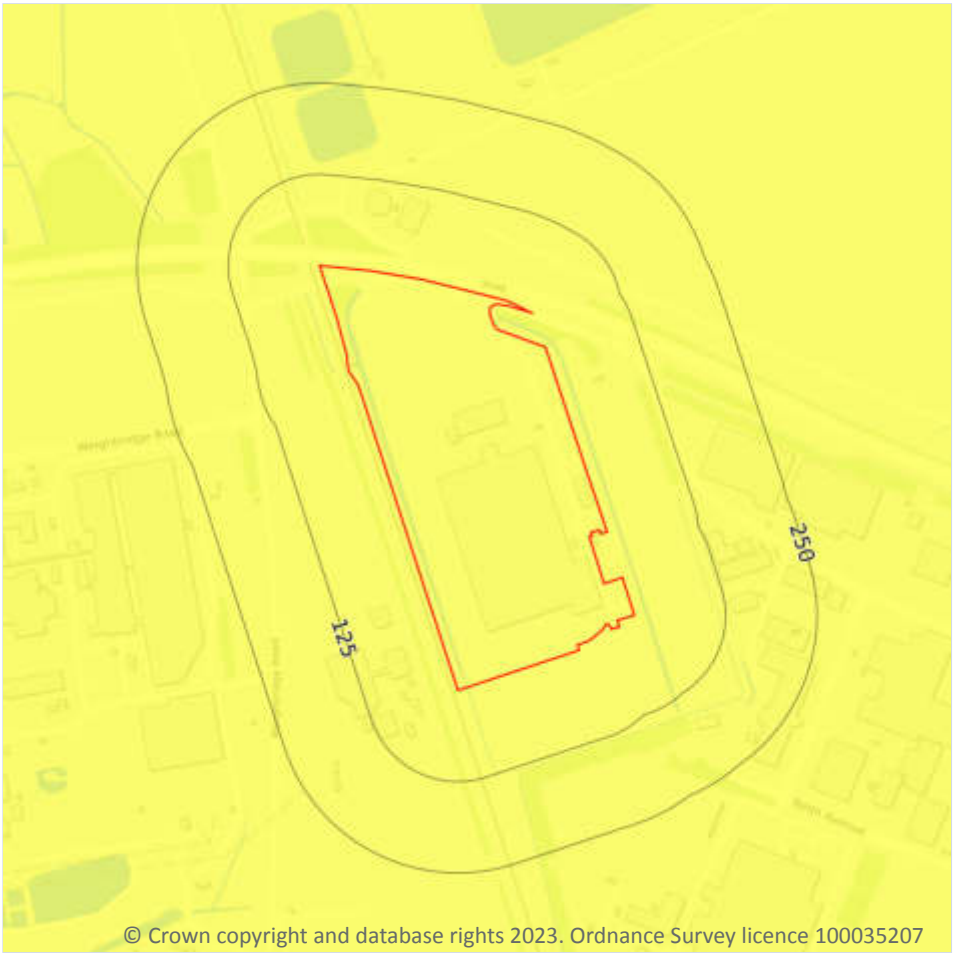
ID	Location	Grid reference	Name	Length	Confidential	Web link
B	**On site**	**331040 372050**	**DEESIDE ROAD LINK/RAIL CROSSING. 4**	**-**	**Y**	**N/A**
B	9m NW	331030 372070	750MM MICKLE TRAFFORD TO DEESIDE PIPELINE 50	8.0	N	157677 ↗
C	9m NW	331020 372030	DEE COASTAL PATH PHASE 2B 2	-	Y	N/A
C	9m NW	331020 372030	DEE COASTAL PATH PHASE 2B 3	-	Y	N/A
B	11m NW	331050 372070	750MM MICKLE TRAFFORD TO DEESIDE PIPELINE 49	8.0	N	157676 ↗
D	14m N	331230 372040	750MM MICKLE TRAFFORD TO DEESIDE PIPELINE 47	8.05	N	157674 ↗
2	15m NW	331090 372070	DEESIDE ROAD LINK/RAIL CROSSING. 5	-	Y	N/A
C	29m NW	331000 372030	DEE COASTAL PATH PHASE 2B 1	-	Y	N/A
D	29m N	331250 372050	DEESIDE ROAD LINK/RAIL CROSSING. 6	-	Y	N/A
3	38m NW	331020 372100	DEESIDE ROAD LINK/RAIL CROSSING. 3	-	Y	N/A
C	41m NW	330990 372020	DEE COASTAL PATH PHASE 2B 4	-	Y	N/A
D	46m N	331240 372070	750MM MICKLE TRAFFORD TO DEESIDE PIPELINE 46	8.0	N	157673 ↗
4	51m NW	330970 372050	750MM MICKLE TRAFFORD TO DEESIDE PIPELINE 52	8.0	N	157678 ↗
E	57m NW	330970 372090	DEESIDE ROAD LINK/RAIL CROSSING. 2	-	Y	N/A
5	61m S	331280 371440	SHOTTON S.I. 7	-	Y	N/A
E	69m NW	330970 372110	DEESIDE ROAD LINK/RAIL CROSSING. 1	-	Y	N/A
F	74m W	331030 371790	Deeside Waste Facility TP2	-	Y	N/A
6	78m W	331049 371720	Deeside Waste Facility TP5	-	Y	N/A
7	78m SW	331107 371542	Deeside Waste Facility BH110	-	Y	N/A
8	78m S	331124 371489	Deeside Waste Facility TP9	-	Y	N/A
9	78m SW	331066 371666	Deeside Waste Facility BH109	-	Y	N/A
F	82m W	331026 371775	Deeside Waste Facility BH108	-	Y	N/A
10	85m NE	331390 372020	750MM MICKLE TRAFFORD TO DEESIDE PIPELINE HA12	2.1	N	157689 ↗
11	94m SW	331066 371614	Deeside Waste Facility TP6	-	Y	N/A
F	97m W	331009 371780	Deeside Waste Facility HP1	-	Y	N/A

ID	Location	Grid reference	Name	Length	Confidential	Web link
12	102m W	331020 371730	Deeside Waste Facility TP3	-	Y	N/A
13	103m NE	331450 371910	SHOTTON S.I. 4	-	Y	N/A
F	106m W	330993 371799	Deeside Waste Facility TP1	-	Y	N/A
14	114m SW	331029 371665	Deeside Waste Facility TP4	-	Y	N/A
15	119m SW	331037 371622	Deeside Waste Facility BH101	-	Y	N/A
16	120m SW	331092 371451	Deeside Waste Facility BTP1	-	Y	N/A
17	121m NW	330900 372080	DEESIDE ROAD LINK/RAIL CROSSING. 7	-	Y	N/A
18	135m W	330969 371780	Deeside Waste Facility BH103	-	Y	N/A
19	136m S	331098 371402	Deeside Waste Facility TP11	-	Y	N/A
20	140m NW	330880 372050	DEESIDE ROAD LINK/RAIL CROSSING. 9	-	Y	N/A
21	158m SW	331024 371539	Deeside Waste Facility TP8	-	Y	N/A
22	159m N	331360 372150	LAND RECLAMATION 7	15.0	N	157504 ↗
23	162m S	331150 371330	Deeside Waste Facility BH107	-	Y	N/A
24	168m SW	330983 371630	Deeside Waste Facility BH104	-	Y	N/A
25	172m N	331200 372210	LAND RECLAMATION 8	15.0	N	157505 ↗
26	181m S	331112 371328	Deeside Waste Facility TP12	-	Y	N/A
27	186m SW	330987 371560	Deeside Waste Facility TP7	-	Y	N/A
28	191m S	331067 371352	Deeside Waste Facility BH106	-	Y	N/A
G	199m NW	330830 372000	DEESIDE INDUSTRIAL PARK PLOT A4 27	10.0	N	157668 ↗
29	200m SW	331021 371412	Deeside Waste Facility TP10	-	Y	N/A
30	205m NW	330820 372110	DEESIDE ROAD LINK/RAIL CROSSING. 8	-	Y	N/A
G	212m NW	330820 371990	DEESIDE INDUSTRIAL PARK PLOT A4 TP73	3.0	N	157635 ↗
G	218m NW	330820 371970	DEESIDE INDUSTRIAL PARK PLOT A4 TP60	3.0	N	157622 ↗
H	223m SW	330990 371431	Deeside Waste Facility BH105	-	Y	N/A
G	224m W	330820 371950	DEESIDE INDUSTRIAL PARK PLOT A4 TP53	3.0	N	157618 ↗
H	226m SW	330990 371424	Deeside Waste Facility BH105A	-	Y	N/A
I	233m NW	330790 372020	DEESIDE INDUSTRIAL PARK PLOT A4 TP81	3.0	N	157643 ↗
31	236m W	330820 371910	DEESIDE INDUSTRIAL PARK PLOT A4 15	10.5	N	157659 ↗

ID	Location	Grid reference	Name	Length	Confidential	Web link
I	238m NW	330790 372000	DEESIDE INDUSTRIAL PARK PLOT A4 TP72	3.0	N	157634 ↗
G	243m W	330800 371950	DEESIDE INDUSTRIAL PARK PLOT A4 TP52	3.0	N	157617 ↗
I	244m NW	330790 371980	DEESIDE INDUSTRIAL PARK PLOT A4 TP59	3.0	N	157621 ↗

This data is sourced from the British Geological Survey.

17 Natural ground subsidence - Shrink swell clays



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.1 Shrink swell clays

Records within 50m	1

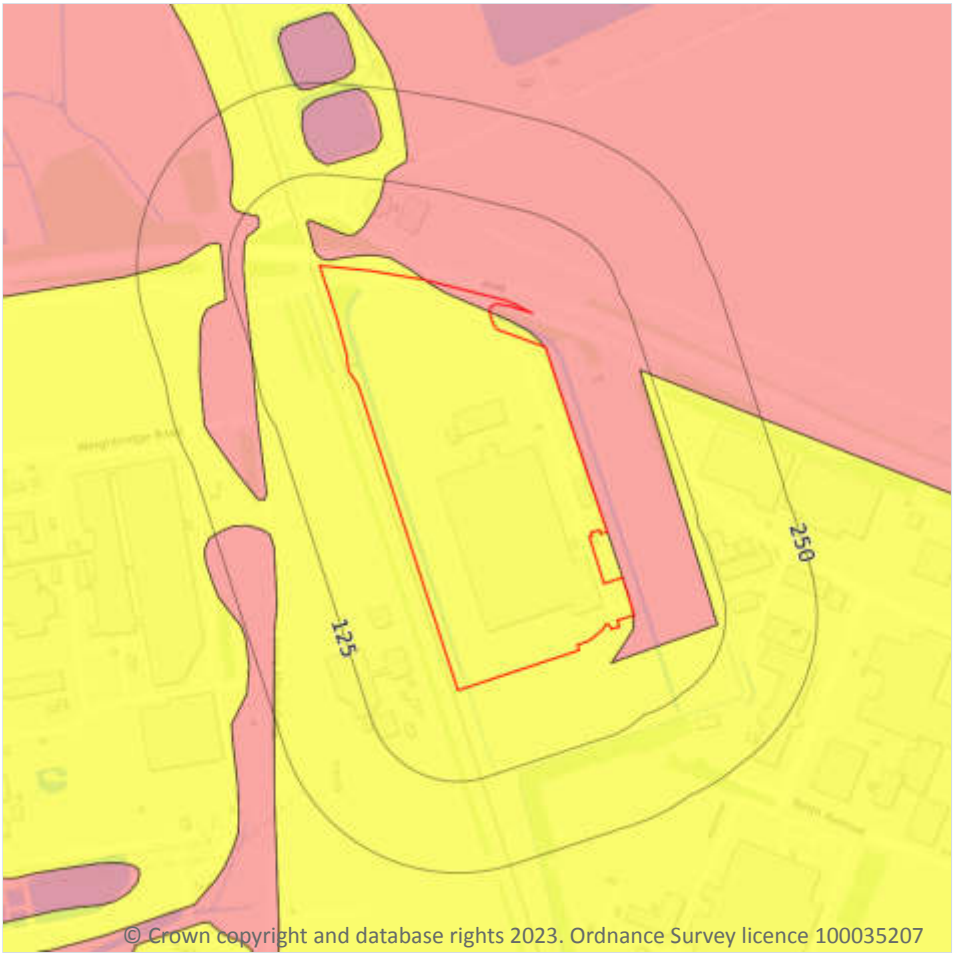
The potential hazard presented by soils that absorb water when wet (making them swell), and lose water as they dry (making them shrink). This shrink-swell behaviour is controlled by the type and amount of clay in the soil, and by seasonal changes in the soil moisture content (related to rainfall and local drainage).

Features are displayed on the Natural ground subsidence - Shrink swell clays map on **page 123 >**

Location	Hazard rating	Details
On site	**Very low**	**Ground conditions predominantly low plasticity.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Running sands



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.2 Running sands

Records within 50m	2

The potential hazard presented by rocks that can contain loosely-packed sandy layers that can become fluidised by water flowing through them. Such sands can 'run', removing support from overlying buildings and causing potential damage.

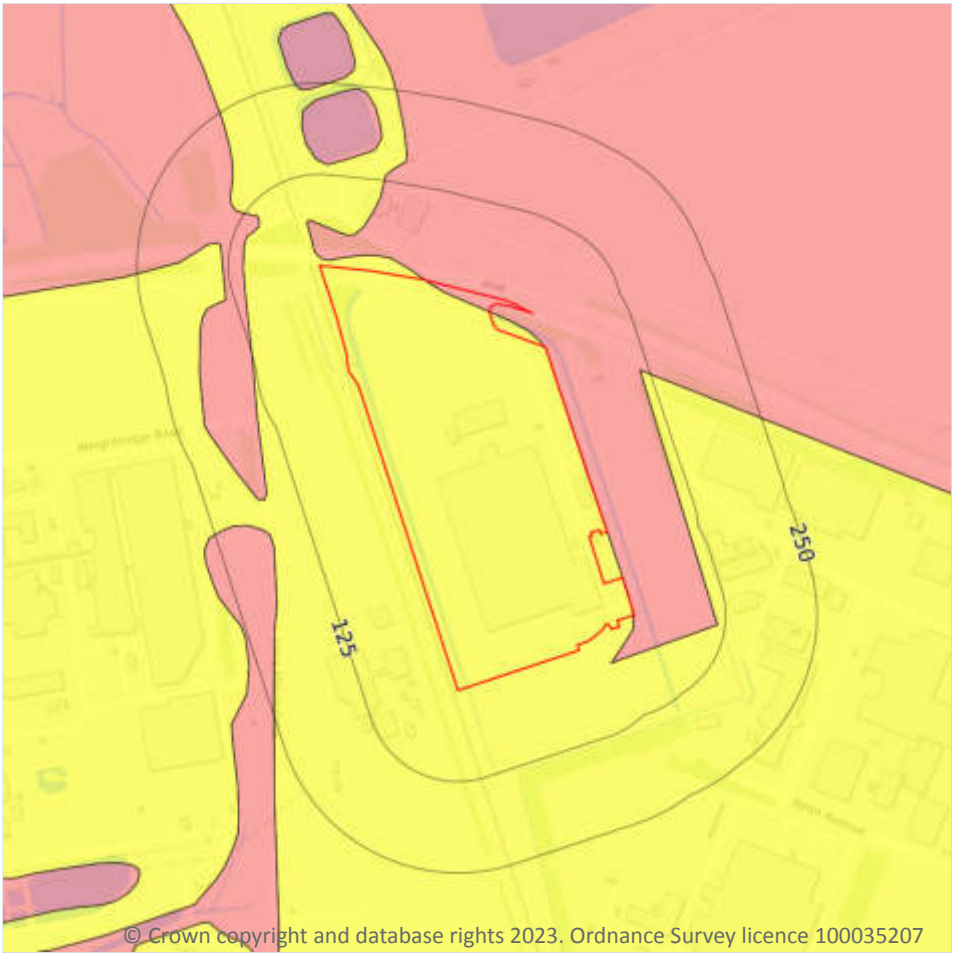
Features are displayed on the Natural ground subsidence - Running sands map on **page 124 >**

Location	Hazard rating	Details
On site	**Very low**	**Running sand conditions are unlikely. No identified constraints on land use due to running conditions unless water table rises rapidly.**

Location	Hazard rating	Details
On site	**Moderate**	**Running sand conditions are probably present. Constraints may apply to land uses involving excavation or the addition or removal of water.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Compressible deposits



Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.3 Compressible deposits

Records within 50m	2

The potential hazard presented by types of ground that may contain layers of very soft materials like clay or peat and may compress if loaded by overlying structures, or if the groundwater level changes, potentially resulting in depression of the ground and disturbance of foundations.

Features are displayed on the Natural ground subsidence - Compressible deposits map on **page 126 >**

Location	Hazard rating	Details
On site	**Very low**	**Compressibility and uneven settlement problems are not likely to be significant on the site for most land uses.**

Location	Hazard rating	Details
On site	**Moderate**	**Compressibility and uneven settlement hazards are probably present. Land use should consider specifically the compressibility and variability of the site.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Collapsible deposits

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.4 Collapsible deposits

Records within 50m	**1**

The potential hazard presented by natural deposits that could collapse when a load (such as a building) is placed on them or they become saturated with water.

Features are displayed on the Natural ground subsidence - Collapsible deposits map on **page 128 >**

Location	Hazard rating	Details
On site	**Negligible**	**Deposits with potential to collapse when loaded and saturated are believed not to be present.**

This data is sourced from the British Geological Survey.

Natural ground subsidence - Landslides

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.5 Landslides

Records within 50m	4

The potential for landsliding (slope instability) to be a hazard assessed using 1:50,000 scale digital maps of superficial and bedrock deposits, combined with information from the BGS National Landslide Database and scientific and engineering reports.

Features are displayed on the Natural ground subsidence - Landslides map on **page 129 >**

Location	Hazard rating	Details
On site	**Very low**	**Slope instability problems are not likely to occur but consideration to potential problems of adjacent areas impacting on the site should always be considered.**

Location	Hazard rating	Details
On site	**Low**	**Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.**
13m NW	Moderate	Slope instability problems are probably present or have occurred in the past. Land use should consider specifically the stability of the site.
39m N	Low	Slope instability problems may be present or anticipated. Site investigation should consider specifically the slope stability of the site.

This data is sourced from the British Geological Survey.

Natural ground subsidence - Ground dissolution of soluble rocks

Site Outline

Search buffers in metres (m)

- No data
- Negligible
- Very low
- Low
- Moderate
- High

17.6 Ground dissolution of soluble rocks

Records within 50m	1

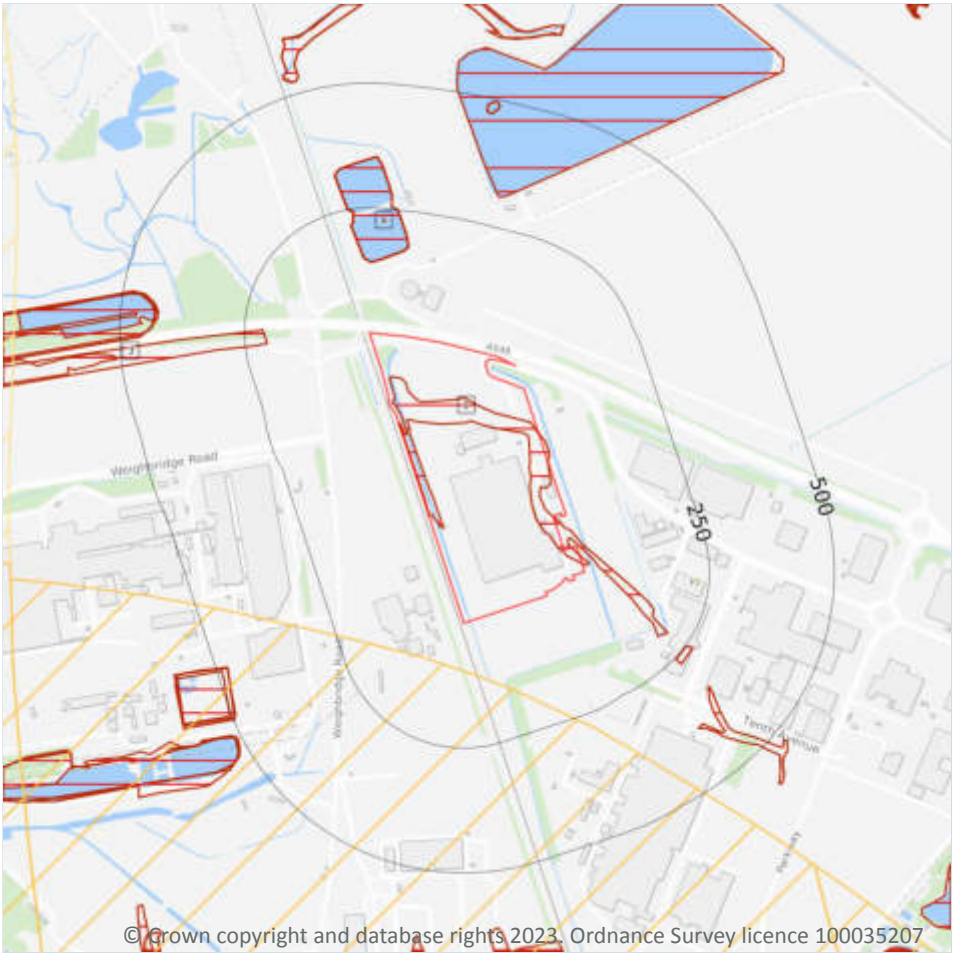
The potential hazard presented by ground dissolution, which occurs when water passing through soluble rocks produces underground cavities and cave systems. These cavities reduce support to the ground above and can cause localised collapse of the overlying rocks and deposits.

Features are displayed on the Natural ground subsidence - Ground dissolution of soluble rocks map on **page 131 >**

Location	Hazard rating	Details
On site	**Negligible**	**Soluble rocks are either not thought to be present within the ground, or not prone to dissolution. Dissolution features are unlikely to be present.**

This data is sourced from the British Geological Survey.

18 Mining and ground workings



Site Outline

Search buffers in metres (m)

- BritPits
- Surface ground workings
- Underground workings
- Underground mining extents
- Historical mineral planning areas
- TCA non-coal mining

Non Coal Mining

- Sporadic underground mining of restricted extent possible
- Localised small scale underground mining possible
- Small scale mining possible
- Underground mining known or likely within or in close proximity
- Underground mining known within or in very close proximity

18.1 BritPits

Records within 500m	0

BritPits (an abbreviation of British Pits) is a database maintained by the British Geological Survey of currently active and closed surface and underground mineral workings. Details of major mineral handling sites, such as wharfs and rail depots are also held in the database.

This data is sourced from the British Geological Survey.

18.2 Surface ground workings

Records within 250m	6

Historical land uses identified from Ordnance Survey mapping that involved ground excavation at the surface. These features may or may not have been subsequently backfilled.

Features are displayed on the Mining and ground workings map on **page 133 >**

ID	Location	Land Use	Year of mapping	Mapping scale
1	**On site**	**Water Body**	**1938**	**1:10560**
A	141m NW	Ponds	1992	1:10000
A	141m NW	Ponds	1981	1:10000
A	141m NW	Ponds	1960	1:10560
A	141m NW	Ponds	1969	1:10560
3	206m NW	Unspecified Pit	1992	1:10000

This is data is sourced from Ordnance Survey/Groundsure.

18.3 Underground workings

Records within 1000m	2

Historical land uses identified from Ordnance Survey mapping that indicate the presence of underground workings e.g. mine shafts.

Features are displayed on the Mining and ground workings map on **page 133 >**

ID	Location	Land Use	Year of mapping	Mapping scale
-	893m SW	Unspecified Workings	1960	1:10560
-	893m SW	Unspecified Workings	1969	1:10560

This is data is sourced from Ordnance Survey/Groundsure.

18.4 Underground mining extents

Records within 500m	0

This data identifies underground mine workings that could present a potential risk, including adits and seam workings. These features have been identified from BGS Geological mapping and mine plans sourced from the BGS and various collections and sources.

This data is sourced from Groundsure.

18.5 Historical Mineral Planning Areas

Records within 500m	0

Boundaries of mineral planning permissions for England and Wales. This data was collated between the 1940s (and retrospectively to the 1930s) and the mid 1980s. The data includes permitted, withdrawn and refused permissions.

This data is sourced from the British Geological Survey.

18.6 Non-coal mining

Records within 1000m	4

The potential for historical non-coal mining to have affected an area. The assessment is drawn from expert knowledge and literature in addition to the digital geological map of Britain. Mineral commodities may be divided into seven general categories - vein minerals, chalk, oil shale, building stone, bedded ores, evaporites and 'other' commodities (including ball clay, jet, black marble, graphite and chert).

Features are displayed on the Mining and ground workings map on **page 133 >**

ID	Location	Name	Commodity	Class	Likelihood
2	91m S	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
10	711m W	Not available	Vein Mineral	A	Underground mine workings are uncommon, although the geology is similar to that worked elsewhere. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
11	746m SE	Not available	Iron Ore (Bedded)	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.
12	823m W	Not available	Vein Mineral	B	Underground mine workings may have occurred in the past or current mines may be working at significant depth to modern engineering standards. Potential for difficult ground conditions are unlikely and are at a level where they need not be considered.

This data is sourced from the British Geological Survey.

18.7 JPB mining areas

Records on site	0

Areas which could be affected by former coal and other mining. This data includes some mine plans unavailable to the Coal Authority.

This data is sourced from Johnson Poole and Bloomer.

18.8 The Coal Authority non-coal mining

Records within 500m	0

This data provides an indication of the potential zone of influence of recorded underground non-coal mining workings. Any and all analysis and interpretation of Coal Authority Data in this report is made by Groundsure, and is in no way supported, endorsed or authorised by the Coal Authority. The use of the data is restricted to the terms and provisions contained in this report. Data reproduced in this report may be the copyright of the Coal Authority and permission should be sought from Groundsure prior to any re-use.

This data is sourced from The Coal Authority.

18.9 Researched mining

Records within 500m	0

This data indicates areas of potential mining identified from alternative or archival sources, including; BGS Geological paper maps, Lidar data, aerial photographs (from World War II onwards), archaeological data services, websites, Tithe maps, and various text/plans from collected books and reports. Some of this data is approximate and Groundsure have interpreted the resultant risk area and, where possible, specific areas of risk have been captured.

This data is sourced from Groundsure.

18.10 Mining record office plans

Records within 500m	0

This dataset is representative of Mining Record Office and/or plan extents held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.11 BGS mine plans

Records within 500m	0

This dataset is representative of BGS mine plans held by Groundsure and should be considered approximate. Where possible, plans have been located and any specific areas of risk they depict have been captured.

This data is sourced from Groundsure.

18.12 Coal mining

Records on site	0

Areas which could be affected by past, current or future coal mining.

This data is sourced from the Coal Authority.

18.13 Brine areas

Records on site	0

The Cheshire Brine Compensation District indicates areas that may be affected by salt and brine extraction in Cheshire and where compensation would be available where damage from this mining has occurred. Damage from salt and brine mining can still occur outside this district, but no compensation will be available.

This data is sourced from the Cheshire Brine Subsidence Compensation Board.

18.14 Gypsum areas

Records on site	0

Generalised areas that may be affected by gypsum extraction.

This data is sourced from British Gypsum.

18.15 Tin mining

Records on site	0

Generalised areas that may be affected by historical tin mining.

This data is sourced from Groundsure.

18.16 Clay mining

Records on site	0

Generalised areas that may be affected by kaolin and ball clay extraction.

This data is sourced from the Kaolin and Ball Clay Association (UK).

19 Ground cavities and sinkholes

19.1 Natural cavities

Records within 500m	0

Industry recognised national database of natural cavities. Sinkholes and caves are formed by the dissolution of soluble rock, such as chalk and limestone, gulls and fissures by cambering. Ground instability can result from movement of loose material contained within these cavities, often triggered by water.

This data is sourced from Stantec UK Ltd.

19.2 Mining cavities

Records within 1000m	0

Industry recognised national database of mining cavities. Degraded mines may result in hazardous subsidence (crown holes). Climatic conditions and water escape can also trigger subsidence over mine entrances and workings.

This data is sourced from Stantec UK Ltd.

19.3 Reported recent incidents

Records within 500m	0

This data identifies sinkhole information gathered from media reports and Groundsure's own records. This data goes back to 2014 and includes relative accuracy ratings for each event and links to the original data sources. The data is updated on a regular basis and should not be considered a comprehensive catalogue of all sinkhole events. The absence of data in this database does not mean a sinkhole definitely has not occurred during this time.

This data is sourced from Groundsure.

19.4 Historical incidents

Records within 500m	0

This dataset comprises an extract of 1:10,560, 1:10,000, 1:2,500 and 1:1,250 scale historical Ordnance Survey maps held by Groundsure, dating back to the 1840s. It shows shakeholes, deneholes and other 'holes' as noted on these maps. Dene holes are medieval chalk extraction pits, usually comprising a narrow shaft with a number of chambers at the base of the shaft. Shakeholes are an alternative name for suffusion sinkholes, most commonly found in the limestone landscapes of North Yorkshire but also extensively noted around the Brecon Beacons National Park.

Not all 'holes' noted on Ordnance Survey mapping will necessarily be present within this dataset.

This data is sourced from Groundsure.

19.5 National karst database

Records within 500m	0

This is a comprehensive database of national karst information gathered from a wide range of sources. BGS have collected data on five main types of karst feature: Sinkholes, stream links, caves, springs, and incidences of associated damage to buildings, roads, bridges and other engineered works.

Since the database was set up in 2002 data covering most of the evaporite karst areas of the UK have now been added, along with data covering about 60% of the Chalk, and 35% of the Carboniferous Limestone outcrops. Many of the classic upland karst areas have yet to be included. Recorded so far are: Over 800 caves, 1300 stream sinks, 5600 springs, 10,000 sinkholes.

The database is not yet complete, and not all records have been verified. The absence of data does not mean that karst features are not present at a site. A reliability rating is included with each record.

This data is sourced from the British Geological Survey.

20 Radon

Site Outline

Search buffers in metres (m)

- Greater than 30%
- Between 10% and 30%
- Between 5% and 10%
- Between 3% and 5%
- Between 1% and 3%
- Less than 1%

20.1 Radon

Records on site	1

The Radon Potential data classifies areas based on their likelihood of a property having a radon level at or above the Action Level in Great Britain. The dataset is intended for use at 1:50,000 scale and was derived from both geological assessments and indoor radon measurements (more than 560,000 records). A minimum 50m buffer should be considered when searching the maps, as the smallest detectable feature at this scale is 50m. The findings of this section should supersede any estimations derived from the Indicative Atlas of Radon in Great Britain (1:100,000 scale).

Features are displayed on the Radon map on **page 141 >**

Location	Estimated properties affected	Radon Protection Measures required
On site	**Less than 1%**	**None**

This data is sourced from the British Geological Survey and UK Health Security Agency.

21 Soil chemistry

21.1 BGS Estimated Background Soil Chemistry

Records within 50m	**8**

The estimated values provide the likely background concentration of the potentially harmful elements Arsenic, Cadmium, Chromium, Lead and Nickel in topsoil. The values are estimated primarily from rural topsoil data collected at a sample density of approximately 1 per 2 km^2. In areas where rural soil samples are not available, estimation is based on stream sediment data collected from small streams at a sampling density of 1 per 2.5 km^2; this is the case for most of Scotland, Wales and southern England. The stream sediment data are converted to soil-equivalent concentrations prior to the estimation.

Location	Arsenic	Bioaccessible Arsenic	Lead	Bioaccessible Lead	Cadmium	Chromium	Nickel
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**20 - 40 mg/kg**	**15 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**20 - 40 mg/kg**	**15 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**20 - 40 mg/kg**	**15 mg/kg**
On site	**15 mg/kg**	**No data**	**100 mg/kg**	**60 mg/kg**	**1.8 mg/kg**	**20 - 40 mg/kg**	**15 mg/kg**
20m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	20 - 40 mg/kg	15 mg/kg
38m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	20 - 40 mg/kg	15 mg/kg
38m NW	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	20 - 40 mg/kg	15 mg/kg
50m SE	15 mg/kg	No data	100 mg/kg	60 mg/kg	1.8 mg/kg	20 - 40 mg/kg	15 mg/kg

This data is sourced from the British Geological Survey.

21.2 BGS Estimated Urban Soil Chemistry

Records within 50m	**0**

Estimated topsoil chemistry of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc and bioaccessible Arsenic and Lead in 23 urban centres across Great Britain. These estimates are derived from interpolation of the measured urban topsoil data referred to above and provide information across each city between the measured sample locations (4 per km^2).

This data is sourced from the British Geological Survey.

21.3 BGS Measured Urban Soil Chemistry

Records within 50m	0

The locations and measured total concentrations (mg/kg) of Arsenic, Cadmium, Chromium, Copper, Nickel, Lead, Tin and Zinc in urban topsoil samples from 23 urban centres across Great Britain. These are collected at a sample density of 4 per km^2.

This data is sourced from the British Geological Survey.

22 Railway infrastructure and projects

Site Outline

Search buffers in metres (m)

- Crossrail 1 Stations
- Crossrail 1 Route
- Crossrail 2 Stations
- Crossrail 2 Route
- Crossrail 2 Worksites
- Crossrail 2 Safeguarding
- Crossrail 2 Headhouses
- Railway stations
- Active railways
- Active tunnels
- Abandoned railways
- Historic railways
- Historic tunnels
- Underground stations
- Underground Lines
- Royal Mail tunnels
- HS2 optimised route
- HS2 Stations
- HS2 Depots
- HS2 Surface Safeguarding
- HS2 Subsurface Safeguarding

22.1 Underground railways (London)

Records within 250m	0

Details of all active London Underground lines, including approximate tunnel roof depth and operational hours.

This data is sourced from publicly available information by Groundsure.

22.2 Underground railways (Non-London)

Records within 250m	0

Details of the Merseyrail system, the Tyne and Wear Metro and the Glasgow Subway. Not all parts of all systems are located underground. The data contains location information only and does not include a depth assessment.

This data is sourced from publicly available information by Groundsure.

22.3 Railway tunnels

Records within 250m	0

Railway tunnels taken from contemporary Ordnance Survey mapping.

This data is sourced from the Ordnance Survey.

22.4 Historical railway and tunnel features

Records within 250m	24

Railways and tunnels digitised from historical Ordnance Survey mapping as scales of 1:1,250, 1:2,500, 1:10,000 and 1:10,560.

Features are displayed on the Railway infrastructure and projects map on **page 145 >**

Location	Land Use	Year of mapping	Mapping scale
On site	**Railway Sidings**	**1994**	**2500**
On site	**Railway Sidings**	**1963**	**2500**
On site	**Railway Sidings**	**1983**	**2500**
On site	**Railway Sidings**	**1991**	**2500**
On site	**Railway Sidings**	**1984**	**2500**
On site	**Railway Sidings**	**1992**	**2500**
On site	**Railway Sidings**	**1997**	**2500**
On site	**Railway Sidings**	**1981**	**10000**
On site	**Railway Sidings**	**1960**	**10560**
On site	**Railway Sidings**	**1969**	**10560**
On site	**Railway Sidings**	**1992**	**10000**
25m SW	Railway Sidings	1963	2500
31m S	Railway Sidings	1978	2500
42m S	Railway Sidings	1978	2500
43m S	Railway Sidings	1963	2500
53m NW	Railway Sidings	1963	2500
60m NW	Railway Sidings	1978	2500

Location	Land Use	Year of mapping	Mapping scale
176m NW	Railway Sidings	1963	2500
178m NW	Railway Sidings	1983	2500
179m NW	Railway Sidings	1991	2500
198m NW	Railway Sidings	1963	2500
217m SW	Railway Sidings	1978	2500
233m W	Railway Sidings	1978	2500
233m NW	Railway Sidings	1963	2500

This data is sourced from Ordnance Survey/Groundsure.

22.5 Royal Mail tunnels

Records within 250m	0

The Post Office Railway, otherwise known as the Mail Rail, is an underground railway running through Central London from Paddington Head District Sorting Office to Whitechapel Eastern Head Sorting Office. The line is 10.5km long. The data includes details of the full extent of the tunnels, the depth of the tunnel, and the depth to track level.

This data is sourced from Groundsure/the Postal Museum.

22.6 Historical railways

Records within 250m	1

Former railway lines, including dismantled lines, abandoned lines, disused lines, historic railways and razed lines.

Features are displayed on the Railway infrastructure and projects map on **page 145 >**

Location	Description
152m S	Disused

This data is sourced from OpenStreetMap.

22.7 Railways

Records within 250m	17

Currently existing railway lines, including standard railways, narrow gauge, funicular, trams and light railways.

Features are displayed on the Railway infrastructure and projects map on **page 145 >**

Location	Name	Type
3m NW		rail
4m NW	Not given	Multi Track
5m NW	Not given	Multi Track
7m NW		rail
10m NW		rail
14m S	Not given	Single Track
15m NW		rail
37m NW	Not given	Multi Track
72m NW		rail
72m NW		rail
88m NW		rail
89m NW		rail
129m NW	Shotwick Paper Company's Sidings	rail
129m NW	Shotwick Paper Company's Sidings	rail
131m NW	Shotwick Paper Company's Sidings	rail
209m S	Not given	Multi Track
247m W	Shotwick Paper Company's Sidings - Disconnected	rail

This data is sourced from Ordnance Survey and OpenStreetMap.

22.8 Crossrail 1

Records within 500m	0

The Crossrail railway project links 41 stations over 100 kilometres from Reading and Heathrow in the west, through underground sections in central London, to Shenfield and Abbey Wood in the east.

This data is sourced from publicly available information by Groundsure.

22.9 Crossrail 2

Records within 500m	0

Crossrail 2 is a proposed railway linking the national rail networks in Surrey and Hertfordshire via an underground tunnel through London.

This data is sourced from publicly available information by Groundsure.

22.10 HS2

Records within 500m	0

HS2 is a proposed high speed rail network running from London to Manchester and Leeds via Birmingham. Main civils construction on Phase 1 (London to Birmingham) of the project began in 2019, and it is currently anticipated that this phase will be fully operational by 2026. Construction on Phase 2a (Birmingham to Crewe) is anticipated to commence in 2021, with the service fully operational by 2027. Construction on Phase 2b (Crewe to Manchester and Birmingham to Leeds) is scheduled to begin in 2023 and be operational by 2033.

This data is sourced from HS2 ltd.

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CREATING PLACES / FOR FUTURE GENERATIONS TO THRIVE

Phase II Site Appraisal

10579 – Great Bear, Link 56
Deeside

for

Legat Owen
GBD-PPC-00-XX-RP-G-0002

July 2023

PATRICK PARSONS

Phase II Site Appraisal

10579 – Great Bear, Link 56

for

Legat Owen

Revision	Date of issue	Comments	Prepared By	Checked By
0	31.07.23	1st Issue	OMD	HA

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Summary of Recommendations for Great Bear, Deeside	
Risk to End-Users	No risk to end-users identified.
Risk to Controlled Waters	No risk to controlled waters identified.
Ground Gases	No significant sources identified the site is classified as Characteristic Situation 1 and no gas protection measures required. Subject to completed ground gas monitoring programme and final gas risk assessment.
Concrete Specification	GEN1 or RC25/30 concrete will be sufficient for buried concrete at the site.
Water Pipe Specification	PVC not PE pipes will be suitable (to be confirmed by utility provider).
Engineering Ground Treatment	N/A
Likely Foundation Types	Pad foundations will be suitable for the proposed commercial development.
Likely Foundation Depths	Min. 1.50m begl to provide an allowable bearing pressure of 150 kN/m^2. Foundations should be carried through any Made Ground, soft or loose natural deposits. The western foundations should be taken to a depth where the pressure bulb is not interacting with the adjacent slope and off-site drain.
Bearing Strata	Medium dense granular natural superficial soils.
Allowable Bearing Pressure	An allowable bearing pressure of 150 kN/m^2 within the underlying medium dense granular superficial soils for the proposed building.
Volume Change Potential	N/A site is underlain by granular soils.
Tree Influence	N/A site is underlain by granular soils.
Floor Slabs	Ground bearing floor slabs are potentially suitable subject to the requirement for gas protection measures.
Slope Stability Risk	A slope stability assessment may be required on the adjacent off-site slope to the west of the site. Any slope stability assessment should be undertaken by a suitably qualified engineer.
Retaining Walls	Small retaining structures may be required along the western boundary of the site. Any retaining structures should be designed by a suitably qualified engineer.
SUDs	Soakaway drainage strategy may be viable for the proposed development due to extensive thicknesses of natural granular soils across the site. However, the presence of shallow groundwater and leachable contaminants will preclude the use of soakaway drainage for the proposed development.
Roads	A design CBR value of between >10% should be used for design (subject to in-situ testing).
Likely Waste Classification	Soils will require disposal as non-hazardous waste to an inert landfill subject to confirmation from the receiving waste site.
Other Comments	None

The above summary should not be used in isolation and reference should be made the full report which provides a detailed assessment of the risks affecting the development.

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Contents

1.0 Introduction

1.1 Commission

Patrick Parsons (PP) have been appointed by Legat Owen (client) to produce a Phase II Site Appraisal for their site know as 'Great Bear, Deeside' herein referred to as 'the site'.

1.2 Proposed Development

It is understood that the site is to be developed to provide a 172,000sq ft commercial distribution building with associated yard and car park areas. A plan showing the general layout of the proposed development is in Appendix A.

1.3 Limitations

This report has been prepared for the client and their appointed agents only and should not be relied upon by any third party without the written permission of PP. If any unauthorised third party comes into possession of this report, they rely on it at their own risk and the authors do not owe them any Duty of Care or Skill. It is based on and limited to an assessment of the information and ground conditions identified here. PP is not responsible for ground conditions located between exploratory hole locations and not revealed during investigations.

1.4 Aim of Phase II Site Appraisal

The client's specific requirements were to undertake a Phase II Site Appraisal. The principal objectives are as follows:

- Obtain information about the soil and groundwater conditions within the area of the site;
- Determine the ground related geotechnical and contamination hazards within the site boundaries that may affect the proposed development;
- Define the Phase I conceptual site model and refine to form a Phase II conceptual site model;
- Provide development recommendations and provide advice on further works if required.

1.5 Information Sources

This Phase II Site Appraisal is based on the findings of the investigation, chemical analysis and geotechnical testing undertaken during the assessment. The results have been used to refine the conceptual model and initial recommendations outlined in the Phase I Site Appraisal report undertaken by PP (ref: GBD-PPC-00-XX-RP-G-0001, dated May 2023). The information included within this report helped to form the rationale for the design of this investigation.

2.0 Summary of Phase I Site Appraisal

The following is a summary of the findings of the Phase I Site Appraisal Report undertaken by PP in July 2023 and should not be read in isolation. For full details reference should be made to the report outlined in section 1.5.

- The site is a roughly rectangular shaped parcel of land covering 13.62ha that is bound by Weighbridge Road to the north and Deeside Industrial Park on the southern, western and eastern boundaries. The site is located approximately 10.6km north-west of Chester town centre located at OS grid reference 331237, 371779 and the nearest postcode is CH5 2LL;
- The site is occupied by two large rectangular shaped commercial / industrial units one occupying the southern half of the site, and the other located centrally. Large portions of the site are laid to tarmac or concrete hardstanding which are used as loading and parking areas for commercial vehicles. Undeveloped land occupies the northern third of the site, which is currently used as staff parking and storage. The site is predominantly a level gradient, however an off-site drain run along the western boundary of the site is noted, this drainage run is approximately 3.20m below the existing site level;
- The site has comprised an undeveloped marshland from 1869 up to the 1960s where commercial industrial development has been recorded. Slight infill development has occurred in the subsequent mapping;
- The site has been classified as low risk of UXO. As such no further mitigation measures are required;
- The site has been recorded to be covered by artificial deposits / Made Ground. As such, Made Ground should be expected across the site. The site is recorded to be underlain by Superficial Deposits of Tidal Flat Deposits overlying the bedrock geology of the Kinnerton Sandstone Formation;
- There are 6no. surface ground workings recorded within 250m of the site, the closest being a water body recorded on site in 1938. The remaining surface ground workings comprise ponds and an unspecified pit ranging between 141m northwest and 206m northwest from the site;
- There are 2no. records of underground workings within 1000m of the site, both are unspecified workings 893m southwest in 1960 and 1969;
- The site is not recorded within a Radon Affected Area and as such radon protection measures are not required for new properties on the site;
- The Superficial Deposits beneath the site are recorded to be a Secondary Undifferentiated Aquifer. The bedrock beneath the site is recorded to be a Principal Aquifer. The site is not located within a Source Protection Zone.
- There are 7no. records of groundwater abstractions within 2000m of the site, the closest being a historical record relating to pollution remediation 475m east of the site.
- There is 1no. recorded surface water abstraction within 2000m of the site. This record is 444m north of the site and is associated with spray irrigation.
- The are 11no. surface water features within 250m of the site, 5no. located on site relating to an inland river not influenced by normal tidal action.
- The eastern side of the site is recorded to be in a Flood Zone 2 and part of the northern boundary is recorded to be in a Flood Zone 3.
- There are no recorded LA historical landfill or EA/NRW landfill sites within 500m of the site. There are 2no. of historical waste record within 500m of the site. One is located on site relating to a recycling/recovery plant for municipal solid waste.

- There are 57no. waste exemption records within 500m of the site. There are 21no. of waste exemption records located on site, relating to burning waste in the open, treatment of waste wood and waste plant, storage of waste, deposit of agricultural waste, spreading waste on agricultural land and others.
- There are 24no. records of historical tanks within 500m of the site. There are 3no. of records of historical tanks recorded on site relating to unspecified tanks ranging from 1984 to 1997.
- There are 25no. records of recent or current industrial land use within 250m of the site. There are 6no. records on site relating to industrial coatings and finishings, new vehicles, catering and non-specific food products, office and shop equipment, industrial engineers and electrical features.
- There are 2no. licensed pollutant release (Part A(2)/B) records within 500m of the site. One record on site relates to respraying of road vehicles, whilst the other relates to engineering works located 393m SE.

3.0 Phase I Conceptual Model

3.1 Initial Conceptual Site Model and Preliminary Risk Assessment

The preceding desk study data and supplementary site investigation data has been assessed and a conceptual model produced in accordance with Land Contamination Risk Management (LCRM) guidance document. LCRM provides a technical framework for identifying and remediating contamination through the application of a risk management process. The CSM provides the relationship between the following three criteria:

- The presence of substances that may cause harm (source);
- The presence of a plausible pollutant linkage between the source and receptor (pathway);
- The presence of a receptor which may be harmed (receptor).

If all three criteria are present, or considered likely to be present at a site, they are identified as Potential Contaminant Linkages (PCLs). EA R&D66 (2008) includes a risk classification system based on classification of consequence and probability, as shown in the table below, associated with the identified PCLs.

		Severity of Consequence			
		Severe	**Medium**	**Mild**	**Minor**
Probability of pollutant linkage	**High Likelihood**	Very High risk	High risk	Moderate risk	Moderate/ Low risk
	Likely	High risk	Moderate risk	Moderate / Low risk	Low risk
	Low Likelihood	Moderate risk	Moderate / Low risk	Low risk	Very Low risk
	Unlikely	Moderate / Low risk	Low risk	Very Low risk	Very Low risk

The definitions of the risk terminology are taken from CIRIA report C552.

A pollutant linkage must be established before tests for probability and consequence are applied. If there is no pollutant linkage, then there is no potential risk and there is no need to apply tests for probability and consequence. The risk assessment needs to include a logical and transparent system to define categories of severity of consequence and probability of occurrence.

3.2 Preliminary Conceptual Site Model

A preliminary qualitative assessment of the identified PCLs and associated risk ratings was completed, and a summary is provided in the Table on the next page.

Source	Pathway	Receptor	Consequence	Probability	Risk Assessment and Justification
On-site sources – Made Ground on site associated with the industrial and commercial developments and industrial activity on site; general contaminants to include heavy metals, PAHs, TPHs and VOC/SVOCs. Asbestos containing materials (ACM) from fly tipping of ACMs cannot be discounted. **Offsite sources –** Made Ground surrounding the site relating to off-site commercial / industrial developments and infilled ponds. General contaminants to include heavy metals, PAHs, TPHs and asbestos.	Dermal contact, inhalation and ingestion of contaminants in soil and soil derived dust	Future site user/worker	Medium	Low Likelihood	**Low/Moderate Risk** – Made Ground expected to be present on-site. However, the proposed development of the site includes limited areas of soft landscaping which will be managed by the building management limiting the pathway between any potential contamination and end users.
		Site construction worker	Mild	Low Likelihood	**Low Risk** - Construction workers have a shorter exposure period and risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.
	Inhalation of volatile soil vapours and ground gas	Future site user/worker	Medium	Low Likelihood	**Low/Moderate Risk** – Expected deposits of Made Ground identified on site. Considered a low likelihood that the levels of volatile vapours and ground gases will be high enough to represent acute risks or lead to significant impact due to the cohesive nature of the Tidal Flat Deposits beneath the site.
		Site construction worker		Unlikely	**Low Risk** – On-site deposits of Made Ground typically comprising reworked natural soils. Considered unlikely that levels of volatile vapours and ground gases will be high enough to represent acute risks or lead to significant impact. However, construction workers have a shorter exposure period and risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.
	Inhalation of asbestos free fibres	Site user/worker	Severe	Low Likelihood	**Moderate Risk** –Asbestos is unlikely to be on-site due to the sites historical use. Asbestos including asbestos containing materials (ACMs) may also have been fly tipped or introduced on-site by windblown processes. However, the proposed development of the site includes very limited areas of soft landscaping which will be managed by the building management limiting the pathway between any potential contamination and end users.
		Site construction worker		Low Likelihood	**Moderate Risk** - Construction workers have a shorter exposure period and risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.
	Leaching of contaminants from soil and vertical migration into groundwater	Groundwater within superficial deposits (Secondary Undifferentiated Aquifer)	Mild	Likely	**Low/Moderate Risk:** Risk assessed as Low / moderate due to the low sensitivity of the shallow groundwater due to the site location within a predominantly commercial / industrial site setting where potable extractions are unlikely to be utilised in future.
		Surface Water Drain	Mild	Likely	**Low/Moderate Risk:** Risk assessed as Low / moderate due to the low sensitivity of the shallow groundwater due to the site location within a predominantly commercial / industrial site setting where surface water extractions are unlikely to be utilised in the future.
		Groundwater within bedrock (Principal Aquifer)	Medium	Low Likelihood	**Low/Moderate Risk:** Risk assessed as Low / moderate as contamination will likely be intercepted and attenuated by the shallow groundwater within the superficial deposits.
	Permeation through water pipes of shallow contamination.	Future site user/worker	Mild	Low Likelihood	**Low Risk:** Sources of contamination may be present on site however it is considered unlikely that UKWIR threshold values would be exceeded.

4.0 Phase II Ground Investigation

4.1 Fieldwork

The ground investigation (including fieldwork, sampling and laboratory analysis) has been designed to identify and assess potential ground related problems and to allow cost-effective solutions to be advised. It has been planned based on the desk study. All fieldwork and soil descriptions were carried out in general accordance with relevant British Standards.

The exploratory holes have been positioned to determine the general ground/groundwater conditions below the site, with representative samples obtained for geotechnical and environmental laboratory analysis. The resultant exploratory hole density is considered to be appropriate with the complexity of the site conditions revealed in the desk study and detail of information required for this phase of the investigation.

The ground investigation was undertaken between 26 June and 28 June 2023 and comprised a total of 18no. window sample boreholes to a maximum depth of 5.00m begl (WS01-18).

The exploratory hole location plan and exploratory hole logs are presented in Appendix B.

4.2 Ground Conditions

Topsoil was encountered from surface in three exploratory hole locations along the eastern boundary of the site (WS15 to WS17) to depths of 0.20m begl and generally comprised dark brown slightly gravelly slightly clayey sand. The gravel was subangular to subrounded fine to coarse quartzite and flint.

The Topsoil was underlain by variable Made Ground comprising pale yellowish-brown slightly gravelly fine to coarse sand with a moderate cobble content to a depth of 1.00m begl (WS15) or greyish-brown slightly gravelly sand to a depth of 0.50m begl (WS16) or black slightly gravelly slightly clayey fine to coarse sand to a depth of 0.70m begl (WS17). The gravel was subangular to subrounded fine to coarse quartzite, flint, concrete and brick. Cobbles are bricks.

Made Ground was encountered from surface in exploratory hole locations WS01 to WS15 which varied laterally from:

WS01 and WS02 which encountered concrete to from surface to depths of 0.32m begl.

WS03 to WS13 which are in the north and north-west of the site and from surface comprised grey sandy gravel a depth of between 0.10m and 0.30m begl. The gravel content was subangular to subrounded fine to coarse quartzite concrete and occasional asphalt and brick. In WS14 Made Ground of pale yellowish-brown fine to coarse sand was encountered from surface to 0.30m begl. In WS18 from surface comprised grey slightly sandy gravel to 0.20m begl. The gravel was subangular to subrounded fine to coarse quartzite.

Below the surface Made Ground or topsoil, further Made Ground comprising greyish-brown sandy gravel or greyish-brown gravelly fine to coarse sand was encountered to depths of between 0.10m and 0.70m begl. The gravel content was subangular to subrounded fine to coarse quartzite, concrete, asphalt and brick.

Below the Made Ground, natural soils of the Tidal Flat Deposits were encountered to depths of between 0.20m and 5.00m begl and generally comprised loose to medium dense pale yellowish-brown fine to coarse sand or medium dense pale yellowish-brown slightly gravelly fine to coarse sand with a moderate cobble content. The gravel was subangular to subrounded fine to coarse quartzite and flint. The cobbles were subangular to subrounded quartzite and flint.

These soils were underlain by loose to medium dense black to greyish-black to blackish-grey and brown slightly silty occasionally slightly clayey fine to coarse sand was encountered in WS02, WS05, WS07, WS09, WS10, WS17 between 2.90m and 5.00m begl.

Corrected SPT N-60 values within the Tidal Flat Deposits were between 10.7 and 38.4 at 1.00m, between 9.6 and 53.3 at 2.00m begl, between 3.2 and22.4 at 3.00m, between 4.3 and 20.30 at 4.00m begl and between 26.7 and 43.7 at 5.00m begl.

4.3 Groundwater

Shallow groundwater ingress was encountered in all exploratory hole locations that surpassed 3.00m begl during the investigation (WS02, WS05 to WS10, WS13, WS14, WS17). Shallower groundwater has been recorded within all the monitoring wells during the first two monitoring visits with groundwater levels recorded between 2.58m begl (WS02) and 2.90m begl (WS13).

4.4 Contamination Observations

No visual or olfactory evidence of potential significant contamination was identified during the ground investigation.

4.5 Chemical Analysis

Chemical laboratory analyses were selected to provide the parameters necessary to assess the suitability for the re-use of soils on the site as well as to inform risk assessment for end users and controlled waters. The choice of contamination testing was based on the commonly occurring potential contaminants as identified within the Phase I Site Appraisal and on-site visual observations of contaminated soils. The chemical analysis results are presented in Appendix C. In summary the following testing has been completed:

- 10no. samples for a general suite of contaminants -heavy metals, inorganics, speciated polyaromatic hydrocarbons and asbestos.
- 3no. samples for Speciated VOCs and SVOCs
- 4no. samples for leachates
- 3no. samples for total organic carbon content.

4.6 Geotechnical Testing

Geotechnical soils testing has been undertaken as part of the ground investigation to provide the parameters necessary for the budgetary design of the development. The geotechnical test results are presented in Appendix C. In summary the following testing has been completed:

- 4no. for pH and Water-Soluble Sulphate;
- 2no. for Atterberg Limit tests;
- 6no. for Remoulded Laboratory California Bearing Ratio Tests (2.5kg rammer).

5.0 Human Health Risk Assessment (Ground Gas)

Gas/groundwater monitoring standpipes have been installed in four of the window sample exploratory holes across the site (WS02, WS09, WS13 and WS17). Response zones were targeted in natural soils.

As the site is proposed for commercial end-use, the monitoring programme is scheduled to comprise four visits over a minimum three-month period using a GA5000 Multi-Function Gas Analyser.

The results of the ground gas monitoring programme were assessed using the classification system contained within BS 8485:2015+A1:2019 and CIRIA C665. The classification system uses gas concentrations and recorded flow rates for CH4 and CO2 to determine a borehole hazardous gas flow rate (Qhg). Qhg is used to assign a Characteristic Situation (CS) for each borehole, based on Table 2 in BS 8485:2015+A1:2019 and the Qhg. has been calculated using the equation below:

$$Q_{hg} = q\left(\frac{C_{hg}}{100}\right)$$

where:

q is the measured flow rate of combined gases from the monitoring standpipe (l/hr)

Chg is the measured hazardous gas concentration (% v/v)

The recorded concentrations of ground gas and flow rate are summarised in the table below:

Borehole	Max Steady Flow	Max. CH4 (% v/v)	Max. CO2 (% v/v)	CH4 Qhg (l/hr)	CO2 Qhg (l/hr)	CS
WS02	0.1	0.30	0.80	0.0003	0.0008	1
WS09	0.1	0.50	0.20	0.0005	0.0002	1
WS13	0.1	0.30	0.60	0.0003	0.0006	1
WS17	0.1	0.30	1.90	0.0003	0.0019	1

The monitoring programme has recorded a maximum carbon dioxide concentration of 1.90% v/v, a maximum methane concentration of 0.5% v/v and a minimum oxygen concentration of 17.5% v/v. No hydrogen sulphide has been recorded. Carbon monoxide was recorded on the first monitoring visit (WS09) with a peak of 2ppm and steady 1ppm. A maximum steady flow of 0.1l/hr has been recorded.

A plausible worst case Qhg has also been calculated for carbon dioxide (0.0019 l/hr) and methane (0.0005 l/hr) using the maximum steady flow rate of 0.1 l/hr. The 'worst case' Qhg for both carbon dioxide and methane would classify the site as Characteristic Situation 1 (CS1) in accordance with BS8485:2019 and on this basis gas precaution measures are unlikely to be required for the proposed development.

Radon protection measures are not required at the site.

The gas monitoring results to date are included in Appendix E.

6.0 Human Health Risk Assessment (Soil)

6.1 Introduction

It is understood that the site is to be developed to provide a commercial distribution building with associated yard area. The Phase II investigation have revealed up to 0.90m of Made Ground (WS14). However, no other significant visual or olfactory signs of contamination were noted.

Representative samples of topsoil, Made Ground and natural strata encountered were collected for further examination and/or potential testing.

The Generic Assessment Criteria (GAC) used by Patrick Parsons are presented in Appendix F. For this site, the chemical analysis results are being compared against the GAC for commercial end-use with a soil organic matter (SOM) content of 1%, this is considered the most appropriate GAC based on the total organic carbon (TOC) recorded within the analysis.

6.2 Risk to End-Users

The chemical analyses of the topsoil, Made Ground and natural soils have recorded no exceedances of any contaminants of concern when compared to the GAC for commercial end-use.

All 13no. samples were tested for the presence of asbestos; asbestos was not encountered in any of the samples.

Based on the results of the chemical analysis, the soils do not pose a risk to end-users and as such the topsoil, Made Ground and natural soils can be reused at the site.

6.3 Risk to Construction Workers

During any future construction works that take place on site, risks associated with contaminated soils must be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015. Potential acute risks resulting from short term exposure to contamination by construction / maintenance workers involved with the proposed development and future intrusive maintenance works (i.e. repairing services) cannot be assessed using the aforementioned GAC because they relate to the long-term (chronic) risk.

In accordance with CDM, potential risks to human health and the environment from construction activities shall be appropriately identified and all necessary steps taken to eliminate/manage that risk with the use of appropriate risk assessments and safe systems of work. It has been assumed that any future construction works on-site will be undertaken in compliance with these requirements and therefore construction workers involved in any future development at the site and intrusive maintenance workers (e.g., for repair of underground services) have been discounted as a human receptor in this report.

However, it is recommended that the laboratory test results are included in the consideration of site-specific risk assessment for the ground workers that will be exposed to the soils beneath the site.

7.0 Controlled Waters Risk Assessment

7.1 Risk Assessment

The chemical testing and ground investigation has not identified any grossly contaminated soils.

Four soil leachate samples have been analysed as part of this assessment, and the results have been screened against the Environmental Quality Standards (EQS) to assess risks to surface water. Recorded exceedances of EQS are outlined in the table below. No polyaromatic hydrocarbons were detected.

Environmental Quality Standards and Drinking Water Standards Exceedances			
Location	**Determinand**	**EQS (µg/l)**	**Exceedance (µg/l)**
WS05 at 0.60m	Copper	1*	13
WS09 at 0.25m			15
WS14 at 0.40m			17
WS16 at 0.10m			21
WS05 at 0.60m	Lead	1.2*	14
WS09 at 0.25m			4.7
WS14 at 0.40m			3
WS05 at 0.60m	Zinc	10.9*	24
WS09 at 0.25m			19
*$EQS_{bioavailable}$ - derived to reflect concentrations of concern in conditions of high bioavailability			

It should be noted that soil leachate tests can be overly aggressive given that the test is carried out under onerous conditions, and as such the results may overestimate the amount of leachate derived from a soil, giving values that are not representative of actual hydro chemical conditions.

The bedrock geology of the Kinnerton Sandstone Formation is recorded to be a Principal Aquifer. The Superficial Tidal Flat Deposits beneath the site are recorded to be a Secondary Undifferentiated Aquifer. The site is not recorded to be within any Source Protection Zone.

Groundwater ingress was encountered during the investigation all holes that surpassed 3.00m begl at depths of 3.00m begl. Shallower groundwater has been recorded within all the monitoring wells during the first two monitoring visits with groundwater levels recorded between 2.58m begl (WS02) and 2.90m begl (WS13).

The proposed layout shows the site will be covered predominantly by either impermeable hardstanding or the building footprint coupled with the presence of granular soils beneath the site and shallow groundwater limiting the vertical migration of contamination, attenuation and dilution of any contaminants will reduce the contamination risk of the bedrock Principal Aquifer beneath the site. Additionally, the bedrock geology will be of a significant depth and consequently it is considered unlikely that contamination would migrate vertically to impact the deeper aquifer, with site sourced contamination likely to be “intercepted” by the shallow groundwater body in the Made Ground and superficial deposits. On this basis, the risk to groundwater in the Principal Aquifer is considered to be low and no further assessment or remedial action are considered necessary in relation to this receptor.

In addition, the site is situated in an industrialised area therefore unlikely to have a potable water abstraction in close proximity reducing the risk to the Secondary Undifferentiated Aquifer within the Superficial Deposits.

As such, the primary controlled waters pollutant linkage that requires further assessment is the migration of contamination through shallow groundwater and potentially causing impact to the surface water features in close proximity to the site.

Surface Water Risk

The EQS values for copper, lead and zinc represent screening values for comparison against the fraction of each metal that is bioavailable as this is the fraction responsible for toxic effects in flora and fauna. The measured leachate concentrations of copper, lead and zinc represent total concentrations and as such the number and / or magnitude of exceedances would be lower when considering only the bioavailable fraction of each metal.

With respect to surface waters, there are 11no. surface water features within 250m of the site, 5no. located on site relating to an inland river not influenced by normal tidal action.

However, the proposed development will be predominantly laid to hardstanding limiting the infiltration through the underlying Made Ground and natural soils. Additionally, new drainage systems will be constructed associated with the new development limiting the levels of surface run-off to off-site surface water features.

As such it is considered the risk to controlled waters is considered to be low and no specific remediation is considered to be required for the proposed development.

8.0 Construction Materials Risk Assessment

8.1 Water Supply Pipes

The chemical analysis results have been compared against UK Water Industry Research (UKWIR) Contamination Thresholds for sub-surface water pipes.

Based on the site history and the chemical analysis completed, it considered that the site will be suitable for standard PVC not PE water pipes subject to confirmation from the utility provider.

8.2 Buried Concrete

Based on the recorded water-soluble sulphate (1.7-195mg/l) and pH (7.7-10.3), the Made Ground and natural soils below the site (assuming mobile groundwater conditions) are characterised as DS-1 and the ACEC Class as AC-1 (in accordance with BRE Special Digest 1 (2005)). This equates to a DC-1 classification and as such in accordance with BS 8500 DC-1/GEN1 or RC25/30 concrete would be suitable for unreinforced and reinforced concrete.

9.0 Phase II Conceptual Model

The preceding information has been used to revise the conceptual model.

9.1 Human Health Risks

The chemical analysis has identified no exceedances of any determinants when compared against the relevant Patrick Parsons GAC for a commercial end use and as such, the soils beneath the site do not pose a risk to human health.

Based on the results of the ground gas monitoring to date, the site would classify as Characteristic Situation 1 (CS1) in accordance with BS 8485:2015+A1:2019. On this basis, gas protection measures are not required within the future development, subject to the completion of the ground gas monitoring programme and the final gas risk assessment report.

9.2 Controlled Waters Risk

The proposed layout shows the site will be covered predominantly by either impermeable hardstanding or the building footprint coupled with the presence of granular soils beneath the site and shallow groundwater, attenuation and dilution of any contaminants will reduce the contamination risk of either superficial Secondary Undifferentiated or bedrock Principal Aquifer beneath the site to a low risk. In addition to this, the site is situated in an industrialised area therefore unlikely to have a potable water abstraction in close proximity. No gross contamination has been identified at the site following chemical analysis and as such there is no source of contamination in the source-pathway-receptor model and it is therefore considered that there is a negligible risk to controlled waters.

9.3 Conceptual Site Model

An updated assessment of relevant PCLs and associated risk ratings has been completed and a summary is provided in the Table on the next page.

Source	Pathway	Receptor	Consequence	Probability	Risk Assessment and Justification
On-site sources – No sources of on-site contamination.	Dermal contact, inhalation and ingestion of contaminants in soil and soil derived dust	Future site user/worker	Mild	Unlikely	**Very Low Risk** – No sources of contamination encountered on-site. Topsoil , Made Ground and natural soils can be reused on-site.
		Site construction worker	Mild	Unlikely	**Very Low Risk** - Construction workers have a shorter exposure period and risks shall be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015.
	Inhalation of volatile soil vapours and ground gas	Future site user/worker	Medium	Unlikely	**Very Low Risk** – Characteristic Situation 1 due to the lack of recorded ground gas during the monitoring programme.
		Site construction worker			
On-site sources – Slight elevations of Copper, Lead and Zinc leachate levels when compared against EQS. .	Limited vertical migration of contamination due to proposed surface hardstanding.	Groundwater within superficial deposits	Mild	Unlikely	**Very Low Risk:** The Receptor is unlikely to be utilised as a potable source, as such it should be considered as a pathway.
		Groundwater within bedrock		Unlikely	**Very Low Risk:** Limited contamination encountered on-site during site works. Restricted pathway between source and receptor.
		Surface Water Features		Unlikely	**Very Low Risk –** No contamination encountered on-site during site works.

Asbestos has been removed from the Phase II conceptual site model as no asbestos was encountered in any of the samples analysed and there was no visual evidence of any suspected ACM containing material or fly tipped ACMs.

10.0 Remediation and Validation

10.1 Protection of End-Users

The chemical analysis has identified no exceedances within the soil samples tested when compared to the GACs for a commercial end-use. As such, it is considered that no remediation with respect to the risk from soil contamination to human-health is required.

Should topsoil be required for any areas of proposed soft landscaping this will likely require importation. Imported topsoil will need to be chemically validated to ensure it is suitable for a commercial end-use. All imported soils should be chemically validated at the rates shown in the table below:

Source and Validation Rate	**Chemical Analysis Suite**		
	General Soil Suite	Asbestos	Hydrocarbons (TPHCWG)
Greenfield Source 1 per 150m³	✓		
Brownfield Source 1 per 100m³	✓	✓	✓
Generated Soil 1 per 50m³	✓	✓	✓

10.2 Human Health - Ground Gas

Based on the results of the ground gas monitoring programme to date the site has been classified as Characteristic Situation 1 (CS1) in accordance with BS 8485:2015+A1:2019 and as such gas protection measures are not required.

The above recommendations are subject to completion of the monitoring programme and approval from the Local Authority.

10.3 Protection of Construction Workers

Specific remediation to protect construction workers is not required. However, during future construction works on site, risks associated with soils must be adequately mitigated by law, specifically the Construction Design Management (CDM) Regulations, 2015. In accordance with CDM, potential risks to human health and the environment from construction activities shall be appropriately identified and all necessary steps are taken to eliminate/manage that risk with the use of appropriate risk assessments and safe systems of work, including using suitable personal protective equipment (PPE) in line with the ground workers risk assessment.

10.4 Protection of Controlled Waters

The site is not considered to pose a risk to controlled waters and thus no remediation is required.

10.5 Protection of Construction Materials

Specific remediation to protect construction materials should not be required, standard PE/PVC water pipes will be sufficient, subject to approval from the utility provider. In accordance with BS 8500 DC-1 and RC25/30 concrete would be suitable for unreinforced and reinforced concrete

10.6 Waste Disposal Classification

The results of the chemical analysis where subject to an online Hazwaste Assessment. The online Hazwaste assessment has confirmed that all ten samples that underwent chemical analysis, have been classified as non-hazardous. As such, it is considered that should any material require removal from site it may be suitable for disposal as non-hazardous to an inert waste landfill subject to confirmation by the receiving landfill site.

The full Hazwaste assessment is included in Appendix D

10.7 Unrecorded or Unexpected Contamination

During future site redevelopment, groundworkers should remain vigilant for previously unrecorded or unexpected visual and/or olfactory evidence of contamination, or ground conditions which appear inconsistent with those identified during the ground investigation completed by PP.

Examples of contamination may include, but may not be limited to blue billy, oil-stained soils, free phase oily liquid within soils, buried waste materials, fibrous materials, strong odours or marked variation in soil colour and should any unexpected ground conditions be encountered during construction, the following procedures should be adopted:

- All works in the area should be ceased and cordoned off;
- Patrick Parsons or similar geo-environmental consultant should attend site to inspect the area and if necessary collect samples for chemical analysis;
- If the inspection and/or chemical testing confirm the presence of additional contamination, the results will be shared with the LA EHO and any changes to the remedial strategy agreed. No works in the area will be undertaken to agreement has been reached;
- If the inspection and/or chemical testing confirm that no additional contamination is present, then works can proceed with no alteration to the remedial strategy.

11.0 Geotechnical Appraisal

11.1 Excavation Conditions

Excavations up to approximately 3.00m begl in the soils encountered during the ground investigation should be possible with standard mechanical excavation equipment (e.g. JCB 3CX). Trench support will be required due to the site being underlain by significant thicknesses of natural granular soils. Full temporary works trench support should be provided to any excavation where person entry is required.

Groundwater ingress was encountered during the investigation within all holes exploratory hole locations which surpassed 3.00m begl. Shallower groundwater has been recorded within all of the monitoring wells during the first two monitoring visits with groundwater levels recorded between 2.58m begl (WS02) and 2.90m begl (WS13). As such an allowance for groundwater ingress and control should be made for any excavation greater than 2.50m begl.

Should groundwater be encountered upon excavation, sump pumping techniques should be adequate to control any ingress. Foundations should be constructed as soon as possible after excavation to reduce loosening of the formation horizon.

11.2 Foundations

Based on development proposals it is considered that a traditional pad foundation solution may be feasible providing abnormally high loadings are not anticipated. An allowable bearing pressure of 150kN/m² should be achievable within the underlying medium dense superficial soils with a 1.50m by 1.50m pad at a depth of 1.50m begl and a vertical applied line load of 350 kN/m^2 per run with a proportion of available resistance used at 53%. Immediate settlements have been calculated at 27mm and long-term settlements at 42mm over a 60no. year period. Foundations should be deepened to extend through any Made Ground or loose superficial soils to at least 200mm into minimum medium dense natural soils.

The superficial natural soils are recorded to be predominantly granular and therefore have no volume change potential. As such, heave protections or deepening for tree influence will not be required.

Foundations along the western boundary should be deepened to a suitable depth where the resultant pressure bulb does not interact with the adjacent slope or drainage channel.

11.3 Floor slabs

It is anticipated that the formation horizon will expose relatively competent soils at shallow depth. As such it is considered that a ground bearing ground floor slab could be utilised at this site. It is assumed that the floor slab will be constructed on a granular stone blanket. In this instance it would be necessary to proof roll the formation horizon prior to compacting the sub-grade and identify any soft spots, that if revealed should be removed and replaced with a suitably compacted granular fill. A suspended floor slab or a well reinforced ground bearing slab with minimal penetrations (in accordance with BS8485) may be required if gas protection measures are required for the proposed development following completion of the gas monitoring program.

11.4 New Access Roads and Car Parking

The proposed development includes parking areas and access roads. Laboratory CBR testing has been carried out within WS04, WS12, WS15, WS16, WS17 and WS18 in locations of proposed access roads and car parking. The results are tabulated on the table below:

Location	Depth (m)	Result Range(%)
WS04	0.70	22 - 40
WS12	0.70	7.3 - 18
WS15	0.80	34 - 78
WS16	0.40	27 - 25
WS17	0.50	44 - 58
WS18	0.90	69 - 90

Based on the above results the Made Ground and natural soils beneath the site should provide a CBR design value of >10%, subject to in-situ CBR testing. Any soft spots should either be proof rolled or removed.

11.5 Soakaway Drainage Tests

Due to the presence of significant thicknesses of granular soils underlying the site, adequate infiltration rates may be recorded for the use of a soakaway drainage strategy. However, shallow groundwater and leachable contaminants have been recorded across the site, which precludes the use of a soakaway drainage system.

11.6 Slope Stability

Based on the current site levels there is a slope present along the western boundary of the proposed building, loading of the building should be carried to a depth where the pressure bulb does not interact with the slope or the off-site drain. However, a slope stability assessment may be required due to the proximity of the slope to the proposed structure. Any slope stability assessment should be undertaken by a suitably qualified engineer.

11.7 Retaining Structures

Given the existing topography in the areas of proposed development it is considered that no significant retaining structures are likely to be required. Should retaining structures be required along the western boundary of the site they should be designed by a suitably qualified structural engineer.

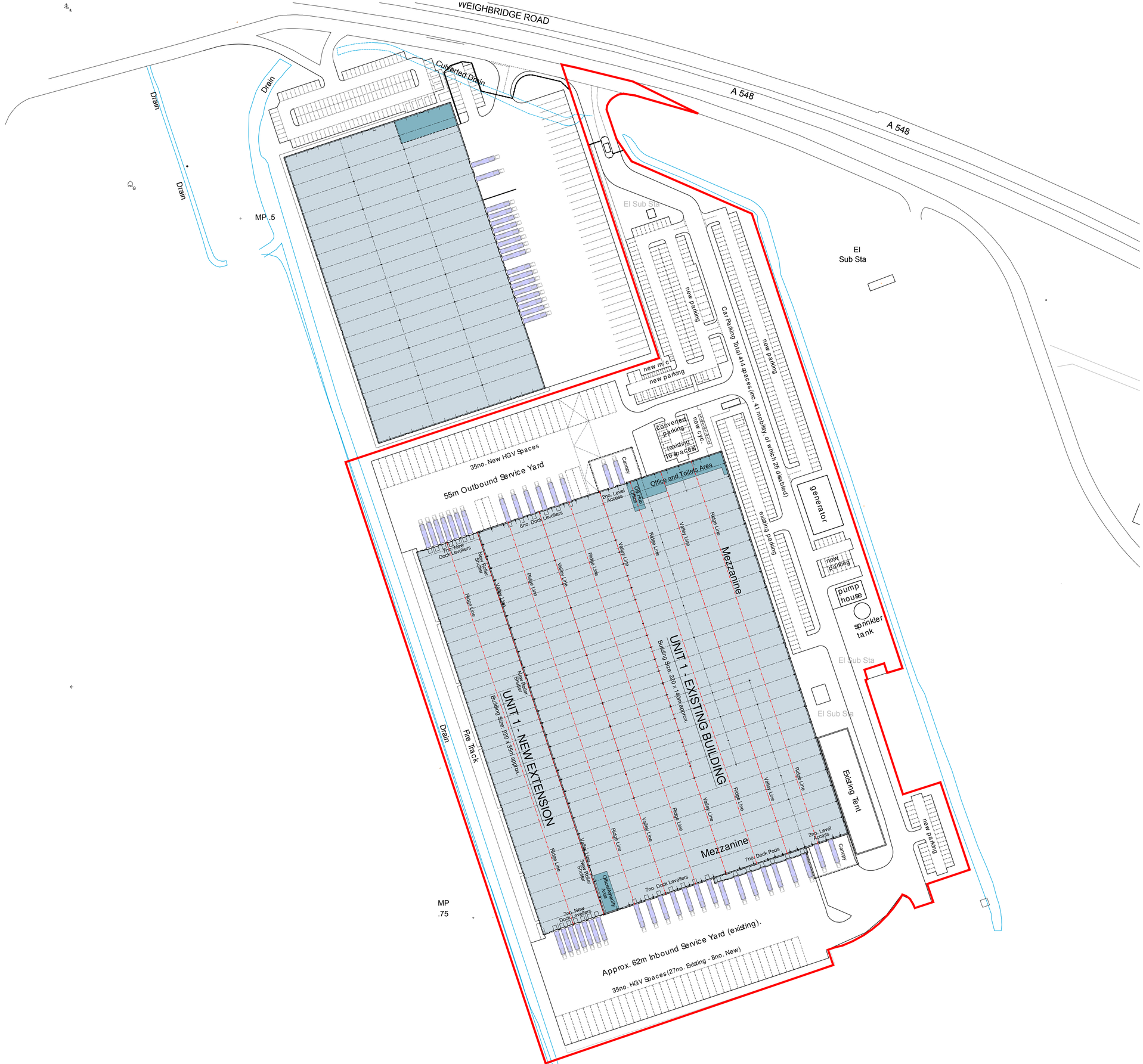
12.0 Further Investigation

Based on the ground conditions encountered in the site investigation it is considered that no further works are required.

Following review of this report a copy of it should be submitted to the Local Authority planning department prior to any development works as this is often a condition of planning.

Appendix A

Figures



N

notes

Schedule of Accommodation

All areas are approximate gross internal

Unit 1 (approx footprint)		
Existing	30,655 sq.m.	329,970 sq.ft.
Extension	7,695 sq.m.	82,830 sq.ft.
Total	38,350 sq.m.	412,800 sq.ft.

Existing Car Parking	114 spaces
Proposed Car Parking	300 spaces
inc. Mobility Parking	41 spaces
(of which Disabled	*25 spaces)*
Total Car Parking (Maxed Out)	**414 spaces**
Existing Motorcycle Parking	0 spaces
Proposed Motorcycle Parking	17 spaces
Total Motorcycle Parking	**17 spaces**
Existing Cycle Parking	0
Proposed Cycle Parking (1 per 1000)	42
Total Cycle Hoops	**42 (21 hoops)**
Existing HGV Parking	27 spaces
Proposed HGV Parking	43 spaces
Total HGV Parking	**70 spaces**
Existing Dock Levellers	20 docks
Proposed Dock Levellers	14 docks
Total Dock Levellers	**34 docks**
Existing Level Access Doors	4 doors
Proposed Level Access Doors	0 doors
Total Level Access Doors	**4 doors**
Plot Area	22.9 acres / 9.26 ha.

no.	date	revision	by

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client

Legat Owen

project

Great Bear
Link 56
Deeside

drawing

Indicative Site Plan
- Unit 1

scale	1:1000 @ A1	drawn	SRA
checked	SPP	date	24.11.21

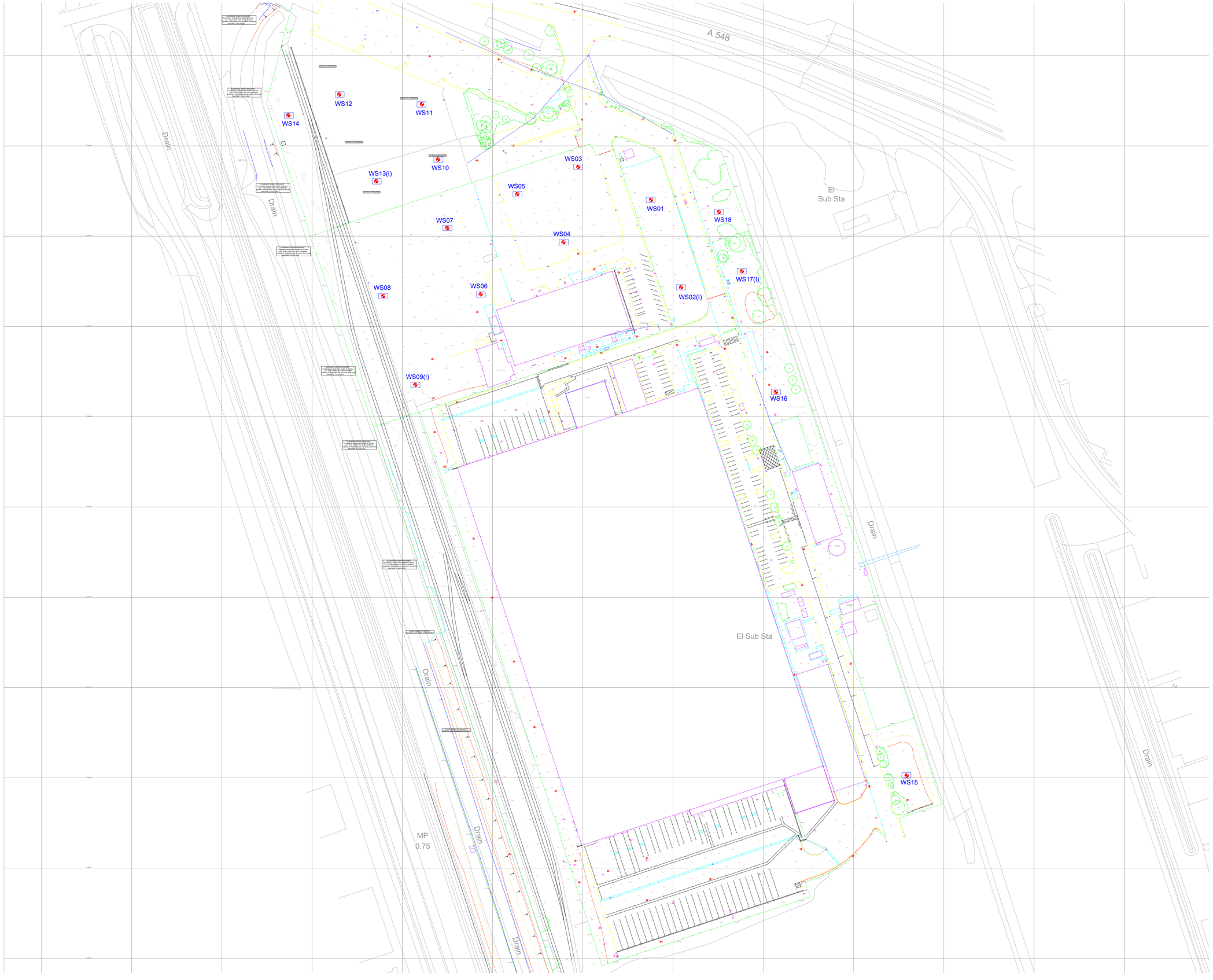
no

6850-014

PRELIMINARY

Appendix B

Exploratory Hole Location Plan and Logs



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Rev.	Amendments	Date	Drg	Chk

Revisions

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Client
Legat Owen

Project
10579 - Great Bear, Deeside

Drawing
Exploratory Hole Location Plan

Scales NTS At original size A1

Date 07/07/2023 Drawn by OMD Checked by HA

Status Draft

Drawing No. GBD-PPC-00-XX-SH-G-704 Rev.

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Borehole Log

Borehole No.
WS01
Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 26/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.32			MADE GROUND: Concrete
		0.45	ES					Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)
		0.60	B					
		0.70	D					
		1.00	SPT	N=16 (3,4/4,4,4,4)	1.00			End of Borehole at 1.00m

1
2
3
4
5

Remarks
1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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PATRICKPARSONS

Borehole Log

Borehole No. **WS02**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 26/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
								MADE GROUND: Concrete	
					0.32				
		0.40	ES					Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		0.50	B						
		0.50	D						
		1.00	SPT	N=10 (3,3/1,2,3,4)				*At 1.00m begl, becomes medium dense.*	1
		1.50	D						
		2.00	SPT	N=9 (2,2/3,1,2,3)				*At 2.00m begl, becomes loose.*	2
								At 2.20m begl becomes slightly damp	
		2.50	D						
G	▼	3.00	SPT	N=3 (1,0/0,2,1)				*At 3.00m begl, becomes loose.*	3
								Below 3.20m begl grey.	
					3.50				
								Black clayey fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		3.70	D						
		3.70	ES						
		4.00	SPT	N=12 (2,2/2,3,3,4)				*At 4.00m begl, medium dense.*	4
					5.00			End of Borehole at 5.00m	5

Remarks

1) Borehole CAT sccanned. 2) Groundwater encountered at 3.00m begl during drilling. 3) Borehole installed with soil gas and groundwater monitoring point.

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Borehole Log

Borehole No.
WS03
Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 26/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and concrete.
					0.50			MADE GROUND: Greyish brown sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite, concrete and brick.
								End of Borehole at 0.50m

Remarks
1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No. **WS04**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 26/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and concrete.
					0.50			MADE GROUND: Greyish brown sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite, concrete and brick.
		0.60 0.60 0.70	D ES B					Pale yellowish brown slightly gravelly fine to coarse SAND with a moderate cobble content. Gravel is subangular to subrounded fine to coarse quartzite and flint. Cobbles are subangular to subrounded cobble and flint. (TIDAL FLAT DEPOSITS)
		1.00	SPT	N=20 (5,6/5,5,5,5)	1.00			End of Borehole at 1.00m

1 2 3 4 5

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No. **WS05**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 26/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and concrete.
					0.50			MADE GROUND: Greyish brown sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite, concrete and brick.
		0.60	D					MADE GROUND: Greyish brown gravely fine to coarse sand. Gravel is subangular to subrounded fine to coarse quartzite, concrete and brick
		0.60	ES		0.70			Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)
		1.00	SPT	N=13 (4,3/4,3,3,3)				*At 1.00m begl, becomes medium dense.*
		1.60	D					
		2.00	SPT	N=9 (3,3/3,2,2,2)				*At 2.00m begl, becomes loose.*
		2.60	D					
	▼	3.00	SPT	N=5 (2,1/1,1,1,2)				*At 3.00m begl, becomes loose.*
					3.80			Greyish black slightly clayey fine to coarse SAND. (TIDAL FLAT DEPOSITS)
		3.90	D					
		4.00	SPT	N=4 (4,4/1,1,1,1)				*At 4.00m begl, becomes loose.*
		4.45	SPT	N=41 (3,5/8,10,11,12)	4.45			End of Borehole at 4.45m

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

AGS

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Borehole Log

Borehole No. **WS06**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 26/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
								MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and concrete.	
					0.30			Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		0.70	ES						
		0.90	D						
		1.00	SPT	N=13 (3,4/3,4,3,3)				*At 1.00m begl, becomes medium dense.*	1
		2.00	SPT	N=13 (2,3/3,4,3,3)				*At 2.00m begl, becomes medium dense.*	2
	▼	3.00	SPT	N=18 (4,4/4,4,5,5)	2.90			Medium dense blackish grey fine to coarse SAND. (TIDAL FLAT DEPOSITS)	3
		4.00	SPT	N=8 (2,2/3,2,2,1)				*At 4.00m begl, becomes loose.*	4
		5.00	SPT	N=32 (2,4/6,7,9,10)	5.00			End of Borehole at 5.00m	5

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

AGS

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Borehole Log

Borehole No. **WS07**

Sheet 1 of 2

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 27/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
								MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and concrete.	
					0.20			Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		0.60	ES						
		0.80	B						
		0.80	D						
		1.00	SPT	N=13 (2,2/4,4,3,2)				*At 1.00m begl, becomes medium dense.*	1
		1.80	D						
		2.00	SPT	N=9 (3,3/3,2,2,2)				*At 2.00m begl, becomes loose.*	2
		2.80	D						
	▼	3.00	SPT	N=3 (1,1/1,0,1,1)				*At 3.00m begl, becomes very loose.*	3
					3.50			Black slightly silty fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		3.70	ES						
		4.00	SPT	N=10 (2,2/2,2,2,4)	4.00			Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)	4
								At 4.00m begl, becomes medium dense.	
					4.50			Greyish black fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		5.00	SPT	N=3 (1,1/1,1,0,1)					5

Continued on Next Sheet

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

AGS

PATRICKPARSONS

Borehole Log

Borehole No. **WS07**

Sheet 2 of 2

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 27/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		5.45	SPT	N=10 (3,2/2,2,2,2,4)	5.45			*At 5.00m begl, becomes very loose.* End of Borehole at 5.45m

6
7
8
9
10

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

AGS

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Borehole Log

Borehole No. **WS08**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 27/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.20			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and concrete.	
		0.30	ES					Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		0.40	B						
		0.40	D						
		1.00	SPT	N=13 (3,4/4,4,2,3)				*At 1.00m begl, becomes medium dense.*	1
		1.40	D						
		2.00	SPT	N=6 (2,1/2,1,1,2)				*At 2.00m begl, becomes loose.*	2
		2.40	D					*At 2.40m begl becomes damp and slightly silty.*	
	▼	3.00	SPT	N=16 (3,4/4,4,4,4)				*At 3.00m begl, becomes medium dense.*	3
		3.40	D						
		4.00	SPT	N=12 (2,2/2,2,3,5)				*At 4.00m begl, becomes medium dense.*	4
								Below 4.60m begl mottled grey.	
		5.00	SPT	N=3 (0,0/1,1,0,1)	5.00			End of Borehole at 5.00m	5

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No. **WS09**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 27/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.25	ES		0.20			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite and concrete.	
		0.60	B					Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		0.70	D						
		1.00	SPT	N=14 (3,3/4,3,4,3)				*At 1.00m begl, becomes medium dense.*	1
		1.70	D						
		2.00	SPT	N=10 (2,2/2,3,2,3)				*At 2.00m begl, becomes medium dense.*	2
		2.70	D						
G	▼	3.00	SPT	N=25 (3,5/5,6,7,7)				*At 3.00m begl, becomes medium dense.*	3
		3.30	D		3.20			Black slightly silty slightly clayey fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		3.60	D		3.50			Grey fine to coarse SAND. (TIDAL FLAT DEPOSITS)	
		4.00	SPT	N=8 (3,2/2,2,2,2)	4.00			End of Borehole at 4.00m	4
									5

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole installed with a soil gas and groundwater monitoring point.

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Borehole Log

Borehole No. **WS10**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 27/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.10			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite, asphalt and concrete.
		0.30	ES					MADE GROUND: Greyish brown gravely fine to coarse sand. Gravel is subangular to subrounded fine to coarse quartzite, concrete and asphalt
					0.50			Pale yellowish brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and flint. (TIDAL FLAT DEPOSITS)
		1.00	SPT	N=16 (4,5/5,4,3,4)				*At 1.00m begl, becomes medium dense.*
		1.60	D					
		2.00	SPT	N=13 (3,3/3,3,3,4)				*At 2.00m begl, becomes medium dense.*
					2.60			Brown slightly clayey fine to coarse SAND. (TIDAL FLAT DEPOSITS)
		2.70	D					
	▼	3.00	SPT	N=15 (3,3/4,3,4,4)	3.00			Pale yellowish brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and flint. (TIDAL FLAT DEPOSITS)
								At 3.00m begl, becomes medium dense.
		4.00	SPT	N=12 (2,2/2,2,2,6)				*At 4.00m begl, becomes medium dense.*
		4.45	SPT	N=40 (7,6/8,9,11,12)	4.45			End of Borehole at 4.45m

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No.
WS11
Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 27/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite, concrete and brick.
		0.40 0.40	B D					Pale yellowish brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and flint. (TIDAL FLAT DEPOSITS)
		0.80	ES					
		1.00	SPT	N=17 (3,3/3,4,5,5)	1.00			End of Borehole at 1.00m

Remarks
1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No.
WS12
Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 27/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.20	D		0.10			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite, concrete and brick.
		0.20	ES		0.30			MADE GROUND: Brown slightly gravelly slightly clayey fine to coarse sand. Gravel is subangular to subrounded fine to coarse quartzite, brick and concrete.
		0.60	D					Pale yellowish brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite. (TIDAL FLAT DEPOSITS)
		0.70	B					
		1.00	SPT	N=18 (4,5/5,5,4,4)	1.00			End of Borehole at 1.00m

1
2
3
4
5

Remarks
1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

AGS

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Borehole Log

Borehole No. **WS13**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 28/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
					0.10			MADE GROUND: Grey sandy gravel. Gravel is subangular to subrounded fine to coarse quartzite, asphalt and concrete.	
		0.30	D					MADE GROUND: Greyish brown gravely fine to coarse sand. Gravel is subangular to subrounded fine to coarse quartzite, concrete and asphalt	
		0.60	ES		0.50			Pale yellowish brown slightly gravelly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and flint. (TIDAL FLAT DEPOSITS)	
		0.80	D						
		1.00	SPT	N=16 (4,4/4,4,4,4)				*At 1.00m begl, becomes medium dense.*	1
		2.00	SPT	N=12 (3,3/3,3,3,3)				*At 2.00m begl, becomes medium dense.*	2
		2.40	D						
G	▼	3.00	SPT	N=19 (3,4/4,5,5,5)				*At 3.00m begl, becomes medium dense.*	3
		4.00	SPT	N=22 (2,5/5,4,6,7)	4.00			End of Borehole at 4.00m	4
									5

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole installed with a soil gas and groundwater monitoring point.

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Borehole Log

Borehole No. **WS14**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 28/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.30			MADE GROUND: Pale yellowish brown fine to coarse sand.
		0.40	ES					MADE GROUND: Greyish black slightly gravelly fine to coarse sand. Gravel is subangular to subrounded fine to coarse quartzite and concrete.
		0.50	D					
		0.60	B					
					0.90			Loose pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)
		1.00	SPT	N=4 (1,1/1,1,1,1)				
		1.60	D					
		2.00	SPT	N=12 (4,3/3,3,4,2)				*At 2.00m begl, becomes medium dense.*
		2.60	D					
	▼	3.00	SPT	N=13 (2,3/3,3,4,3)	3.00			End of Borehole at 3.00m

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No. **WS15**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 28/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.20			Dark brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and flint. (TOPSOIL)
		0.50	D					MADE GROUND: Pale yellowish brown slightly gravelly fine to coarse sand with a moderate cobble content. Gravel is subangular to subrounded fine to coarse quartzite, flint, concrete and brick. Cobbles are brick.
		0.80	B					
		1.00	SPT	50 (2,2/50 for 135mm)	1.00			End of Borehole at 1.00m

1 2 3 4 5

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No.
WS16
Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 28/06/2023	Logged By

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
		0.10	ES		0.20			Dark brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and flint. (TOPSOIL)
		0.30	D					
		0.40	B		0.50			MADE GROUND: Greyish brown slightly gravelly sand. Gravel is subangular to subrounded fine to coarse quartzite, brick and concrete.
								End of Borehole at 0.50m

Remarks
1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

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Borehole Log

Borehole No. **WS17**

Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 28/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			Dark brown slightly gravelly slightly clayey fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite and flint. (TOPSOIL)
		0.40	D					*At 0.19m begl membrane*
		0.40	ES					MADE GROUND: Black slightly gravelly slightly clayey fine to coarse sand. Gravel is subangular to subrounded fine to coarse quartzite and brick.
		0.50	B		0.70			Pale yellowish brown fine to coarse SAND. (TIDAL FLAT DEPOSITS)
		1.00	SPT	N=14 (5,4/3,4,4,4,3)				*At 1.00m begl, becomes medium dense.*
		1.40	D					
		2.00	SPT	N=10 (1,1/1,2,3,4)				*At 2.00m begl, becomes medium dense.*
		2.40	D					
					2.80			Blackish grey fine to coarse SAND. (TIDAL FLAT DEPOSITS)
G	▼	3.00	SPT	N=50 (6,8/11,13,13,13)	3.00			End of Borehole at 3.00m

Remarks

1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole installed with a soil gas and groundwater monitoring point.

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Borehole Log

Borehole No.
WS18
Sheet 1 of 1

Project Name: Great Bear, Link 56, Deeside	Project No. 10579	Co-ords:	Hole Type WS
Location: Deeside, Wales		Level:	Scale 1:25
Client: Legat Owen		Dates: 28/06/2023	Logged By OMD

Well	Water Strikes	Sample and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description
		Depth (m)	Type	Results				
					0.20			Grey slightly sandy Gravel. Gravel is subangular to subrounded fine to coarse quartzite.
		0.30	ES					*At 0.19m begl membrane*
		0.40	D					Pale yellowish brown slightly gravelly cobbly fine to coarse SAND. Gravel is subangular to subrounded fine to coarse quartzite. Cobbles are subangular quartzite. (TIDAL FLAT DEPOSITS)
		0.90	B					
		1.00	SPT	N=7 (3,2/2,1,2,2)	1.00			End of Borehole at 1.00m

1
2
3
4
5

Remarks
1) Borehole CAT sccanned before drilling. 2) No groundwater encountered during drilling. 3) Borehole backfilled with arisings.

AGS

Appendix C

Laboratory Test Results

Omar Dalvai
Patrick Parson☐
40 St. Paul's Square
Birmingham
B3 1FQ

e: Patrick Parsons

i2 Analytical Ltd.
7 Woodshots Meadow,
Croxley Green
Business Park,
Watford,
Herts,
WD18 8YS

t: 01923 225404
f: 01923 237404
e: reception@i2analytical.com

Analytical Report Number : 23-42707

Project / Site name:	Great Bear, Link 56 Deeside	**Samples received on:**	29/06/2023
Your job number:	10579	**Samples instructed on/ Analysis started on:**	03/07/2023
Your order number:	2255	**Analysis completed by:**	10/07/2023
Report Issue Number:	1	**Report issued on:**	10/07/2023
Samples Analysed:	4 leachate samples - 13 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

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Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734333	2734334	2734335	2734336	2734337
Sample Reference				WS02	WS02	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	3.70	0.60	0.60	3.50
Date Sampled				26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	4.1	25	5.7	3.9	20
Total mass of sample received	kg	0.001	NONE	0.8	0.9	0.8	0.8	0.9
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	-
Asbestos Analyst ID	N/A	N/A	N/A	JBH	N/A	JBH	JBH	N/A

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.2	-	10.3	9.6	-
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Total Sulphate as SO4	%	0.005	MCERTS	0.017	-	0.155	0.092	-
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	3.4	-	390	200	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0017	-	0.19	0.1	-
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	1.7	-	195	102	-
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	< 0.1	0.7	0.2	0.1	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	< 0.05	-
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	0.11	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	0.15	< 0.05	-
Fluorene	mg/kg	0.05	MCERTS	< 0.05	-	0.18	0.07	-
Phenanthrene	mg/kg	0.05	MCERTS	< 0.05	-	0.6	0.18	-
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	0.16	< 0.05	-
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	1.1	0.07	-
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	1	0.05	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	0.6	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	0.61	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	0.74	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	0.34	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	0.61	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	0.48	< 0.05	-
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	0.1	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	0.49	< 0.05	-

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	-	7.3	< 0.80	-

Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734333	2734334	2734335	2734336	2734337
Sample Reference				WS02	WS02	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	3.70	0.60	0.60	3.50
Date Sampled				26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.9	-	8	6.9	-
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	0.4	< 0.2	-
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	-	< 1.2	< 1.2	-
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	5.6	-	15	11	-
Copper (aqua regia extractable)	mg/kg	1	MCERTS	5.3	-	23	24	-
Lead (aqua regia extractable)	mg/kg	1	MCERTS	5.4	-	35	25	-
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	-
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	4.7	-	12	5.2	-
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	18	-	170	53	-
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	-
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	-
p & m-xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	-
o-xylene	µg/kg	5	MCERTS	< 5.0 #	-	< 5.0 #	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	< 5.0	< 5.0	-
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	-
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	-
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	< 10	-	< 10	< 10	-
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	-	< 10	< 10	-
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	-
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	-
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	-
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10	< 10	-
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	27	< 10	-
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	< 10	-	< 10	< 10	-
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	-	34	< 10	-
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	-	40	< 10	-

Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734333	2734334	2734335	2734336	2734337
Sample Reference				WS02	WS02	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	3.70	0.60	0.60	3.50
Date Sampled				26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Chloroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Bromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Vinyl Chloride	µg/kg	5	NONE	-	-	-	< 5.0	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1-dichloroethene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	-	< 5.0	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	-	< 5.0	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1-dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Chloroform	µg/kg	5	NONE	-	-	-	< 5.0	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2-dichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Benzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Carbontetrachloride	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Toluene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Tetrachloroethene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
p & m-xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Styrene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Bromoform	µg/kg	5	NONE	-	-	-	< 5.0	-
o-xylene	µg/kg	5	MCERTS	-	-	-	< 5.0	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Bromobenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,3-dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
P-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,4-dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2-dichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Butylbenzene	µg/kg	5	NONE	-	-	-	< 5.0	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	-	< 5.0	-

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Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734333	2734334	2734335	2734336	2734337
Sample Reference				WS02	WS02	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	3.70	0.60	0.60	3.50
Date Sampled				26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	-	< 5.0	-
SVOCs								
Aniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Phenol	mg/kg	0.2	ISO 17025	-	-	-	< 0.2	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Isophorone	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	-	< 0.3	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	-	< 0.2	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	-	< 0.1	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	-	< 0.1	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	-	< 0.1	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Fluorene	mg/kg	0.05	MCERTS	-	-	-	0.07	-
Azobenzene	mg/kg	0.3	NONE	-	-	-	< 0.3	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	-	< 0.2	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	-	0.18	-
Anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Carbazole	mg/kg	0.3	MCERTS	-	-	-	< 0.3	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	-	< 0.2	-
Anthraquinone	mg/kg	0.3	NONE	-	-	-	< 0.3	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	-	0.07	-
Pyrene	mg/kg	0.05	MCERTS	-	-	-	0.05	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	-	< 0.3	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Chrysene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	-	< 0.05	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-

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Your Order No: 2255

Lab Sample Number				2734333	2734334	2734335	2734336	2734337
Sample Reference				WS02	WS02	WS04	WS05	WS06
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.40	3.70	0.60	0.60	3.50
Date Sampled				26/06/2023	26/06/2023	26/06/2023	26/06/2023	26/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	-	< 0.05	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Lab Sample Number				2734338	2734339	2734340	2734341	2734342
Sample Reference				WS07	WS07	WS09	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	3.70	0.25	0.20	0.60
Date Sampled				26/06/2023	26/06/2023	26/06/2023	28/06/2023	28/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8.7	20	4.9	7.9	6.4
Total mass of sample received	kg	0.001	NONE	0.8	0.9	0.8	0.8	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	-	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JBH	N/A	JBH	JBH	JBH

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	8.6	-	8.4	9.6	8.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	%	0.005	MCERTS	0.021	-	0.022	0.125	0.031
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	9.9	-	28	160	30
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0049	-	0.014	0.081	0.015
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	4.9	-	14.1	81.3	15
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	< 0.1	0.2	< 0.1	1.8	< 0.1

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.1	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.25	< 0.05
Fluorene	mg/kg	0.05	MCERTS	0.1	-	< 0.05	0.23	0.05
Phenanthrene	mg/kg	0.05	MCERTS	0.12	-	0.1	1	0.12
Anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.29	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	2.4	< 0.05
Pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	2.3	< 0.05
Benzo(a)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	1.1	< 0.05
Chrysene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	1.1	< 0.05
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	1.4	< 0.05
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	-	< 0.05	0.6	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	1.2	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.79	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.2	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	-	< 0.05	0.9	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	< 0.80	-	< 0.80	13.8	< 0.80

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Lab Sample Number				2734338	2734339	2734340	2734341	2734342
Sample Reference				WS07	WS07	WS09	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	3.70	0.25	0.20	0.60
Date Sampled				26/06/2023	26/06/2023	26/06/2023	28/06/2023	28/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Heavy Metals / Metalloids								
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	5.7	-	5.7	12	5.3
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	< 0.2	-	< 0.2	0.5	< 0.2
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	-	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	6.1	-	5.4	15	6.8
Copper (aqua regia extractable)	mg/kg	1	MCERTS	4.9	-	4.8	16	6.6
Lead (aqua regia extractable)	mg/kg	1	MCERTS	8.3	-	5.9	51	10
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	-	< 0.3	< 0.3	< 0.3
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	5.2	-	4.6	13	5.8
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	33	-	25	150	43
Monoaromatics & Oxygenates								
Benzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	-	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0 #	-	< 5.0	< 5.0 #	< 5.0 #
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	-	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons								
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	-	< 8.0	86	< 8.0
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	< 10	-	< 10	55	< 10
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	-	< 10	87	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	-	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	-	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	-	< 2.0	4	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10	20	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	-	< 10	160	< 10
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	< 10	-	< 10	88	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	-	< 10	180	< 10
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	-	< 10	410	< 10

Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734338	2734339	2734340	2734341	2734342
Sample Reference				WS07	WS07	WS09	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	3.70	0.25	0.20	0.60
Date Sampled				26/06/2023	26/06/2023	26/06/2023	28/06/2023	28/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
VOCs								
Chloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chloroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Bromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Vinyl Chloride	µg/kg	5	NONE	-	-	< 5.0	-	-
Trichlorofluoromethane	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1-dichloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	< 5.0	-	-
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	< 5.0	-	-
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1-dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chloroform	µg/kg	5	NONE	-	-	< 5.0	-	-
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Benzene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
Carbontetrachloride	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromomethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Toluene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Tetrachloroethene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Chlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Ethylbenzene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
p & m-xylene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
Styrene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromoform	µg/kg	5	NONE	-	-	< 5.0	-	-
o-xylene	µg/kg	5	MCERTS	-	-	< 5.0	-	-
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Bromobenzene	µg/kg	5	NONE	-	-	< 5.0	-	-
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,3-dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
P-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,4-dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2-dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Butylbenzene	µg/kg	5	NONE	-	-	< 5.0	-	-
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-
Hexachlorobutadiene	µg/kg	5	NONE	-	-	< 5.0	-	-

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Your Order No: 2255

Lab Sample Number				2734338	2734339	2734340	2734341	2734342
Sample Reference				WS07	WS07	WS09	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	3.70	0.25	0.20	0.60
Date Sampled				26/06/2023	26/06/2023	26/06/2023	28/06/2023	28/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0	-	-

SVOCs

Aniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2	-	-
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	-
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
2-Nitrophenol	mg/kg	0.3	NONE	-	-	< 0.3	-	-
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	< 0.2	-	-
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1	-	-
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1	-	-
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	< 0.1	-	-
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Acenaphthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
4-Nitroaniline	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Fluorene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Azobenzene	mg/kg	0.3	NONE	-	-	< 0.3	-	-
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2	-	-
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Phenanthrene	mg/kg	0.05	MCERTS	-	-	0.1	-	-
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Carbazole	mg/kg	0.3	MCERTS	-	-	< 0.3	-	-
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2	-	-
Anthraquinone	mg/kg	0.3	NONE	-	-	< 0.3	-	-
Fluoranthene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	< 0.3	-	-
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Chrysene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	-
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	< 0.05	-	-
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-

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Your Order No: 2255

Lab Sample Number				2734338	2734339	2734340	2734341	2734342
Sample Reference				WS07	WS07	WS09	WS12	WS13
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	3.70	0.25	0.20	0.60
Date Sampled				26/06/2023	26/06/2023	26/06/2023	28/06/2023	28/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**					
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05	-	-

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Project / Site name: Great Bear, Link 56 Deeside
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Lab Sample Number				2734343	2734344	2734345
Sample Reference				WS14	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.10
Date Sampled				28/06/2023	27/06/2023	27/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Stone Content	%	0.1	NONE	< 0.1	55	< 0.1
Moisture Content	%	0.01	NONE	7.9	9.4	9.6
Total mass of sample received	kg	0.001	NONE	0.8	0.8	0.8
Asbestos in Soil	Type	N/A	ISO 17025	Not-detected	Not-detected	Not-detected
Asbestos Analyst ID	N/A	N/A	N/A	JBH	JBH	JBH

General Inorganics

pH - Automated	pH Units	N/A	MCERTS	9.5	7.8	7.7
Total Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Free Cyanide	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Total Sulphate as SO4	%	0.005	MCERTS	0.212	0.038	0.047
Water Soluble Sulphate as SO4 16hr extraction (2:1)	mg/kg	2.5	MCERTS	490	17	31
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.25	0.0085	0.016
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	mg/l	1.25	MCERTS	247	8.5	15.5
Total Organic Carbon (TOC) - Automated	%	0.1	MCERTS	1.1	1.8	2.8

Total Phenols

Total Phenols (monohydric)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	0.11	0.14	0.22
Fluorene	mg/kg	0.05	MCERTS	0.11	0.13	0.25
Phenanthrene	mg/kg	0.05	MCERTS	0.33	0.27	0.57
Anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Fluoranthene	mg/kg	0.05	MCERTS	0.43	0.09	0.13
Pyrene	mg/kg	0.05	MCERTS	0.35	0.05	0.09
Benzo(a)anthracene	mg/kg	0.05	MCERTS	0.12	< 0.05	< 0.05
Chrysene	mg/kg	0.05	MCERTS	0.16	< 0.05	0.06
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	0.17	< 0.05	0.06
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	< 0.05	< 0.05	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	0.09	< 0.05	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	< 0.05	< 0.05	< 0.05

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	0.8	ISO 17025	1.87	< 0.80	1.38

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Lab Sample Number				2734343	2734344	2734345
Sample Reference				WS14	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.10
Date Sampled				28/06/2023	27/06/2023	27/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Heavy Metals / Metalloids						
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	7	7.3	6.9
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	0.4	< 0.2	0.3
Chromium (hexavalent)	mg/kg	1.2	NONE	< 1.2	< 1.2	< 1.2
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	9.9	36	20
Copper (aqua regia extractable)	mg/kg	1	MCERTS	30	18	25
Lead (aqua regia extractable)	mg/kg	1	MCERTS	26	30	37
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	< 0.3	0.4	0.4
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	7.4	34	15
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	120	70	76
Monoaromatics & Oxygenates						
Benzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Toluene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
p & m-xylene	µg/kg	5	MCERTS	< 5.0	< 5.0	< 5.0
o-xylene	µg/kg	5	MCERTS	< 5.0 #	< 5.0 #	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	< 5.0	< 5.0	< 5.0
Petroleum Hydrocarbons						
TPH-CWG - Aliphatic >EC5 - EC6 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC6 - EC8 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC8 - EC10 $_{HS\_1D\_AL}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aliphatic >EC10 - EC12 $_{EH\_CU\_1D\_AL}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aliphatic >EC12 - EC16 $_{EH\_CU\_1D\_AL}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aliphatic >EC16 - EC21 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC21 - EC35 $_{EH\_CU\_1D\_AL}$	mg/kg	8	MCERTS	< 8.0	< 8.0	< 8.0
TPH-CWG - Aliphatic >EC35 - EC40 $_{EH\_CU\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10
TPH-CWG - Aliphatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AL}$	mg/kg	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic >EC5 - EC7 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC7 - EC8 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC8 - EC10 $_{HS\_1D\_AR}$	mg/kg	0.001	NONE	< 0.001	< 0.001	< 0.001
TPH-CWG - Aromatic >EC10 - EC12 $_{EH\_CU\_1D\_AR}$	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0
TPH-CWG - Aromatic >EC12 - EC16 $_{EH\_CU\_1D\_AR}$	mg/kg	2	MCERTS	< 2.0	< 2.0	< 2.0
TPH-CWG - Aromatic >EC16 - EC21 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC21 - EC35 $_{EH\_CU\_1D\_AR}$	mg/kg	10	MCERTS	< 10	< 10	< 10
TPH-CWG - Aromatic >EC35 - EC40 $_{EH\_CU\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10
TPH-CWG - Aromatic (EC5 - EC35) $_{EH\_CU+HS\_1D\_AR}$	mg/kg	10	NONE	< 10	< 10	< 10
TPH Total C5 - C40 $_{EH\_CU+HS\_1D\_TOTAL}$	mg/kg	10	NONE	< 10	< 10	< 10

Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734343	2734344	2734345
Sample Reference				WS14	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.10
Date Sampled				28/06/2023	27/06/2023	27/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
VOCs						
Chloromethane	µg/kg	5	ISO 17025	-	-	< 5.0
Chloroethane	µg/kg	5	NONE	-	-	< 5.0
Bromomethane	µg/kg	5	ISO 17025	-	-	< 5.0
Vinyl Chloride	µg/kg	5	NONE	-	-	< 5.0
Trichlorofluoromethane	µg/kg	5	NONE	-	-	< 5.0
1,1-dichloroethene	µg/kg	5	NONE	-	-	< 5.0
1,1,2-Trichloro 1,2,2-Trifluoroethane	µg/kg	5	NONE	-	-	< 5.0
Trans 1,2-dichloroethylene	µg/kg	5	NONE	-	-	< 5.0
MTBE (Methyl Tertiary Butyl Ether)	µg/kg	5	NONE	-	-	< 5.0
1,1-dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0
2,2-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0
Chloroform	µg/kg	5	NONE	-	-	< 5.0
1,1,1-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0
1,2-dichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0
1,1-Dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0
Cis-1,2-dichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0
Benzene	µg/kg	5	MCERTS	-	-	< 5.0
Carbontetrachloride	µg/kg	5	NONE	-	-	< 5.0
1,2-dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0
Trichloroethene	µg/kg	5	ISO 17025	-	-	< 5.0
Dibromomethane	µg/kg	5	ISO 17025	-	-	< 5.0
Bromodichloromethane	µg/kg	5	ISO 17025	-	-	< 5.0
Cis-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0
Trans-1,3-dichloropropene	µg/kg	5	ISO 17025	-	-	< 5.0
Toluene	µg/kg	5	MCERTS	-	-	< 5.0
1,1,2-Trichloroethane	µg/kg	5	ISO 17025	-	-	< 5.0
1,3-Dichloropropane	µg/kg	5	ISO 17025	-	-	< 5.0
Dibromochloromethane	µg/kg	5	ISO 17025	-	-	< 5.0
Tetrachloroethene	µg/kg	5	NONE	-	-	< 5.0
1,2-Dibromoethane	µg/kg	5	ISO 17025	-	-	< 5.0
Chlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0
1,1,1,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0
Ethylbenzene	µg/kg	5	MCERTS	-	-	< 5.0
p & m-xylene	µg/kg	5	MCERTS	-	-	< 5.0
Styrene	µg/kg	5	ISO 17025	-	-	< 5.0
Bromoform	µg/kg	5	NONE	-	-	< 5.0
o-xylene	µg/kg	5	MCERTS	-	-	< 5.0
Isopropylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0
1,1,2,2-Tetrachloroethane	µg/kg	5	ISO 17025	-	-	< 5.0
Bromobenzene	µg/kg	5	NONE	-	-	< 5.0
N-Propylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0
2-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0
4-Chlorotoluene	µg/kg	5	ISO 17025	-	-	< 5.0
1,3,5-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0
Tert-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0
1,2,4-Trimethylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0
Sec-Butylbenzene	µg/kg	5	ISO 17025	-	-	< 5.0
1,3-dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0
P-Isopropyltoluene	µg/kg	5	ISO 17025	-	-	< 5.0
1,4-dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0
1,2-dichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0
Butylbenzene	µg/kg	5	NONE	-	-	< 5.0
1,2-Dibromo-3-chloropropane	µg/kg	5	ISO 17025	-	-	< 5.0
1,2,4-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0
Hexachlorobutadiene	µg/kg	5	NONE	-	-	< 5.0

Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734343	2734344	2734345
Sample Reference				WS14	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.10
Date Sampled				28/06/2023	27/06/2023	27/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
1,2,3-Trichlorobenzene	µg/kg	5	ISO 17025	-	-	< 5.0
SVOCs						
Aniline	mg/kg	0.1	NONE	-	-	< 0.1
Phenol	mg/kg	0.2	ISO 17025	-	-	< 0.2
2-Chlorophenol	mg/kg	0.1	MCERTS	-	-	< 0.1
Bis(2-chloroethyl)ether	mg/kg	0.2	MCERTS	-	-	< 0.2
1,3-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2
1,2-Dichlorobenzene	mg/kg	0.1	MCERTS	-	-	< 0.1
1,4-Dichlorobenzene	mg/kg	0.2	MCERTS	-	-	< 0.2
Bis(2-chloroisopropyl)ether	mg/kg	0.1	MCERTS	-	-	< 0.1
2-Methylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3
Hexachloroethane	mg/kg	0.05	ISO 17025	-	-	< 0.05
Nitrobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3
4-Methylphenol	mg/kg	0.2	NONE	-	-	< 0.2
Isophorone	mg/kg	0.2	MCERTS	-	-	< 0.2
2-Nitrophenol	mg/kg	0.3	NONE	-	-	< 0.3
2,4-Dimethylphenol	mg/kg	0.3	MCERTS	-	-	< 0.3
Bis(2-chloroethoxy)methane	mg/kg	0.3	MCERTS	-	-	< 0.3
1,2,4-Trichlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3
Naphthalene	mg/kg	0.05	MCERTS	-	-	< 0.05
2,4-Dichlorophenol	mg/kg	0.3	MCERTS	-	-	< 0.3
4-Chloroaniline	mg/kg	0.1	NONE	-	-	< 0.1
Hexachlorobutadiene	mg/kg	0.1	MCERTS	-	-	< 0.1
4-Chloro-3-methylphenol	mg/kg	0.1	NONE	-	-	< 0.1
2,4,6-Trichlorophenol	mg/kg	0.1	NONE	-	-	< 0.1
2,4,5-Trichlorophenol	mg/kg	0.2	NONE	-	-	< 0.2
2-Methylnaphthalene	mg/kg	0.1	NONE	-	-	< 0.1
2-Chloronaphthalene	mg/kg	0.1	MCERTS	-	-	< 0.1
Dimethylphthalate	mg/kg	0.1	MCERTS	-	-	< 0.1
2,6-Dinitrotoluene	mg/kg	0.1	NONE	-	-	< 0.1
Acenaphthylene	mg/kg	0.05	MCERTS	-	-	< 0.05
Acenaphthene	mg/kg	0.05	MCERTS	-	-	0.22
2,4-Dinitrotoluene	mg/kg	0.2	NONE	-	-	< 0.2
Dibenzofuran	mg/kg	0.2	MCERTS	-	-	< 0.2
4-Chlorophenyl phenyl ether	mg/kg	0.3	MCERTS	-	-	< 0.3
Diethyl phthalate	mg/kg	0.2	MCERTS	-	-	< 0.2
4-Nitroaniline	mg/kg	0.2	NONE	-	-	< 0.2
Fluorene	mg/kg	0.05	MCERTS	-	-	0.25
Azobenzene	mg/kg	0.3	NONE	-	-	< 0.3
Bromophenyl phenyl ether	mg/kg	0.2	MCERTS	-	-	< 0.2
Hexachlorobenzene	mg/kg	0.3	MCERTS	-	-	< 0.3
Phenanthrene	mg/kg	0.05	MCERTS	-	-	0.57
Anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05
Carbazole	mg/kg	0.3	MCERTS	-	-	< 0.3
Dibutyl phthalate	mg/kg	0.2	NONE	-	-	< 0.2
Anthraquinone	mg/kg	0.3	NONE	-	-	< 0.3
Fluoranthene	mg/kg	0.05	MCERTS	-	-	0.13
Pyrene	mg/kg	0.05	MCERTS	-	-	0.09
Butyl benzyl phthalate	mg/kg	0.3	NONE	-	-	< 0.3
Benzo(a)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05
Chrysene	mg/kg	0.05	MCERTS	-	-	0.06
Benzo(b)fluoranthene	mg/kg	0.05	ISO 17025	-	-	0.06
Benzo(k)fluoranthene	mg/kg	0.05	ISO 17025	-	-	< 0.05
Benzo(a)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05
Indeno(1,2,3-cd)pyrene	mg/kg	0.05	MCERTS	-	-	< 0.05

Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside
Your Order No: 2255

Lab Sample Number				2734343	2734344	2734345
Sample Reference				WS14	WS15	WS16
Sample Number				None Supplied	None Supplied	None Supplied
Depth (m)				0.40	0.10	0.10
Date Sampled				28/06/2023	27/06/2023	27/06/2023
Time Taken				None Supplied	None Supplied	None Supplied
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**			
Dibenz(a,h)anthracene	mg/kg	0.05	MCERTS	-	-	< 0.05
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	-	-	< 0.05

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

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Analytical Report Number: 23-42707
Project / Site name: Great Bear, Link 56 Deeside

Your Order No: 2255

Lab Sample Number				2734346	2734347	2734348	2734349
Sample Reference				WS05	WS09	WS14	WS16
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				0.60	0.25	0.40	0.10
Date Sampled				26/06/2023	27/06/2023	28/06/2023	27/06/2023
Time Taken				None Supplied	None Supplied	None Supplied	None Supplied
Analytical Parameter (Leachate Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
General Inorganics							
pH (automated)	pH Units	N/A	ISO 17025	8.7	8.2	8.3	7.9
Speciated PAHs							
Naphthalene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthylene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Acenaphthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluorene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Phenanthrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)anthracene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Chrysene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(b)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(k)fluoranthene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(a)pyrene	µg/l	0.01	ISO 17025	< 0.01	< 0.01	< 0.01	< 0.01
Indeno(1,2,3-cd)pyrene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Dibenz(a,h)anthracene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Benzo(ghi)perylene	µg/l	0.01	NONE	< 0.01	< 0.01	< 0.01	< 0.01
Total PAH							
Total EPA-16 PAHs	µg/l	0.2	NONE	< 0.2	< 0.2	< 0.2	< 0.2
Heavy Metals / Metalloids							
Arsenic (dissolved)	µg/l	1	ISO 17025	6	4.7	4.3	3.4
Cadmium (dissolved)	µg/l	0.08	ISO 17025	< 0.08	< 0.08	< 0.08	< 0.08
Chromium (hexavalent)	µg/l	5	ISO 17025	< 5.0	< 5.0	< 5.0	< 5.0
Chromium (dissolved)	µg/l	0.4	ISO 17025	1.2	2.3	0.9	0.8
Copper (dissolved)	µg/l	0.7	ISO 17025	13	15	17	21
Lead (dissolved)	µg/l	1	ISO 17025	14	4.7	3	1.1
Mercury (dissolved)	µg/l	0.5	ISO 17025	< 0.5	< 0.5	< 0.5	< 0.5
Nickel (dissolved)	µg/l	0.3	ISO 17025	0.3	1.2	0.4	1
Selenium (dissolved)	µg/l	4	ISO 17025	< 4.0	< 4.0	< 4.0	< 4.0
Zinc (dissolved)	µg/l	0.4	ISO 17025	24	19	10	3.9

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 23-42707
Project / Site name: Great Bear, Link 56 Deeside

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2734333	WS02	None Supplied	0.4	Light brown sand.
2734334	WS02	None Supplied	3.7	Brown sandy clay.
2734335	WS04	None Supplied	0.6	Brown sand.
2734336	WS05	None Supplied	0.6	Brown sand with clinker.
2734337	WS06	None Supplied	3.5	Brown sand.
2734338	WS07	None Supplied	0.6	Brown sand.
2734339	WS07	None Supplied	3.7	Brown sand.
2734340	WS09	None Supplied	0.25	Brown sand.
2734341	WS12	None Supplied	0.2	Brown sand with gravel and brick.
2734342	WS13	None Supplied	0.6	Brown sand.
2734343	WS14	None Supplied	0.4	Brown sand with gravel.
2734344	WS15	None Supplied	0.1	Brown sandy loam with vegetation and stones.
2734345	WS16	None Supplied	0.1	Brown sandy loam with gravel and vegetation.

Analytical Report Number : 23-42707
Project / Site name: Great Bear, Link 56 Deeside

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
BS EN 12457-2 (10:1) Leachate Prep	10:1 (as recieved, moisture adjusted) end over end extraction with water for 24 hours. Eluate filtered prior to analysis.	In-house method based on BSEN12457-2.	L043-PL	W	NONE
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with dispersion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Metals by ICP-OES in leachate	Determination of metals in leachate by acidification followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L039-PL	W	ISO 17025
Hexavalent chromium in leachate	Determination of hexavalent chromium in leachate by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	ISO 17025
Free cyanide in soil	Determination of free cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
Monohydric phenols in soil	Determination of phenols in soil by extraction with sodium hydroxide followed by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (skalar)	L080-PL	W	MCERTS
Speciated EPA-16 PAHs in leachate	Determination of PAH compounds in leachate by extraction in dichloromethane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L102B-PL	W	ISO 17025
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
pH at 20oC in leachate (automated)	Determination of pH in leachate by electrometric measurement.	In house method.	L099B	W	ISO 17025
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE
Semi-volatile organic compounds in soil	Determination of semi-volatile organic compounds in soil by extraction in dichloromethane and hexane followed by GC-MS.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Total cyanide in soil	Determination of total cyanide by distillation followed by colorimetry.	In-house method based on Examination of Water and Wastewater 20th Edition: Clesceri, Greenberg & Eaton (Skalar)	L080-PL	W	MCERTS
Total organic carbon (Automated) in soil	Determination of organic matter in soil by oxidising with potassium dichromate followed by titration with iron (II) sulphate.	In house method.	L009-PL	D	MCERTS

Analytical Report Number : 23-42707
Project / Site name: Great Bear, Link 56 Deeside

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Volatile organic compounds in soil	Determination of volatile organic compounds in soil by headspace GC-MS.	In-house method based on USEPA8260	L073B-PL	W	MCERTS
BTEX and MTBE in soil (Monoaromatics)	Determination of BTEX in soil by headspace GC-MS. Individual components MCERTS accredited	In-house method based on USEPA8260	L073B-PL	W	MCERTS
TPH in (Soil)	Determination of TPH bands by HS-GC-MS/GC-FID	In-house method, TPH with carbon banding and silica gel split/cleanup.	L076-PL	D	NONE
TPHCWG (Soil)	Determination of hexane extractable hydrocarbons in soil by GC-MS/GC-FID.	In-house method with silica gel split/clean up.	L088/76-PL	W	MCERTS
Hexavalent chromium in soil (Lower Level)	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazide followed by colorimetry.	In-house method	L080-PL	W	NONE
Total Sulphate in soil as %	Determination of total sulphate in soil by extraction with 10% HCl followed by ICP-OES.	In house method.	L038-PL	D	MCERTS
D.O. for Gravimetric Quant if Screen/ID positive	Dependent option for Gravimetric Quant if Screen/ID positive scheduled.	In house asbestos methods A001 & A006.	A006-PL	D	NONE

Analytical Report Number : 23-42707
Project / Site name: Great Bear, Link 56 Deeside

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

Information in Support of Analytical Results

List of HWOL Acronyms and Operators

Acronym	Descriptions
HS	Headspace Analysis
MS	Mass spectrometry
FID	Flame Ionisation Detector
GC	Gas Chromatography
EH	Extractable Hydrocarbons (i.e. everything extracted by the solvent(s))
CU	Clean-up - e.g. by Florisil®, silica gel
1D	GC - Single coil/column gas chromatography
2D	GC-GC - Double coil/column gas chromatography
Total	Aliphatics & Aromatics
AL	Aliphatics
AR	Aromatics
#1	EH_2D_Total but with humics mathematically subtracted
#2	EH_2D_Total but with fatty acids mathematically subtracted
_	Operator - understore to separate acronyms (exception for +)
+	Operator to indicate cumulative e.g. EH+HS_Total or EH_CU+HS_Total

- Data reported unaccredited due to quality control parameter failure associated with this result; other checks applied prior to reporting the data have been accepted. The result should be considered as being deviating and may be compromised.

Analytical Report Number : 23-42707
Project / Site name: Great Bear, Link 56 Deeside

This deviation report indicates the sample and test deviations that apply to the samples submitted for analysis.Please note that the associated result(s) may be unreliable and should be interpreted with care.

Key: a - No sampling date b - Incorrect container c - Holding time d - Headspace e - Temperature

Sample ID	Other ID	Sample Type	Lab Sample Number	Sample Deviation	Test Name	Test Ref	Test Deviation
WS02	None Supplied	S	2734333	c	Free cyanide in soil	L080-PL	c
WS02	None Supplied	S	2734333	c	Total cyanide in soil	L080-PL	c
WS04	None Supplied	S	2734335	c	Free cyanide in soil	L080-PL	c
WS04	None Supplied	S	2734335	c	Total cyanide in soil	L080-PL	c
WS05	None Supplied	S	2734336	c	Free cyanide in soil	L080-PL	c
WS05	None Supplied	S	2734336	c	Total cyanide in soil	L080-PL	c
WS07	None Supplied	S	2734338	c	Free cyanide in soil	L080-PL	c
WS07	None Supplied	S	2734338	c	Total cyanide in soil	L080-PL	c
WS09	None Supplied	S	2734340	c	Free cyanide in soil	L080-PL	c
WS09	None Supplied	S	2734340	c	Total cyanide in soil	L080-PL	c

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Analytical Report Number : 23-43687

Project / Site name:	Great Bear Deeside	**Samples received on:**	07/07/2023
Your job number:	10579	**Samples instructed on/ Analysis started on:**	07/07/2023
Your order number:		**Analysis completed by:**	19/07/2023
Report Issue Number:	1	**Report issued on:**	20/07/2023
Samples Analysed:	4 soil samples		

Signed:

Anna Goc
PL Head of Reporting Team
For & on behalf of i2 Analytical Ltd.

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41-711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting
leachates - 2 weeks from reporting
waters - 2 weeks from reporting
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.
Application of uncertainty of measurement would provide a range within which the true result lies.
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 23-43687
Project / Site name: Great Bear Deeside

Lab Sample Number				2739804	2739805	2739806	2739807
Sample Reference				WS07	WS09	WS10	WS05
Sample Number				None Supplied	None Supplied	None Supplied	None Supplied
Depth (m)				1.80	0.70	1.60	1.60
Date Sampled				06/07/2023	06/07/2023	06/07/2023	06/07/2023
Time Taken				1700	1700	1700	1700
Analytical Parameter (Soil Analysis)	**Units**	**Limit of detection**	**Accreditation Status**				
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1
Moisture Content	%	0.01	NONE	8	5.1	11	6
Total mass of sample received	kg	0.001	NONE	0.3	0.3	0.3	0.3
General Inorganics							
pH - Automated	pH Units	N/A	MCERTS	8.9	8	8.9	9
Water Soluble SO4 16hr extraction (2:1 Leachate Equivalent)	g/l	0.00125	MCERTS	0.0041	0.042	0.0081	0.028

U/S = Unsuitable Sample I/S = Insufficient Sample ND = Not detected

Analytical Report Number : 23-43687
Project / Site name: Great Bear Deeside

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
2739804	WS07	None Supplied	1.8	Brown sandy clay.
2739805	WS09	None Supplied	0.7	Brown sandy clay with gravel.
2739806	WS10	None Supplied	1.6	Brown sandy clay.
2739807	WS05	None Supplied	1.6	Brown sandy clay.

Analytical Report Number : 23-43687
Project / Site name: Great Bear Deeside

Water matrix abbreviations:
Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Sulphate, water soluble, in soil (16hr extraction)	Determination of water soluble sulphate by ICP-OES. Results reported directly (leachate equivalent) and corrected for extraction ratio (soil equivalent).	In house method.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically. (30 oC)	In house method.	L019-UK/PL	W	NONE
pH in soil (automated)	Determination of pH in soil by addition of water followed by automated electrometric measurement.	In house method.	L099-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK or A' analysis have been carried out in our laboratory in the United Kingdom (WATFORD).
For method numbers ending in 'F' analysis have been carried out in our laboratory in the United Kingdom (East Kilbride).
For method numbers ending in 'PL or B' analysis have been carried out in our laboratory in Poland.
Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.
Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.

GEOLABS Limited
Unit D3 HRS Business Park
Granby Avenue
Birmingham
B33 0SJ

Tel: +44(0) 121 296 4600
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email: admin@geolabs.co.uk
web: www.geolabs.co.uk

Patrick Parsons
40 St Pauls Square
Birmingham
B3 1FQ

20 July 2023
Report No : GEO/38413/01

For the attention of Mr O Dalvai

Date samples received	06/07/2023
Date written instructions received	06/07/2023
Date testing commenced	07/07/2023
Date of sample disposal	**17/08/2023**

Our ref **GEO / 38413**
Your Ref **10579**

Project **GREAT BEAR, DEESIDE**

Further to your instructions we have pleasure in enclosing the results of the tests you requested in the attached figures.

LABORATORY TEST REPORT

Item No	Test Quantity	Description
1	6	California Bearing Ratio

Any opinions or interpretations expressed herein are outside the scope of UKAS accreditation. All results contained in this report are provisional unless signed by an approved signatory. The results contained in this report relate only to samples received in the laboratory and are tested 'as received' unless otherwise stated. This report should not be reproduced, except in full, without the written approval of the laboratory. The results reported are applicable only to the test items received by the laboratory.

All the necessary data required by the documented test procedures has been recorded and will be stored for a period of not less than 6 years. This data will be issued to yourselves at your request. All samples will be disposed of after the date shown above. Written confirmation will be required to retain the samples beyond this period and a storage charge may be applied.

We trust that the above meets your requirements and should you require any further information or assistance, please do not hesitate to contact us.

Yours faithfully
on behalf of **GEOLABS Limited**

J A Reynolds
Director

BS1377 : Part 4 : Clause 7 : 1990

CALIFORNIA BEARING RATIO

Location	WS04
Depth (m)	0.70
Sample Type	B

Description:

Brown SAND with much fine to coarse gravel.

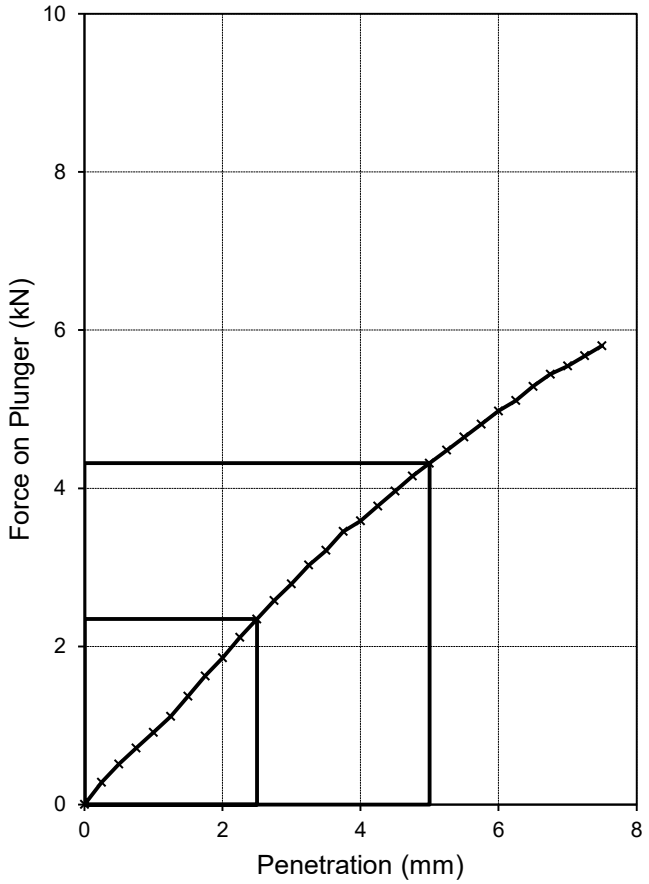
Material > 20 mm removed as advised by client.

PREPARATION DETAILS

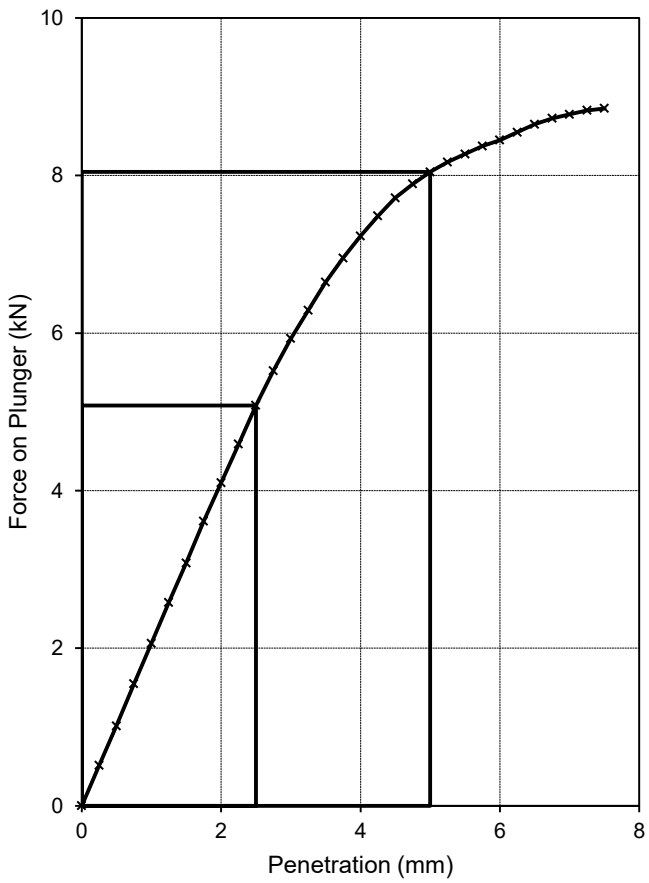
The specimen was tested in an unsoaked condition.
The specimen was tested at the as received water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 1.80 Mg/m³
Prepared dry density 1.69 Mg/m³
31.3 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	8.0 kg	8.0 kg
Seating load	50 N	50 N
Water content	6.7 %	6.8 %
CBR Value	22 %	40 %

Top of Specimen



Base of Specimen



Tested by DF

Checked and Approved by

J A Reynolds - Director
20/07/2023

Project Number:

GEO / 38413

Project Name:

GREAT BEAR, DEESIDE
10579

GEOLABS

UKAS TESTING 1982

BS1377 : Part 4 : Clause 7 : 1990

CALIFORNIA BEARING RATIO

Location	WS12
Depth (m)	0.70
Sample Type	B

Description:

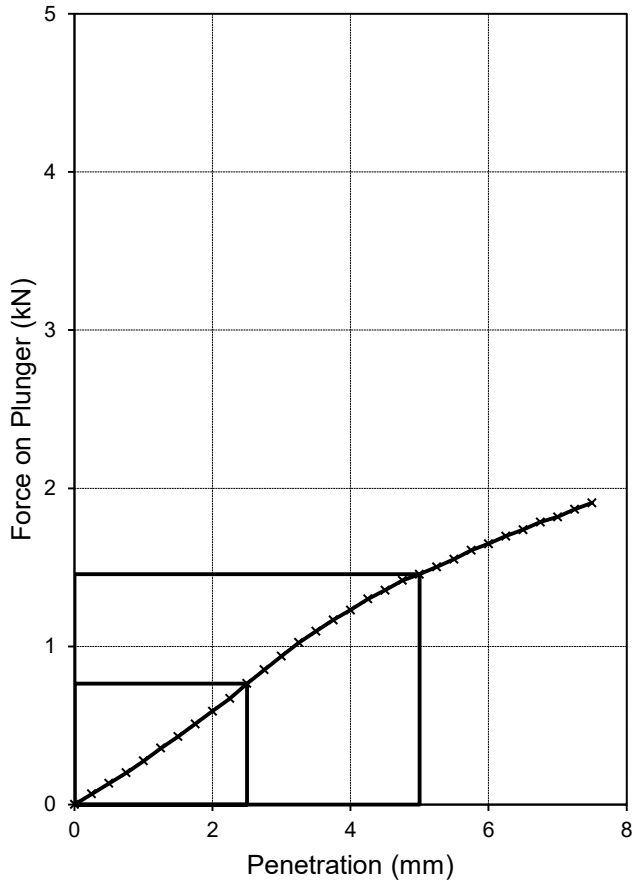
Light brown SAND with rare fine to coarse gravel.

PREPARATION DETAILS

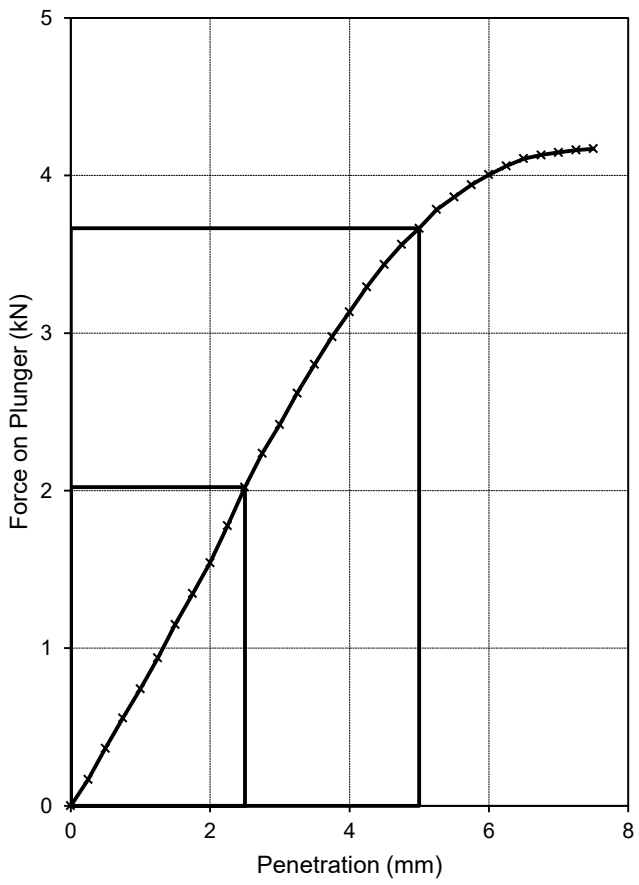
The specimen was tested in an unsoaked condition.
The specimen was tested at the as received water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 1.63 Mg/m³
Prepared dry density 1.54 Mg/m³
2.4 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	8.0 kg	8.0 kg
Seating load	50 N	50 N
Water content	5.9 %	6.6 %
CBR Value	7.3 %	18 %

Top of Specimen



Base of Specimen



Tested by DF
Checked and Approved by

J A Reynolds - Director
20/07/2023

Project Number:

GEO / 38413

Project Name:

GREAT BEAR, DEESIDE
10579

GEOLABS
UKAS TESTING 1982

BS1377 : Part 4 : Clause 7 : 1990

CALIFORNIA BEARING RATIO

Location	WS15
Depth (m)	0.80
Sample Type	B

Description:

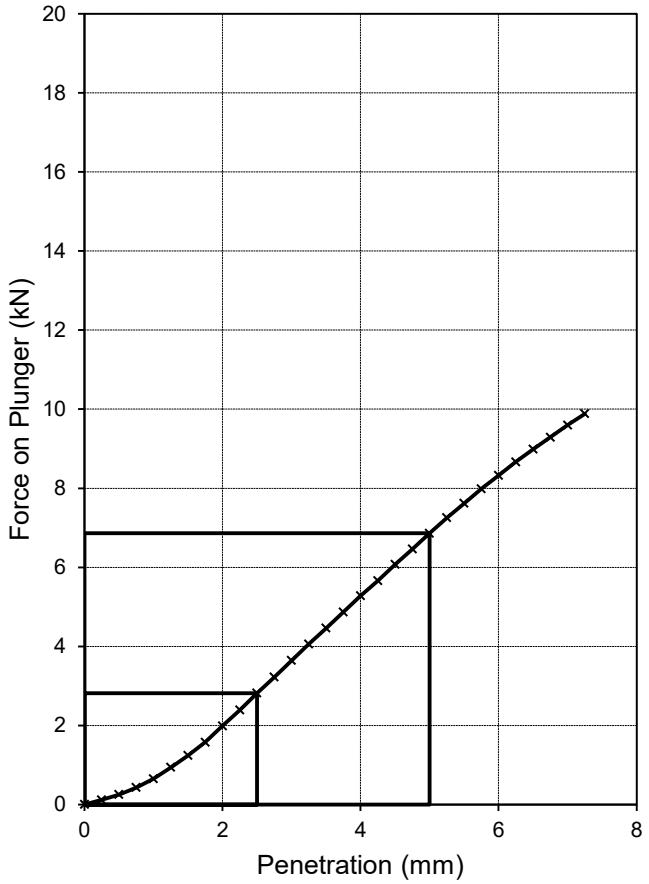
Brown SAND with some fine to coarse gravel.

PREPARATION DETAILS

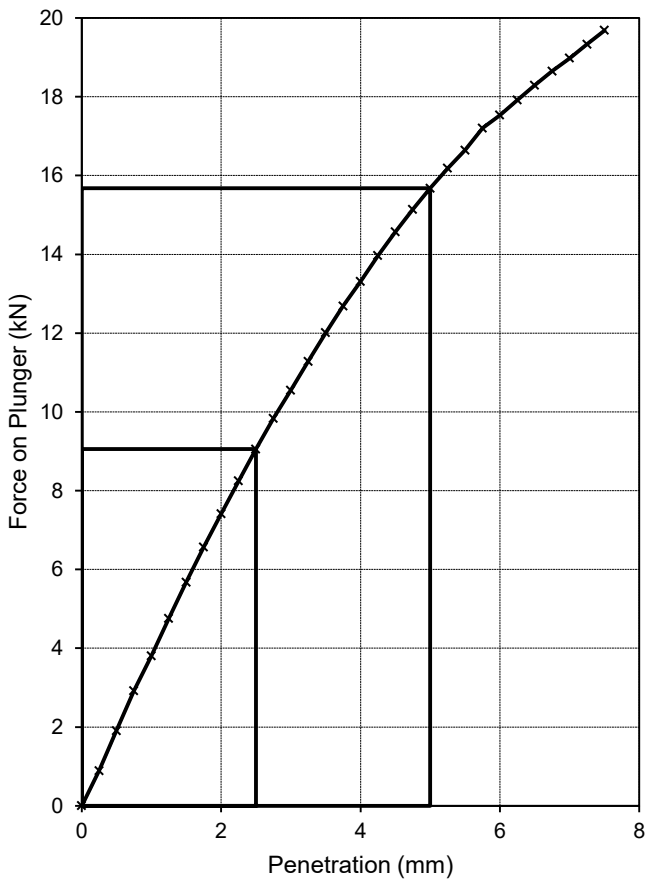
The specimen was tested in an unsoaked condition.
The specimen was tested at the as received water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 1.99 Mg/m³
Prepared dry density 1.84 Mg/m³
23.4 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	8.0 kg	8.0 kg
Seating load	50 N	50 N
Water content	8.1 %	8.0 %
CBR Value	34 %	78 %

Top of Specimen



Base of Specimen



Tested by DF
Checked and Approved by

J A Reynolds - Director
20/07/2023

Project Number:

GEO / 38413

Project Name:

GREAT BEAR, DEESIDE
10579

GEOLABS
UKAS TESTING 1982

BS1377 : Part 4 : Clause 7 : 1990

CALIFORNIA BEARING RATIO

Location	WS16
Depth (m)	0.40
Sample Type	B

Description:

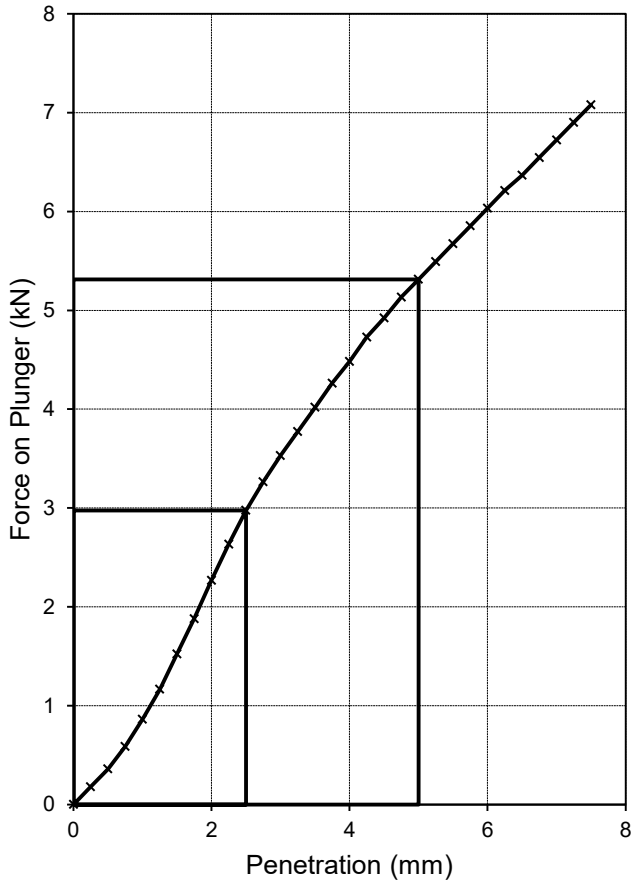
Brown SAND with rare fine to coarse gravel.

PREPARATION DETAILS

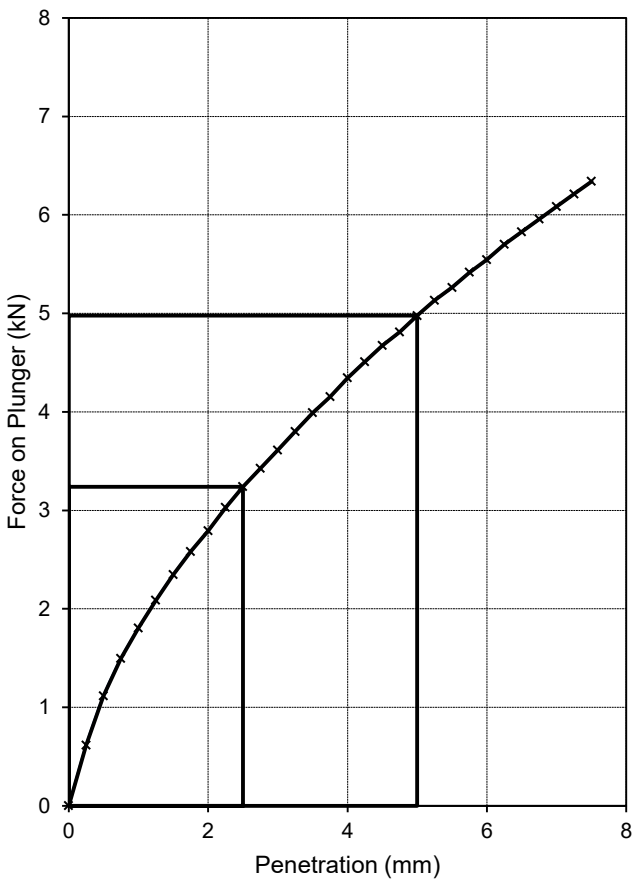
The specimen was tested in an unsoaked condition.
The specimen was tested at the as received water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 1.82 Mg/m³
Prepared dry density 1.68 Mg/m³
14.5 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	8.0 kg	8.0 kg
Seating load	50 N	50 N
Water content	8.6 %	8.3 %
CBR Value	27 %	25 %

Top of Specimen



Base of Specimen



Tested by DF

Checked and Approved by

J A Reynolds - Director
20/07/2023

Project Number:

GEO / 38413

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GREAT BEAR, DEESIDE
10579

GEOLABS

UKAS TESTING 1982

BS1377 : Part 4 : Clause 7 : 1990

CALIFORNIA BEARING RATIO

Location	WS17
Depth (m)	0.50
Sample Type	B

Description:

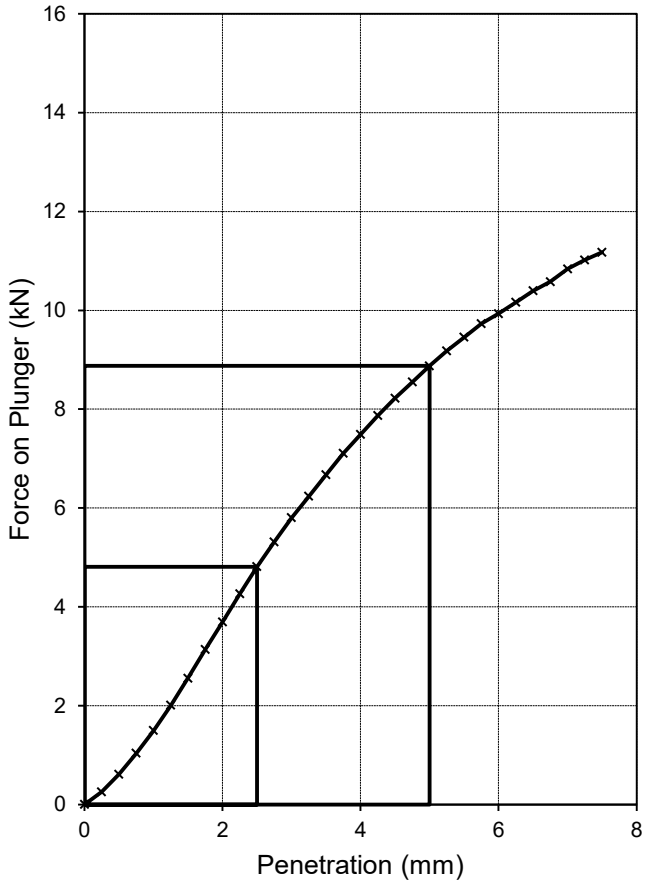
Dark brown SAND with some fine to coarse gravel.

PREPARATION DETAILS

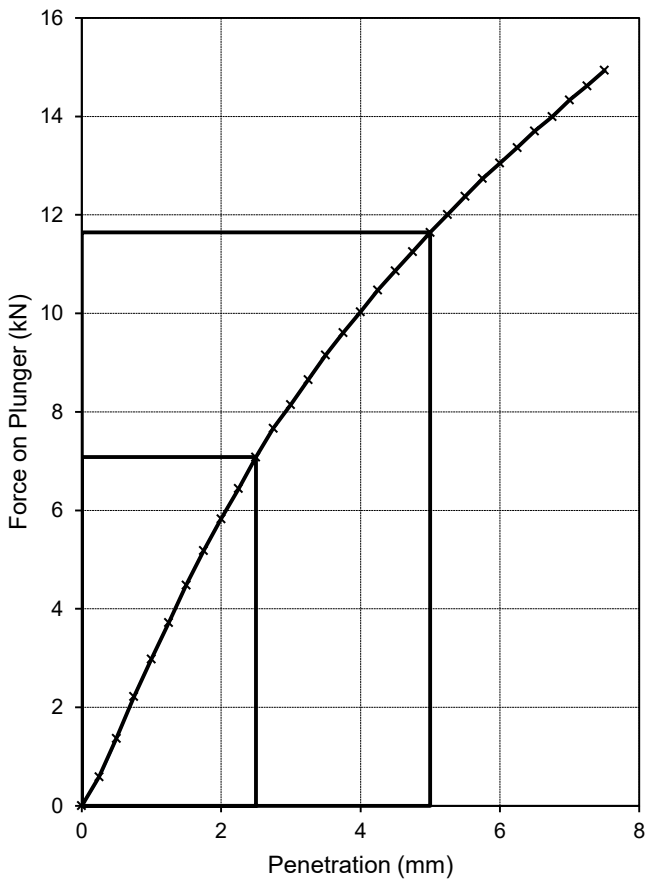
The specimen was tested in an unsoaked condition.
The specimen was tested at the as received water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 1.98 Mg/m³
Prepared dry density 1.80 Mg/m³
4.4 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	8.0 kg	8.0 kg
Seating load	50 N	50 N
Water content	10 %	9.8 %
CBR Value	44 %	58 %

Top of Specimen



Base of Specimen



Tested by DF

Checked and Approved by

J A Reynolds - Director
20/07/2023

Project Number:

GEO / 38413

Project Name:

GREAT BEAR, DEESIDE
10579

GEOLABS

UKAS TESTING 1982

BS1377 : Part 4 : Clause 7 : 1990

CALIFORNIA BEARING RATIO

Location	WS18
Depth (m)	0.90
Sample Type	B

Description:

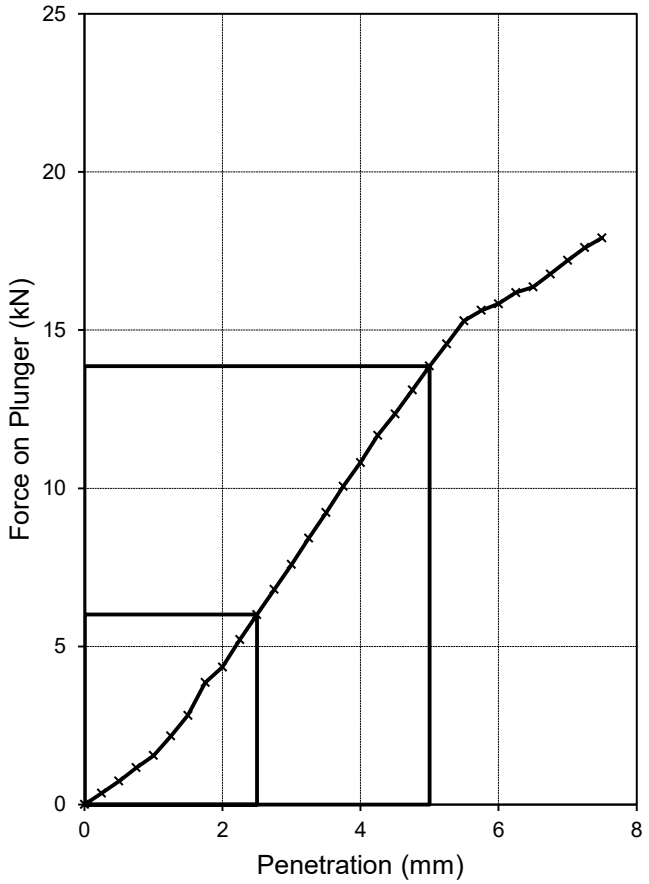
Brown SAND with fine to coarse gravel.

PREPARATION DETAILS

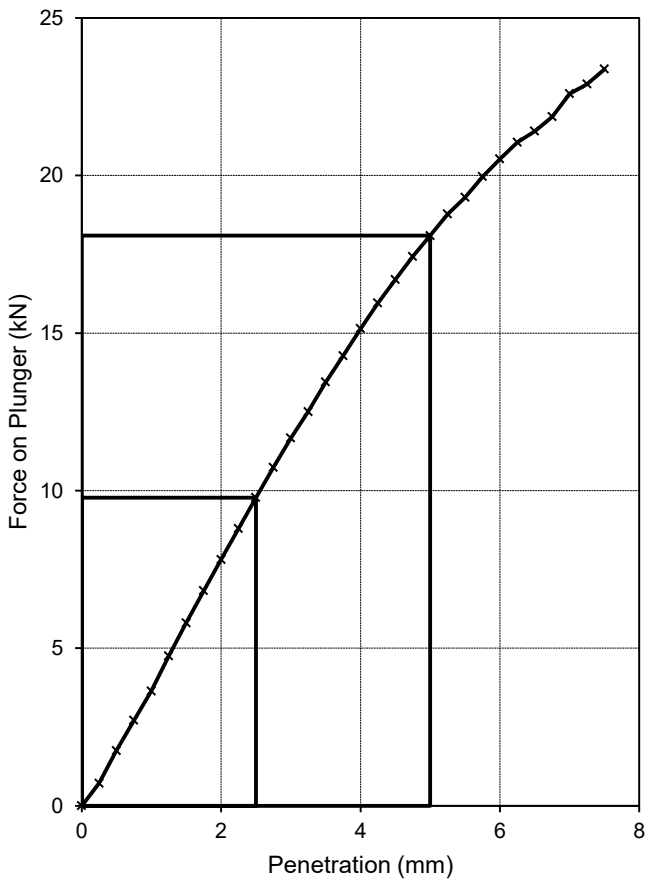
The specimen was tested in an unsoaked condition.
The specimen was tested at the as received water content
The specimen was prepared by dynamic compaction using a 2.5 kg rammer
Prepared bulk density 2.06 Mg/m³
Prepared dry density 1.95 Mg/m³
7.4 % of the sample was retained on a 20mm sieve

Test Details	Top	Base
Surcharge	8.0 kg	8.0 kg
Seating load	50 N	50 N
Water content	5.4 %	5.5 %
CBR Value	69 %	90 %

Top of Specimen



Base of Specimen



Tested by DF
Checked and Approved by

J A Reynolds - Director
20/07/2023

Project Number:

GEO / 38413

Project Name:

GREAT BEAR, DEESIDE
10579

GEOLABS
UKAS TESTING 1982

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS

Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

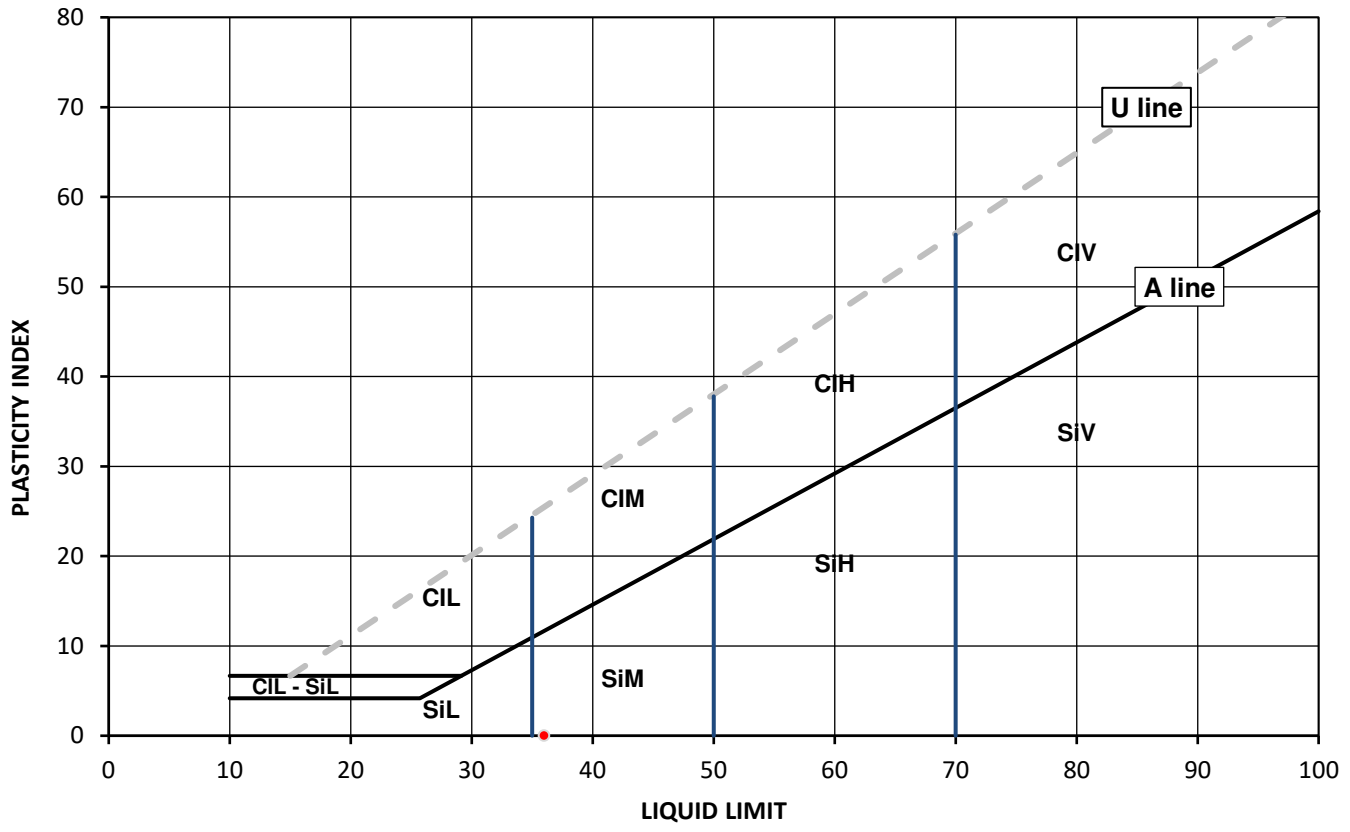
Client:	Patrick Parson	Client Reference:	10579
Client Address:	40 St. Paul's Square, Birmingham, B3 1FQ	Job Number:	23-43686-1
		Date Sampled:	06/07/2023
		Date Received:	07/07/2023
Contact:	Omar Dalvai	Date Tested:	14/07/2023
Site Address:	Great Bear Deeside	Sampled By:	Client - OMD

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2739802	Depth Top [m]:	3.90
Hole No.:	WS05	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Grey slightly clayey SAND		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
24	36	NP	NP	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 25/07/2023

GF 232.13

TEST CERTIFICATE

DETERMINATION OF LIQUID AND PLASTIC LIMITS
Tested in Accordance with:BS 1377-2:1990:Clause 4.4 and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

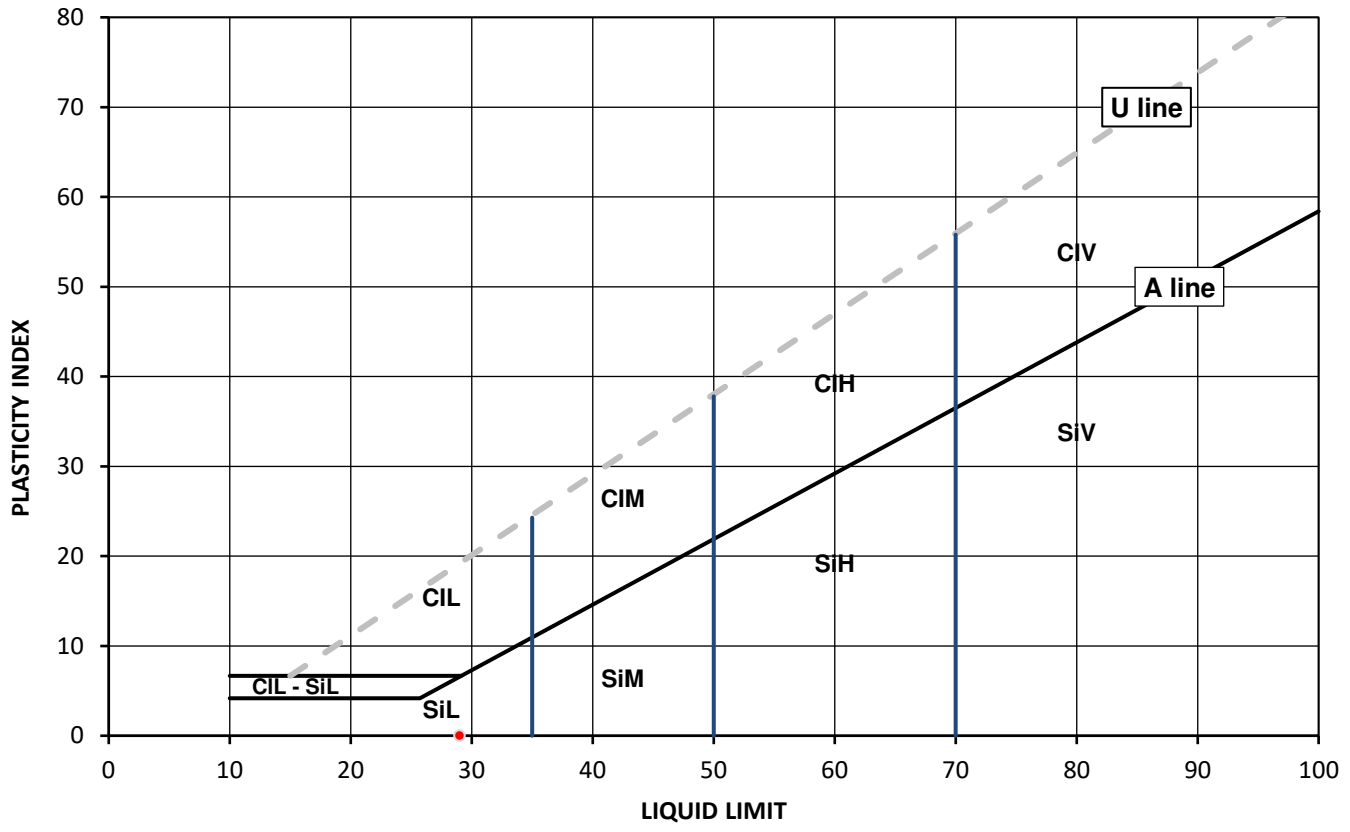
Client:	Patrick Parson	Client Reference:	10579
Client Address:	40 St. Paul's Square, Birmingham, B3 1FQ	Job Number:	23-43686-1
		Date Sampled:	06/07/2023
		Date Received:	07/07/2023
Contact:	Omar Dalvai	Date Tested:	14/07/2023
Site Address:	Great Bear Deeside	Sampled By:	Client - OMD

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test Results:

Laboratory Reference:	2739803	Depth Top [m]:	2.70
Hole No.:	WS10	Depth Base [m]:	Not Given
Sample Reference:	Not Given	Sample Type:	D
Sample Description:	Brown slightly clayey SAND		
Sample Preparation:	Tested in natural condition		

As Received Water Content [W] %	Liquid Limit [WL] %	Plastic Limit [Wp] %	Plasticity Index [Ip] %	% Passing 425µm BS Test Sieve
24	29	NP	NP	100



Legend, based on BS EN ISO 14688 2:2018 Geotechnical investigation and testing – Identification and classification of soil

		Plasticity		Liquid Limit
Cl	Clay	L	Low	below 35
Si	Silt	M	Medium	35 to 50
		H	High	50 to 70
		V	Very high	exceeding 70
		O	Organic	append to classification for organic material (eg ClHO)

Note: Water Content by BS 1377-2: 1990: Clause 3.2

Remarks: NP - non plastic

Signed: Katarzyna Koziel

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 25/07/2023

GF 232.13

SUMMARY REPORT

SUMMARY OF CLASSIFICATION TEST RESULTS

Tested in Accordance with:

Water Content by BS 1377-2:1990: Clause 3.2Atterberg by BS 1377-2: 1990: Clause 4.3 (4 Point Test), Clause 4.4 (1 Point Test) and 5

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client: Patrick Parson

Client Address: 40 St. Paul's Square, Birmingham, B3 1FQ

Contact: Omar Dalvai

Site Address: Great Bear Deeside

Client Reference: 10579
Job Number: 23-43686-1
Date Sampled: 06/07/2023
Date Received: 07/07/2023
Date Tested: 14/07/2023
Sampled By: Client - OMD

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	Water Content BS 1377-2 [W]	Water Content BS EN ISO 17892-1 [W]	Atterberg				Density			Total Porosity#		
		Reference	Depth Top	Depth Base	Type					% Passing 425um	WL	Wp	Ip	bulk	dry	PD			
			m	m				%	%	%	%	%	%	Mg/m3	Mg/m3	Mg/m3	%		
2739802	WS05	Not Given	3.90	Not Given	D	Grey slightly clayey SAND	Atterberg 1 Point	24		100	36	NP	NP						
2739803	WS10	Not Given	2.70	Not Given	D	Brown slightly clayey SAND	Atterberg 1 Point	24		100	29	NP	NP						

Note: # Non accredited; NP - Non plastic

Comments:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 25/07/2023

GF 234.16

SUMMARY REPORT

DETERMINATION OF WATER CONTENT

Tested in Accordance with: BS 1377-2: 1990: Clause 3.2

i2 Analytical Ltd
Unit 8 Harrowden Road
Brackmills Industrial Estate
Northampton NN4 7EB

4041

Client: Patrick Parson

Client Address: 40 St. Paul's Square, Birmingham, B3 1FQ

Contact: Omar Dalvai

Site Address: Great Bear Deeside

Client Reference: 10579
Job Number: 23-43686-1
Date Sampled: 06/07/2023
Date Received: 07/07/2023
Date Tested: 14/07/2023
Sampled By: Client - OMD

Testing carried out at i2 Analytical Limited, ul. Pionierow, 41-711 Ruda Slaska, Poland

Test results

Laboratory Reference	Hole No.	Sample				Description	Remarks	WC	Sample preparation / Oven temperature at the time of testing			
		Reference	Depth Top m	Depth Base m	Type			%				
2739802	WS05	Not Given	3.90	Not Given	D	Grey slightly clayey SAND		24	Sample was quartered, oven dried at 109 °C			
2739803	WS10	Not Given	2.70	Not Given	D	Brown slightly clayey SAND		24	Sample was quartered, oven dried at 109 °C			

Comments:

Signed:

Katarzyna Koziel
Reporting Specialist
for and on behalf of i2 Analytical Ltd

Date Reported: 25/07/2023

GF 099.17

Appendix D

Online Hazwaste results

Waste Classification Report

HazWasteOnline™ classifies waste as either **hazardous** or **non-hazardous** based on its chemical composition, related legislation and the rules and data defined in the current UK or EU technical guidance (Appendix C) (note that HP 9 Infectious is not assessed). It is the responsibility of the classifier named below to:

a) understand the origin of the waste
b) select the correct List of Waste code(s)
c) confirm that the list of determinands, results and sampling plan are fit for purpose
d) select and justify the chosen metal species (Appendix B)
e) correctly apply moisture correction and other available corrections
f) add the meta data for their user-defined substances (Appendix A)
g) check that the classification engine is suitable with respect to the national destination of the waste (Appendix C)

To aid the reviewer, the laboratory results, assumptions and justifications managed by the classifier are highlighted in pale yellow.

0CKFL-QFNM0-TYR5X

Job name

10579 - Great Bear, Deeside

Description/Comments

Project

10579 - Great Bear, Deeside

Site

Great Bear, Deeside

Classified by

Name:
Hugh Adler
Date:
26 Jul 2023 08:46 GMT
Telephone:
0)121 592 0000

Company:
PPCP Ltd t/a Patrick Parsons
40 St Pauls Square
Birmingham
B3 1FQ

HazWasteOnline™ provides a two day, hazardous waste classification course that covers the use of the software and both basic and advanced waste classification techniques. Certification has to be renewed every 3 years.

HazWasteOnline™ Certification: **CERTIFIED**

Course	Date
Hazardous Waste Classification	10 Feb 2022

Next 3 year Refresher due by Feb 2025

Purpose of classification

2 - Material Characterisation

Address of the waste

Great Bear, Deeside **Post Code** CH5 2LL

SIC for the process giving rise to the waste

41201 Construction of commercial buildings

Description of industry/producer giving rise to the waste

Development of commercial buildings on undeveloped land.

Description of the specific process, sub-process and/or activity that created the waste

Waste created during the excavation of service and foundation runs.

Description of the waste

Made ground and natural soils comprising slightly silty sand.

Job summary

#	Sample name	Depth [m]	Classification Result	Hazard properties	Page
1	WS02	0.40	Non Hazardous		3
2	WS04	0.60	Non Hazardous		5
3	WS05	0.60	Non Hazardous		7
4	WS07	0.60	Non Hazardous		9
5	WS09	0.25	Non Hazardous		11
6	WS12	0.20	Non Hazardous		13
7	WS13	0.60	Non Hazardous		15
8	WS14	0.40	Non Hazardous		17
9	WS15	0.10	Non Hazardous		19
10	WS16	0.10	Non Hazardous		21

Related documents

#	Name	Description
1	PP Standard Suite	waste stream template used to create this Job

Report

Created by: Hugh Adler

Created date: 26 Jul 2023 08:46 GMT

Classification of sample: WS02

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS02
Sample Depth:
0.40 m
Moisture content:
4.1%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 4.1% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.2 pH		9.2 pH	9.2 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.9 mg/kg	1.32	7.79 mg/kg	0.000779 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5.6 mg/kg	1.462	8.185 mg/kg	0.000818 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		5.3 mg/kg	3.929	20.824 mg/kg	0.00208 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	5.4 mg/kg	1.56	8.423 mg/kg	0.00054 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		4.7 mg/kg	2.976	13.988 mg/kg	0.0014 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		18 mg/kg	2.774	49.935 mg/kg	0.00499 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
13	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
24	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
26	●	phenanthrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
										Total:	0.0121 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS04

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS04
Sample Depth:
0.60 m
Moisture content:
5.7%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 5.7% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		10.3	pH		10.3	pH	10.3 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		8	mg/kg	1.32	10.563	mg/kg	0.00106 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.4	mg/kg	1.285	0.514	mg/kg	0.00004 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15	mg/kg	1.462	21.923	mg/kg	0.00219 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		23	mg/kg	3.929	90.368	mg/kg	0.00904 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	35	mg/kg	1.56	54.594	mg/kg	0.0035 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		12	mg/kg	2.976	35.715	mg/kg	0.00357 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		170	mg/kg	2.774	471.605	mg/kg	0.0472 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
12	TPH (C6 to C40) petroleum group			TPH		40	mg/kg		40	mg/kg	0.004 %		
13	acenaphthene		201-469-6	83-32-9		0.15	mg/kg		0.15	mg/kg	0.000015 %		
14	acenaphthylene		205-917-1	208-96-8		0.11	mg/kg		0.11	mg/kg	0.000011 %		
15	anthracene		204-371-1	120-12-7		0.16	mg/kg		0.16	mg/kg	0.000016 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				0.6	mg/kg		0.6	mg/kg	0.00006 %		
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				0.61	mg/kg		0.61	mg/kg	0.000061 %		
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				0.74	mg/kg		0.74	mg/kg	0.000074 %		
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				0.49	mg/kg		0.49	mg/kg	0.000049 %		
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				0.34	mg/kg		0.34	mg/kg	0.000034 %		
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				0.61	mg/kg		0.61	mg/kg	0.000061 %		
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				1.1	mg/kg		1.1	mg/kg	0.00011 %		
			205-912-4	206-44-0									
24	●	fluorene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				0.48	mg/kg		0.48	mg/kg	0.000048 %		
			205-893-2	193-39-5									
26	●	phenanthrene				0.6	mg/kg		0.6	mg/kg	0.00006 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				1	mg/kg		1	mg/kg	0.0001 %		
			204-927-3	129-00-0									
										Total:	0.0717 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded during site investigation.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.004%)

Classification of sample: WS05

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS05
Sample Depth:
0.60 m
Moisture content:
3.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 3.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.6 pH		9.6 pH	9.6 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.9 mg/kg	1.32	9.11 mg/kg	0.000911 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		11 mg/kg	1.462	16.077 mg/kg	0.00161 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		24 mg/kg	3.929	94.297 mg/kg	0.00943 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	25 mg/kg	1.56	38.995 mg/kg	0.0025 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		5.2 mg/kg	2.976	15.477 mg/kg	0.00155 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		53 mg/kg	2.774	147.03 mg/kg	0.0147 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
13	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			205-912-4	206-44-0									
24	●	fluorene				0.07	mg/kg		0.07	mg/kg	0.000007 %		
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
26	●	phenanthrene				0.18	mg/kg		0.18	mg/kg	0.000018 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-927-3	129-00-0									
										Total:	0.0322 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS07

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS07
Sample Depth:
0.60 m
Moisture content:
8.7%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 8.7% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.6	pH		8.6	pH	8.6 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.7	mg/kg	1.32	7.526	mg/kg	0.000753 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.1	mg/kg	1.462	8.915	mg/kg	0.000892 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		4.9	mg/kg	3.929	19.252	mg/kg	0.00193 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	8.3	mg/kg	1.56	12.946	mg/kg	0.00083 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		5.2	mg/kg	2.976	15.477	mg/kg	0.00155 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		33	mg/kg	2.774	91.547	mg/kg	0.00915 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
12	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
13	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
14	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
15	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
24	●	fluorene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
26	●	phenanthrene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
										Total:	0.0166 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS09

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS09
Sample Depth:
0.25 m
Moisture content:
4.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 4.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.4	pH		8.4	pH	8.4 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.7	mg/kg	1.32	7.526	mg/kg	0.000753 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		5.4	mg/kg	1.462	7.892	mg/kg	0.000789 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		4.8	mg/kg	3.929	18.859	mg/kg	0.00189 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	5.9	mg/kg	1.56	9.203	mg/kg	0.00059 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		4.6	mg/kg	2.976	13.691	mg/kg	0.00137 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		25	mg/kg	2.774	69.354	mg/kg	0.00694 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
12	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
13	acenaphthene		201-469-6	83-32-9		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
15	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-912-4	206-44-0									
24	●	fluorene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
26	●	phenanthrene				0.1	mg/kg		0.1	mg/kg	0.00001 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			204-927-3	129-00-0									
										Total:	0.0138 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS12

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS12
Sample Depth:
0.20 m
Moisture content:
7.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.6 pH		9.6 pH	9.6 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		12 mg/kg	1.32	15.844 mg/kg	0.00158 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.5 mg/kg	1.285	0.643 mg/kg	0.00005 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		15 mg/kg	1.462	21.923 mg/kg	0.00219 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		16 mg/kg	3.929	62.865 mg/kg	0.00629 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	51 mg/kg	1.56	79.551 mg/kg	0.0051 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<**LOD**
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		13 mg/kg	2.976	38.691 mg/kg	0.00387 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		150 mg/kg	2.774	416.122 mg/kg	0.0416 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<**LOD**
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<**LOD**
13	acenaphthene		201-469-6	83-32-9		0.25 mg/kg		0.25 mg/kg	0.000025 %		
14	acenaphthylene		205-917-1	208-96-8		0.1 mg/kg		0.1 mg/kg	0.00001 %		
15	anthracene		204-371-1	120-12-7		0.29 mg/kg		0.29 mg/kg	0.000029 %		

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				1.1	mg/kg		1.1	mg/kg	0.00011 %		
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				1.2	mg/kg		1.2	mg/kg	0.00012 %		
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				1.4	mg/kg		1.4	mg/kg	0.00014 %		
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				0.9	mg/kg		0.9	mg/kg	0.00009 %		
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				0.6	mg/kg		0.6	mg/kg	0.00006 %		
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				1.1	mg/kg		1.1	mg/kg	0.00011 %		
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				0.2	mg/kg		0.2	mg/kg	0.00002 %		
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				2.4	mg/kg		2.4	mg/kg	0.00024 %		
			205-912-4	206-44-0									
24	●	fluorene				0.23	mg/kg		0.23	mg/kg	0.000023 %		
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				0.79	mg/kg		0.79	mg/kg	0.000079 %		
			205-893-2	193-39-5									
26	●	phenanthrene				1	mg/kg		1	mg/kg	0.0001 %		
			201-581-5	85-01-8									
27		naphthalene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				2.3	mg/kg		2.3	mg/kg	0.00023 %		
			204-927-3	129-00-0									
										Total:	0.0635 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS13

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS13
Sample Depth:
0.60 m
Moisture content:
6.4%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 6.4% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		8.7 pH		8.7 pH	8.7 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		5.3 mg/kg	1.32	6.998 mg/kg	0.0007 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2 mg/kg	1.285	<0.257 mg/kg	<0.00002 %		<LOD
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		6.8 mg/kg	1.462	9.939 mg/kg	0.000994 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		6.6 mg/kg	3.929	25.932 mg/kg	0.00259 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	10 mg/kg	1.56	15.598 mg/kg	0.001 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3 mg/kg	1.353	<0.406 mg/kg	<0.0000406 %		<LOD
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		5.8 mg/kg	2.976	17.262 mg/kg	0.00173 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		43 mg/kg	2.774	119.288 mg/kg	0.0119 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
12	TPH (C6 to C40) petroleum group			TPH		410 mg/kg		410 mg/kg	0.041 %		
13	acenaphthene		201-469-6	83-32-9		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
14	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-912-4	206-44-0									
24	●	fluorene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			205-893-2	193-39-5									
26	●	phenanthrene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
			204-927-3	129-00-0									
										Total:	0.0605 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Supplementary Hazardous Property Information

HP 3(i): Flammable "flammable liquid waste: liquid waste having a flash point below 60°C or waste gas oil, diesel and light heating oils having a flash point > 55°C and <= 75°C"

Force this Hazardous property to non hazardous because No free product hydrocarbons recorded during site investigation.

Hazard Statements hit:

Flam. Liq. 3; H226 "Flammable liquid and vapour."

Because of determinand:

TPH (C6 to C40) petroleum group: (conc.: 0.041%)

Classification of sample: WS14

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS14
Sample Depth:
0.40 m
Moisture content:
7.9%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 7.9% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		9.5	pH		9.5	pH	9.5 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7	mg/kg	1.32	9.242	mg/kg	0.000924 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.4	mg/kg	1.285	0.514	mg/kg	0.00004 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		9.9	mg/kg	1.462	14.469	mg/kg	0.00145 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		30	mg/kg	3.929	117.872	mg/kg	0.0118 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	26	mg/kg	1.56	40.555	mg/kg	0.0026 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		<0.3	mg/kg	1.353	<0.406	mg/kg	<0.0000406 %		<LOD
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		7.4	mg/kg	2.976	22.024	mg/kg	0.0022 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		120	mg/kg	2.774	332.898	mg/kg	0.0333 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<LOD
12	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<LOD
13	acenaphthene		201-469-6	83-32-9		0.11	mg/kg		0.11	mg/kg	0.000011 %		
14	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD
15	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				0.12	mg/kg		0.12	mg/kg	0.000012 %		
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				0.17	mg/kg		0.17	mg/kg	0.000017 %		
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				0.16	mg/kg		0.16	mg/kg	0.000016 %		
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				0.43	mg/kg		0.43	mg/kg	0.000043 %		
			205-912-4	206-44-0									
24	●	fluorene				0.11	mg/kg		0.11	mg/kg	0.000011 %		
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
26	●	phenanthrene				0.33	mg/kg		0.33	mg/kg	0.000033 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				0.35	mg/kg		0.35	mg/kg	0.000035 %		
			204-927-3	129-00-0									
										Total:	0.0539 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS15

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS15
Sample Depth:
0.10 m
Moisture content:
9.4%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.4% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.8	pH		7.8	pH	7.8 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		7.3	mg/kg	1.32	9.638	mg/kg	0.000964 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	<0.2	mg/kg	1.285	<0.257	mg/kg	<0.00002 %		<**LOD**
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		36	mg/kg	1.462	52.616	mg/kg	0.00526 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		18	mg/kg	3.929	70.723	mg/kg	0.00707 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	30	mg/kg	1.56	46.794	mg/kg	0.003 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.4	mg/kg	1.353	0.541	mg/kg	0.0000541 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		34	mg/kg	2.976	101.193	mg/kg	0.0101 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1	mg/kg	1.405	<1.405	mg/kg	<0.000141 %		<**LOD**
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		70	mg/kg	2.774	194.19	mg/kg	0.0194 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2	mg/kg	1.923	<2.308	mg/kg	<0.000231 %		<**LOD**
12	TPH (C6 to C40) petroleum group			TPH		<10	mg/kg		<10	mg/kg	<0.001 %		<**LOD**
13	acenaphthene		201-469-6	83-32-9		0.14	mg/kg		0.14	mg/kg	0.000014 %		
14	acenaphthylene		205-917-1	208-96-8		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
15	anthracene		204-371-1	120-12-7		<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-034-00-4	205-911-9	205-99-2									
19	●	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23	●	fluoranthene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			205-912-4	206-44-0									
24	●	fluorene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			201-695-5	86-73-7									
25	●	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
26	●	phenanthrene				0.27	mg/kg		0.27	mg/kg	0.000027 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	●	pyrene				0.05	mg/kg		0.05	mg/kg	0.000005 %		
			204-927-3	129-00-0									
										Total:	0.0474 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
●	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Classification of sample: WS16

Non Hazardous Waste
Classified as **17 05 04**
in the List of Waste

Sample details

Sample name:
WS16
Sample Depth:
0.10 m
Moisture content:
9.6%
(no correction)

LoW Code:
Chapter: 17: Construction and Demolition Wastes (including excavated soil from contaminated sites)
Entry: 17 05 04 (Soil and stones other than those mentioned in 17 05 03)

Hazard properties

None identified

Determinands

Moisture content: 9.6% No Moisture Correction applied (MC)

#	Determinand	EU CLP index number	EC Number	CAS Number	CLP Note	User entered data	Conv. Factor	Compound conc.	Classification value	MC Applied	Conc. Not Used
1	pH			PH		7.7 pH		7.7 pH	7.7 pH		
2	arsenic { arsenic trioxide }	033-003-00-0	215-481-4	1327-53-3		6.9 mg/kg	1.32	9.11 mg/kg	0.000911 %		
3	cadmium { cadmium sulfide }	048-010-00-4	215-147-8	1306-23-6	1	0.3 mg/kg	1.285	0.386 mg/kg	0.00003 %		
4	chromium in chromium(III) compounds { chromium(III) oxide (worst case) }		215-160-9	1308-38-9		20 mg/kg	1.462	29.231 mg/kg	0.00292 %		
5	copper { copper sulphate pentahydrate }	029-023-00-4	231-847-6	7758-99-8		25 mg/kg	3.929	98.226 mg/kg	0.00982 %		
6	lead { lead chromate }	082-004-00-2	231-846-0	7758-97-6	1	37 mg/kg	1.56	57.713 mg/kg	0.0037 %		
7	mercury { mercury dichloride }	080-010-00-X	231-299-8	7487-94-7		0.4 mg/kg	1.353	0.541 mg/kg	0.0000541 %		
8	nickel { nickel chromate }	028-035-00-7	238-766-5	14721-18-7		15 mg/kg	2.976	44.644 mg/kg	0.00446 %		
9	selenium { selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex }	034-002-00-8				<1 mg/kg	1.405	<1.405 mg/kg	<0.000141 %		<LOD
10	zinc { zinc chromate }	024-007-00-3	236-878-9	13530-65-9		76 mg/kg	2.774	210.835 mg/kg	0.0211 %		
11	chromium in chromium(VI) compounds { chromium(VI) oxide }	024-001-00-0	215-607-8	1333-82-0		<1.2 mg/kg	1.923	<2.308 mg/kg	<0.000231 %		<LOD
12	TPH (C6 to C40) petroleum group			TPH		<10 mg/kg		<10 mg/kg	<0.001 %		<LOD
13	acenaphthene		201-469-6	83-32-9		0.22 mg/kg		0.22 mg/kg	0.000022 %		
14	acenaphthylene		205-917-1	208-96-8		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD
15	anthracene		204-371-1	120-12-7		<0.05 mg/kg		<0.05 mg/kg	<0.000005 %		<LOD

#		Determinand			CLP Note	User entered data		Conv. Factor	Compound conc.		Classification value	MC Applied	Conc. Not Used
		EU CLP index number	EC Number	CAS Number									
16		benzo[a]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-033-00-9	200-280-6	56-55-3									
17		benzo[a]pyrene; benzo[def]chrysene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-032-00-3	200-028-5	50-32-8									
18		benzo[b]fluoranthene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-034-00-4	205-911-9	205-99-2									
19	•	benzo[ghi]perylene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-883-8	191-24-2									
20		benzo[k]fluoranthene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-036-00-5	205-916-6	207-08-9									
21		chrysene				0.06	mg/kg		0.06	mg/kg	0.000006 %		
		601-048-00-0	205-923-4	218-01-9									
22		dibenz[a,h]anthracene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-041-00-2	200-181-8	53-70-3									
23	•	fluoranthene				0.13	mg/kg		0.13	mg/kg	0.000013 %		
			205-912-4	206-44-0									
24	•	fluorene				0.25	mg/kg		0.25	mg/kg	0.000025 %		
			201-695-5	86-73-7									
25	•	indeno[123-cd]pyrene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
			205-893-2	193-39-5									
26	•	phenanthrene				0.57	mg/kg		0.57	mg/kg	0.000057 %		
			201-581-5	85-01-8									
27		naphthalene				<0.05	mg/kg		<0.05	mg/kg	<0.000005 %		<**LOD**
		601-052-00-2	202-049-5	91-20-3									
28	•	pyrene				0.09	mg/kg		0.09	mg/kg	0.000009 %		
			204-927-3	129-00-0									
										Total:	0.0445 %		

Key

	User supplied data
	Determinand values ignored for classification, see column 'Conc. Not Used' for reason
•	Determinand defined or amended by HazWasteOnline (see Appendix A)
	Speciated Deteminand - Unless the Determinand is Note 1, the Conversion Factor is used to calculate the compound concentration
<LOD	Below limit of detection
CLP: Note 1	Only the metal concentration has been used for classification

Appendix A: Classifier defined and non GB MCL determinands

pH (CAS Number: PH)

Description/Comments: Appendix C4
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: None.

chromium(III) oxide (worst case) (EC Number: 215-160-9, CAS Number: 1308-38-9)

Description/Comments: Data from C&L Inventory Database
Data source: https://echa.europa.eu/information-on-chemicals/cl-inventory-database/-/discli/details/33806
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H332 , Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Resp. Sens. 1; H334 , Skin Sens. 1; H317 , Repr. 1B; H360FD , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

TPH (C6 to C40) petroleum group (CAS Number: TPH)

Description/Comments: Hazard statements taken from WM3 1st Edition 2015; Risk phrases: WM2 3rd Edition 2013
Data source: WM3 1st Edition 2015
Data source date: 25 May 2015
Hazard Statements: Flam. Liq. 3; H226 , Asp. Tox. 1; H304 , STOT RE 2; H373 , Muta. 1B; H340 , Carc. 1B; H350 , Repr. 2; H361d , Aquatic Chronic 2; H411

acenaphthene (EC Number: 201-469-6, CAS Number: 83-32-9)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Aquatic Chronic 2; H411

acenaphthylene (EC Number: 205-917-1, CAS Number: 208-96-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Acute Tox. 4; H302 , Acute Tox. 1; H330 , Acute Tox. 1; H310 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315

anthracene (EC Number: 204-371-1, CAS Number: 120-12-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 17 Jul 2015
Hazard Statements: Eye Irrit. 2; H319 , STOT SE 3; H335 , Skin Irrit. 2; H315 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

benzo[ghi]perylene (EC Number: 205-883-8, CAS Number: 191-24-2)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 28/02/2015
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 23 Jul 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluoranthene (EC Number: 205-912-4, CAS Number: 206-44-0)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

fluorene (EC Number: 201-695-5, CAS Number: 86-73-7)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

indeno[123-cd]pyrene (EC Number: 205-893-2, CAS Number: 193-39-5)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Carc. 2; H351

phenanthrene (EC Number: 201-581-5, CAS Number: 85-01-8)

Description/Comments: Data from C&L Inventory Database
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 06 Aug 2015
Hazard Statements: Acute Tox. 4; H302 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Carc. 2; H351 , Skin Sens. 1; H317 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410 , Skin Irrit. 2; H315

pyrene (EC Number: 204-927-3, CAS Number: 129-00-0)

Description/Comments: Data from C&L Inventory Database; SDS Sigma Aldrich 2014
Data source: http://echa.europa.eu/web/guest/information-on-chemicals/cl-inventory-database
Data source date: 21 Aug 2015
Hazard Statements: Skin Irrit. 2; H315 , Eye Irrit. 2; H319 , STOT SE 3; H335 , Aquatic Acute 1; H400 , Aquatic Chronic 1; H410

Appendix B: Rationale for selection of metal species

arsenic {arsenic trioxide}

(enter justification for selecting this species)

cadmium {cadmium sulfide}

(enter justification for selecting this species)

chromium in chromium(III) compounds {chromium(III) oxide (worst case)}

(enter justification for selecting this species)

copper {copper sulphate pentahydrate}

(enter justification for selecting this species)

lead {lead chromate}

(enter justification for selecting this species)

mercury {mercury dichloride}

(enter justification for selecting this species)

nickel {nickel chromate}

(enter justification for selecting this species)

selenium {selenium compounds with the exception of cadmium sulphoselenide and those specified elsewhere in this Annex}

(enter justification for selecting this species)

zinc {zinc chromate}

(enter justification for selecting this species)

chromium in chromium(VI) compounds {chromium(VI) oxide}

(enter justification for selecting this species)

Appendix C: Version

HazWasteOnline Classification Engine: WM3 1st Edition v1.2.GB - Oct 2021
HazWasteOnline Classification Engine Version: 2023.203.5693.10482 (22 Jul 2023)
HazWasteOnline Database: 2023.203.5693.10482 (22 Jul 2023)

This classification utilises the following guidance and legislation:
WM3 v1.2.GB - Waste Classification - 1st Edition v1.2.GB - Oct 2021
CLP Regulation - Regulation 1272/2008/EC of 16 December 2008
1st ATP - Regulation 790/2009/EC of 10 August 2009
2nd ATP - Regulation 286/2011/EC of 10 March 2011
3rd ATP - Regulation 618/2012/EU of 10 July 2012
4th ATP - Regulation 487/2013/EU of 8 May 2013
Correction to 1st ATP - Regulation 758/2013/EU of 7 August 2013
5th ATP - Regulation 944/2013/EU of 2 October 2013
6th ATP - Regulation 605/2014/EU of 5 June 2014
WFD Annex III replacement - Regulation 1357/2014/EU of 18 December 2014
Revised List of Waste 2014 - Decision 2014/955/EU of 18 December 2014
7th ATP - Regulation 2015/1221/EU of 24 July 2015
8th ATP - Regulation (EU) 2016/918 of 19 May 2016
9th ATP - Regulation (EU) 2016/1179 of 19 July 2016
10th ATP - Regulation (EU) 2017/776 of 4 May 2017
HP14 amendment - Regulation (EU) 2017/997 of 8 June 2017
13th ATP - Regulation (EU) 2018/1480 of 4 October 2018
14th ATP - Regulation (EU) 2020/217 of 4 October 2019
15th ATP - Regulation (EU) 2020/1182 of 19 May 2020
The Chemicals (Health and Safety) and Genetically Modified Organisms (Contained Use)(Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1567 of 16th December 2020
The Waste and Environmental Permitting etc. (Legislative Functions and Amendment etc.) (EU Exit) Regulations 2020 - UK: 2020 No. 1540 of 16th December 2020
GB MCL List - version 1.1 of 09 June 2021

Appendix E

Patrick Parsons Generic Assessment Criteria (GAC)

PATRICK PARSONS

CREATING PLACES FOR FUTURE GENERATIONS TO THRIVE

Generic Assessment Critera

		Residential with Homegrown Produce			Residential without Homegrown Produce			Allotments			Commercial			Public Open Space Near Residential Housing			Public Open Space Park		
	SOM %	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6	1	2.5	6
Metals and Inorganics (non SOM dependent)	Arsenic		37			40			43			640			79			170	
	Beryllium		1.7			1.7			35			12			2.2			63	
	Boron		290			11000			45			240000			21000			46000	
	Cadmium		11			85			1.9			190			120			555	
	Chromium (III)		910			910			18000			8600			1500			33000	
	Chromium (VI) (Hexavalent)		6			6			1.8			33			7.7			220	
	Copper		2400			7100			520			68000			12000			44000	
	Elemental Mercury		1.2			1.2			21			58			16			30	
	Inorganic Mercury		40			56			19			1100			120			240	
	Methylmercury		11			15			6			320			40			68	
	Lead		200			310			80			2300			630			1300	
	Nickel		130			180			53			980			230			800	
	Selenium		250			430			88			12000			1100			1800	
	Vanadium		410			1200			91			9000			2000			5000	
	Zinc		3700			40000			620			730000			81000			170000	
Polyaromatic Hydrocarbons	Acenaphthene	210	510	1100	3000	4700	6000	34	85	200	84000	97000	100000	15000	15000	15000	29000	30000	30000
	Acenaphthylene	170	420	920	2900	4600	6000	28	69	160	83000	97000	100000	15000	15000	15000	29000	30000	30000
	Anthracene	2400	5400	11000	31000	35000	37000	380	950	2200	520000	540000	540000	74000	74000	74000	150000	150000	150000
	Benzo[a]anthracene	7.2	11	13	11	14	15	2.9	6.5	13	170	170	180	29	29	29	49	56	62
	Benzo[a]pyrene	2.2	2.7	3	3.2	3.2	3.2	0.97	2.0	3.5	35	35	36	5.7	5.7	5.7	11	12	13
	Benzo[b]fluoranthene	2.6	3.3	3.7	3.9	4.0	4.0	0.99	2.1	3.9	44	44	45	7.1	7.2	7.2	13	15	16
	Benzo[ghi]perylene	320	340	350	360	360	360	290	470	640	3900	4000	4000	640	640	640	1400	1500	1600
	Benzo[k]fluoranthene	77	93	100	110	110	110	37	75	130	1200	1200	1200	190	190	190	370	410	440
	Chrysene	15	22	27	30	31	32	4.1	9.4	19	350	350	350	57	57	57	93	110	120
	Dibenz[ah]anthracene	0.24	0.28	0.3	0.31	0.32	0.32	0.14	0.27	0.43	3.5	3.6	3.6	0.57	0.57	0.58	1.1	1.3	1.4
	Fluoranthene	280	560	890	1500	1600	1600	52	130	290	23000	23000	23000	3100	3100	3100	6300	6300	6400
	Fluorene	170	400	860	2800	3800	4500	27	67	160	63000	68000	71000	9900	9900	9900	20000	20000	20000
	Indeno[123-cd]pyrene	27	36	41	45	46	46	9.5	21	39	500	510	510	82	82	82	150	170	180
	Naphthalene	2.3	5.6	13	2.3	5.6	13	4.1	10	24	190	460	1100	4900	4900	4900	1200	1900	3000
	Phenanthrene	95	220	440	1300	1500	1500	15	38	90	22000	22000	23000	3100	3100	3100	6200	6200	6300
	Pyrene	620	1200	2000	3700	3800	3800	110	270	620	54000	54000	54000	7400	7400	7400	15000	15000	15000
	Coal Tar (B[a]P as surrogate marker)	0.79	0.98	1.1	1.2	1.2	1.2	0.32	0.67	1.2	15	15	15	2.2	2.2	2.2	4.4	4.7	4.8
Petroleum Hydrocarbons	Benzene	0.087	0.17	0.37	0.38	0.7	1.4	0.017	0.034	0.075	27	47	90	72	72	73	90	100	110
	Toluene	130	290	660	880	1900	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000
	Ethylbenzene	47	110	260	83	190	440	16	39	91	5700	13000	27000	24000	24000	25000	17000	22000	27000
	m-Xylene	59	140	320	82	190	450	31	74	170	6200	14000	31000	41000	42000	43000	17000	24000	32000
	o-Xylene	60	140	330	88	210	480	28	67	160	6600	15000	33000	41000	42000	43000	17000	24000	33000
	p-Xylene	56	130	310	79	180	430	29	69	160	5900	14000	30000	41000	42000	43000	17000	23000	31000
	Aliphatic EC 5-6	42	78	160	42	78	160	730	1700	3900	3200	5900	12000	570000	590000	600000	95000	130000	180000
	Aliphatic EC >6-8	100	230	530	100	230	530	2300	5600	13000	7800	17000	40000	600000	610000	620000	150000	220000	320000
	Aliphatic EC >8-10	27	65	150	27	65	150	320	770	1700	2000	4800	11000	13000	13000	13000	14000	18000	21000
	Aliphatic EC >10-12	130	330	760	130	330	770	2200	4400	7300	9700	23000	47000	13000	13000	13000	21000	23000	24000
	Aliphatic EC >12-16	1100	2400	4300	1100	2400	4400	11000	13000	13000	59000	82000	90000	13000	13000	13000	25000	25000	26000
	Aliphatic EC >16-35	65000	92000	110000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	480000	490000
	Aliphatic EC >35-44	65000	92000	110000	65000	92000	110000	260000	270000	270000	1600000	1700000	1800000	250000	250000	250000	450000	480000	490000
	Aromatic EC 5-7 (benzene)	70	140	300	370	690	1400	13	27	57	26000	46000	86000	56000	56000	56000	76000	84000	92000
	Aromatic EC >7-8 (toluene)	130	290	660	860	1800	3900	22	51	120	56000	110000	180000	56000	56000	56000	87000	95000	100000
	Aromatic EC >8-10	34	83	190	47	110	270	8.6	21	51	3500	8100	17000	5000	5000	5000	7200	8500	9300
	Aromatic EC >10-12	74	180	380	250	590	1200	13	31	74	16000	28000	34000	5000	5000	5000	9200	9700	10000
	Aromatic EC >12-16	140	330	660	1800	2300	2500	23	57	130	36000	37000	38000	5100	5100	5000	10000	10000	10000
	Aromatic EC >16-21	260	540	930	1900	1900	1900	46	110	260	28000	28000	28000	3800	3800	3800	7600	7700	7800
	Aromatic EC >21-35	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900
	Aromatic EC >35-44	1100	1500	1700	1900	1900	1900	370	820	1600	28000	28000	28000	3800	3800	3800	7800	7800	7900
	Petroleum Hydrocarbons EC >44-70	1600	1800	1900	1900	1900	1900	1200	2100	3000	28000	28000	28000	3800	3800	3800	7800	7800	7900

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